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CJEC Vol. 14 No. 1
January, 1985

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The **Canadian Journal of Educational Communication** is published quarterly by the Association for Media and Technology in Education in Canada, P.O. Box 1021, Station B, Willowdale, Ontario, M2K 2T6. CJEC is indexed in the **Canadian Education Index.**
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EDITORIALS

FROM THE EDITOR

CJEC in 1985

by Denis Hlynka

With this issue, CJEC enters a new year, a year filled with exciting new developments in the field of educational technology. And, this issue is packed with more information than ever before. First, it is a guest edited issue, with Dr. Robert Bernard of Concordia University responsible for assembling an impressive array of experts in the field of distance education. We hope you enjoy their comments and their insights. Second, this is an issue literally bulging with news. Indeed, several of the news items have been separated into short features due to their length. There is so much news to report, that inevitably some items are being omitted, by editorial discretion. I hope YOUR news item has not been deleted, but the volume of submissions requires us to be selective. Third, AMTEC in general seems to be more active than usual, as many diverse topics and activities are reaching a climax. President Hanson's remarks below convey the sense of urgency and commitment of the AMTEC "team".

Finally, a backlog of submissions to CJEC has developed. As a result, authors are assured that every effort is being made to process their work through the referee system.

The next issue (V 15, #2) is a general issue covering various aspects of educational technology. Deadlines are Feb. 1 for advertising copy and news notes. The issue is targeted for release in early March.

Vol 15 #3, targeted for early May will be a guest edited issue with Gene Burdenuk, president of CSLA and Ed Crisp, AMTEC president-elect. Their theme will be the integration of library and media. Deadlines for news and advertising is April 1.

A new Canadian white paper on copyright "From Gutenburg to Telidon" has resulted in two comments which also appear in this issue. The white paper, incidentally, is available free from Consumer and Corporate Affairs, Government of Canada. Anyone who has an opinion on the future of educational use of copyright materials should act now. Let your views be known to AMTEC, to CJEC, and to your member of parliament.

Finally, a happy new year to all CJEC readers. May 1985 be the best yet...for all of us. □

PRESIDENT'S MESSAGE

AMTEC: Making a Difference?

by Bill Hanson

As your current President, I am now in my fifth year on the AMTEC Board of Directors. As a member of your leadership team I am concerned with what makes AMTEC work and how we can make it work better.

Right now I can tell you AMTEC is working. It might surprise you when and where AMTEC is working. This article outlines what is currently going on in the Association and suggests what might go on with some effort and commitment from our members. I am indebeted to past and present Board members for their ideas and more directly for their annual reports, on which this article is based.

Last January, AMTEC co-sponsored, with the Canadian Education Association, a micro-computer workshop entitled, **Educational Applications and Management Uses of the Computer**, for trustees and administrators, prior to the 1983 CEA Conference in Halifax. This workshop, chaired by Tom Rich, AMTEC Past President and assisted by several AMTEC members, was not only a moderate success financially but perhaps more importantly, provided a visibility for AMTEC and its possible role with an audience who needs to dialogue with their respective AMTEC members.

Coincidentally in January, AMTEC published an excellent bibliography, **Micro-Computers: A Guide to Periodicals for Teachers, Librarians and Media Specialists**, authored by Ken Haycock. This bibliography was distributed free to all members of AMTEC and the Canadian School Library Association. Since its publication and two printings, it has enjoyed distribution to many non-AMTEC members and the international community.

Also last year, our biannual publication authored by Gar Fizzard **Courses in Educational Technology** was published by AMTEC. This publication has been a long standing service to educators across Canada. Courses in Ed Tech was recently complemented by the special insert in CJEC titled **Courses in Micro-Computers in Education**, prepared by Len Proctor and his colleagues. Plans are currently underway for a second microcomputer course insert in an upcoming issue of CJEC.

The **Commonwealth Relations Trust Bursary** featured in the March issue of **CJEC** is an exciting opportunity highlighted for AMTEC members. This bursary, providing three months of all expense paid travel and study in the United Kingdom is a unique opportunity for media educators in Canada. This year's recipient, and AMTEC's first, will be announced this winter.

Our awards program too, has experienced growth and development. The AMTEC **Achievement Award**, sponsored by EMPDAC and awarded to our users and implementers, has become an established and regular part of our awards program. Our **Media Festival** Awards Program will soon be supplemented by the **Canadian Education Association Award** for excellence in small format media production. This award will likely be premiered at the 1985 Calgary Conference. In addition the Canadian Education Association also carries regular highlights of the AMTEC Media Festival in their fall newsletter. This September will mark a first for AMTEC, when the AMTEC Award of Excellence winners are featured at the Canadian Education Association National Conference in Quebec City. Our Media Festival has also been refined to include the emerging technologies, specificallly micro-computers, the new challenge to AMTEC members.

The progress of the **Canadian Journal of Educational Communication**, and our Annual Conference is also significant. Denis Hlynka and his network of contri-

Continued on page 30.

GUEST EDITORIAL

Technology and Distance Education

by Robert M. Bernard

Although the term distance education is fairly new, the idea that students can achieve personal learning objectives in a location that is remote from an institution is not. Correspondence schools have long served students who, for one reason or another, could not attend traditional, classroom-oriented institutions. Typically, the medium of instruction was print and the delivery system was the post office.

The change in terminology has come about, not because of any major philosophical reorientation, but because the term correspondence education so strongly connotes print-based instruction. Modern institutions offering courses at a distance use a variety of media; although not surprisingly, print is still predominant. Broadcast, cable and satellite television, audio and video cassettes and more recently computers have become important components in the delivery of distance education.

This issue of **CJEC** is devoted to an examination of current and future applications of technology in distance learning systems. In the first article by Gary Coldevin and Cheryl Amundsen, both of Concordia University, the status of satellite applications in distance learning on a world-wide basis is reviewed. The authors are encouraged by results that have emerged from projects in developing and developed countries alike. They see satellite communication performing a particularly useful function in third-world countries, where unreliable postal systems or remote learner populations often preclude print-based delivery. However, they believe that the greatest challenge to future progress in these countries lies in the areas of planning, resource utilization and courseware development.

The usefulness of computers for the delivery of course materials in distance education has only recently become a subject of discussion. While their potential, particularly in providing interactive instruction, appears to be great, the high cost of courseware development may limit their use in all but the most affluent countries. The next three articles are devoted to the role that computers do and can play in distance education. Ian Mugridge, Dean of Academic Affairs for the Open Learning Institute of British Columbia, describes recent developments in computer-based management of distance learning and the use of computers for direct instruction at this institution.

In a second article on computer applications, Gary Boyd, Professor and Director of the Doctoral Program in Educational Technology at Concordia University, argues that continuing affiliation with distance learning institutions may be greatly enhanced through communication via personal computers. A final article on computer applications is by G. A. B. Moore, Director of the Office for Educational Practice at the University of Guelph. He describes several pilot projects at his institution designed to assess the potentials of TELIDON (generically known as videotex) as an instructional medium for traditional and distance-oriented university-level instruction.

As the knowledgeable reader will no doubt recognize, the articles in this issue of CJEC address only a fraction of the topics and issues of concern relating to the application of technology in distance learning. Additional references in this area include:

Burge, E. J., Wilson, J., & Mehler, A. (1984). **Communications and information technologies on distance education in Canada** (Paper 5). Toronto: The Ontario Educational Communication Authority, TVOntario.

Other relevant titles in the series:

Paper 9 **Applications of new technologies in non-formal education in Canada: Two examples**

Paper 10 **Canadian cable television and education**

Paper 11 **Educational applications of videotex/Telidon in Canada**

Paper 12 **Educational applications of communication satellites in Canada**

Paper 13 **Educational videodisc in Canada**

Paper 14 **Educational teleconferencing in Canada**

Daniel, J. S., Stroud, M. A., & Thompson, J. (1981). **Learning at a Distance: A world perspective.** Edmonton: ICEE Publications.

Ruggles, R. H., et al. (1982). **Learning at a distance and the new technology.** Vancouver: Educational Research Institute of British Columbia (ERIBC).

Sewart, R. H., Keegan, D., & Holmberg, B. (Eds.) (1983). **Distance education: International perspectives**. London: Croon Helm. □

The Use of Communication Satellites for Distance Education: A World Perspective

Gary Coldevin and Cheryl Amundsen
Concordia University, Montreal

October 1957 and the launching of the first artificial satellite, Russia's Sputnik I, is generally taken as the beginning of the space age. In the relatively short time since then more than 25,000 satellites and space probes have been launched by governments and private organizations (Wigand, 1980). They provide most urban dwellers, and increasingly those in rural areas as well, with many communication services now taken for granted such as international telephone calls and telegrams, radio and television news reports. Direct participation in political, entertainment and sports events as they happen - virtually anywhere on the globe - has become commonplace.

In addition to broadcast and telecommunication services, satellites are used to forecast weather and climate patterns, to assess the health of food crops, to search for new sources of oil and minerals, to evaluate hurricane and tornado damage, to study the growth of cities, to search for aircraft or ships in distress, and to provide educational opportunities. The list of satellite applications seems unending, in line with their proliferation. In 1979, some 5,000 satellites were in orbit; by 1985 it is predicted that this number will rise to 10,000.

One hundred and six nations are currently members of the International Telecommunications Satellite Organization (INTELSAT). The majority of countries use these satellites for sending and receiving international telephone and telegram messages and radio and television signals in major urban centres. Some twenty-four countries also lease capacity from INTELSAT to service their internal national communication requirements. Several other countries have launched their own domestic vehicles. Canada led the way in 1972 with ANIK A-1, the world's first domestic geosynchronous satellite. Situated some 36,000 kilometres over the equator (above the Galapagos Islands), it maintained the same orbital speed as the planet Earth so that is remained in a fixed position relative to the earth's surface. This pattern was followed quickly by the United States and Japan. In the developing world, Indonesia was the first country to launch a domestic satellite in 1976 (PALAPA); India successfully deployed INSAT 1-B in 1983 and China launched its first domestic communication satellite (CHINASAT) in early 1984. A consortium of Arab countries, Mexico, Argentina, and of course Brazil are in various stages of planning and implementation. Indications are that because of limited orbital slots available, and costs of building and launching satellites, the majority of the third world countries will be associated with either international or regional systems during the 1990s. Developing countries that will operate domestic systems **per se** will be relatively few, and probably less than 10.

Gary Coldevin is Professor of Educational Technology and **Cheryl Amundsen** is a doctoral student. Both are at Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, PQ, H3G 1M8.

COMMUNICATION SATELLITE CONFIGURATIONS

There are basically three types of satellite systems: point-to-point satellite systems, distribution satellite systems, and direct broadcast satellites (UNESCO, 1972). The maximum area of coverage of a point-to-point satellite situated in a geosynchronous orbit at 36,000 kilometres above the equator is one third of the earth's surface. The major function of this type of system is thus to move high density communication signals such as transoceanic telephone and television over large distances. The primary disadvantage of this system is that since the satellites are of relatively low power, the signal they send back to earth is weak. Consequently the receiving dishes must be very large and powerful, tending to make them expensive for individual countries to operate.

Most operating systems are of the distribution type where the land area to be covered by any one satellite is greatly reduced in comparison with the point-to-point system. The signal emitted by the satellite is consequently much stronger and less powerful earth stations are required to receive it. Estimates place the cost of this type of receiver compared to the point-to-point type in the order of 1 to 10. Most satellites of this type operate in the 4/6 GHz mode and are mainly used to relay signals for re-distribution through terrestrial systems. Used in this combination, they become much less expensive than through operating a terrestrial system alone (Polcyn, 1981). ANIK A and D (Canada), INSAT 1-B (India), PALAPA (Indonesia), and SBTS (Brazil) are all examples of distribution satellite systems.

Of more recent origin is the direct broadcast satellite. These are designed to transmit powerful television signals which can be received on small and inexpensive dishes (about 1 metre in diameter). This type of satellite holds the greatest potential for distance education efforts which generally serve large areas of low population density, and utilize receivers. The combination of the one metre receiving dish (which may be collapsed like an umbrella) and battery operated television sets has created truly "transportable" earth stations capable of receiving signals anywhere in the area covered by a direct broadcast satellite. Its use in peripheral, isolated areas for information and educational purposes appears particularly noteworthy. Currently operating in the 12/14 GHz frequency range, examples of this type of satellite include HERMES (Canada and U.S.A.), ANIK B and C (Canada), CHINASAT (China), and ARABSAT (Saudi Arabia). The ATS-6 satellite launched by the United States in 1974 and used for educational experiments in Alaska and India presently slated for use in Brazil's SACI project) was the forerunner to the current generation of direct broadcast satellites.

In summary, the relatively short history of satellite development, particularly development of the direct broadcast satellite, appears to hold substantial promise in extending both formal and non-formal educational opportunity on a worldwide scale. Where, for whom, and how satellites have been used in distance education thus far should provide useful background to those countries and institutions currently planning new applications.

REGIONAL APPLICATIONS

The University of the South Pacific

One of the more imaginative uses of satellites for post-secondary education has been developed by the University of the South Pacific (USP). USP was established in 1967 in Suva, Fiji, the most populous country in the region, to serve as the centre of higher education for the countries and territories of the South Pacific.

The area served includes 11 small island countries (Fiji, Cooks, Gilverts, Tokelau, Solomons, Niue, Tonga, Western Samoa, New Hebrides, Nauru and Tuvalu), with a total population of 1.5 million people spread over 11 million square miles of ocean. Because of the distances and costs involved in student travel it was decided early on that a single campus would not meet the needs of the region. Extension Centres were therefore developed and currently are functioning in nine of the member countries. In addition, an Agricultural Campus was built in Western Samoa. And since 1974, USP has used the ATS-1 satellite to link the main campus in Suva with the Extension Centres (Balderston, 1979).

Distance education courses are offered through the School of Education Services in three main areas: 1) Pre-University courses aimed at enlarging the number of potential university students; this has been expanded to include the first or foundation year of university; 2) Teacher education and in-service training through courses in the Certificate or the Diploma in Education Programs; 3) Individual courses in areas such as administration and accounting. Each centre has a full time local staff of administrators and tutors. The main elements in the program include delivery of course materials to students (textbooks, audio-visual materials, teacher evaluations), availability of an on-site tutor to provide administrative assistance and course support, and contact between students and professors or subject matter experts. Since professors are in short supply in the Pacific Islands and travel costs from island to island prohibitive, the satellite service is used to extend the expertise of available experts through audio-conferences and tutorials to students who meet for classes in the centres. The system also provides for rapid feedback to students on their assignments and advice to tutors from professors, both of which would be very slow through the mail service.

The audio conferencing system uses the satellite to link and share a single audio-channel between the main campus and the extension centres. University professors in Suva conduct lectures and tutorials. The interactive nature of the facility allows both teachers, students and tutors to ask and answer questions, not only between the main campus and a given centre but also between the centres themselves. Anyone in the system can talk to anyone else by using simple-push-to-talk microphones (Casey-Stahmer and Lauffer, 1982). Recent additions have included micro-computers at each site for transmission of hard copy and for building data bases; slow scan video units have also been added in Fiji, Tonga and Western Samoa. A typical satellite weekly schedule includes 14 hours of activity ranging from formal course lectures and tutorials and in-service teacher education, to weekly administrative staff meetings. The satellite network is also used for administration of distance education materials such as verifying the distribution of course materials and transferring enrollment data and grades.

The success of the project is perhaps best illustrated in student enrollments. The pre-1977 data suggests that the average annual enrollment (two semesters combined) in the Extension Centres was about 1000 students. This increased to over 1400 students by late 1977. By 1981, the enrollment in the Extension Centres alone had reached over 4000 student registrations (Hudson, 1981). Current statistics suggest a 1984 enrollment exceeding 9,000 registrations in credit courses alone. The factors that have most contributed to the success of the project are the quality of feedback from the tutors and the rapid turn-around time on tests and assignments. Both of these elements are directly attributable to the creative use of satellite audio-conferencing. Current planning includes a continued emphasis on satellite technology as an integral component in extending university education throughout the South Pacific.

The University of the West Indies

A similar project to that described above for the South Pacific has recently been initiated by the University of the West Indies (UWI). The University's principal mandate is to provide all major fields of educational specialization for the 14 English-speaking Caribbean Islands. The overall population of the area to be serviced is about 4.5 million; less than 1% of the labour force is university educated, hence the strong need to increase the university capacity to extend educational opportunity.

Three main campuses have developed - in Jamaica, Trinidad and Barbados - with university centres maintained in the other 11 territories. Each of the smaller centres is staffed usually by only one university tutor. A limited range of courses and services is offered, augmented occasionally by staff visits from the main campuses. Again, because of the distances to be covered and the costs for both students to attend the main campuses and professors to conduct face-to-face courses in the far flung centres, distance education alternatives were considered. A two month pilot project using the ATS-3 and ATS-6 satellites was initiated in 1978 wherein the university set up video and audio teleconferencing interconnections between Jamaica, Barbados and St. Lucia. This led in turn to a two year feasability study. The subsequent recommendations were to set up a satellite-based audio-conferencing system which would initially connect the three main campuses with St. Lucia and Dominica.

The "University of the West Indies Distance Teaching Experiment" project as it has come to be known, began its operations during the autumn of 1983 with two primary distance teaching applications: 1) First year university bachelor degree courses, and 2) In-service teacher training courses for up-grading classroom skills and subject matter knowledge. The first of these objectives is to enhance a program that began in 1977 which allows students who are not studying at one of the three UWI campuses to take their first year examinations in their home territory. In order to earn a bachelor's degree, all students must pass examinations at the end of the first year and during their final year of a three year program. For the first set of examinations students must choose subjects from six basic areas namely, Introductory Economics, Sociology, Accounting, Politics, Mathematics and Statistics, and History of the Caribbean. The University began its distance teaching operation with four classes; economics, sociology, accounting and history of the Carribean. Lecturers are located in Jamaica, Barbados and Trinidad, dependent upon the discipline offered by a particular campus. Interestingly, the courses are offered not only to students in St. Lucia and Dominica but also for on-campus students in the three University locations.

The second objective is to provide extended opportunities for teachers in the region to up-grade their teaching qualifications through obtaining a Certificate of Education Program diploma. Prior to 1983, this one-year program was offered only on the Jamaica campus. Subject matter specialization included reading, mathematics, science, English, physical education, social studies, creative arts, Spanish, and teaching deaf students. For its initial year of operation, the distance education system offered in-service courses leading to a Certificate in Education for teachers of the Hearing Impaired and Reading (Lalos, 1984). Participants were selected from all five countries with courses offered at convenient times over an eighteen month period. Both of these operations are intended as a type of proving ground to a full scale expansion

Continued on page 20.

Applications of Computer Technology in Distance Education: The Case of the Open Learning Institute

by Ian Mugridge

The Open Learning Institute of British Columbia (OLI) is a publicly funded, distance education institution, delivering programmes and courses throughout the province. It was set up by order-in-council of the provincial government in June, 1978 and given a mandate to deliver 'by distance means' programmes in the three areas of adult basic education, career-technical-vocational education and undergraduate degrees in arts and science. From this broad yet specific mandate, the institute has developed to the point where, beginning with seven courses and 750 students in its first, pilot semester in September, 1979, it now offers over a hundred and fifty courses in its three programmes and will have just over 16,000 course enrollments during the 1984-85 fiscal year. The number of courses continues to increase rapidly as new programmes, particularly in the career-technical-vocational area (CTV), are brought into being; and the enrollments are also increasing, though at a somewhat slower rate than in the past. (For an account of the early years of OLI see Ellis & Mugridge, 1983).

The application of various kinds of technology to distance education is a much discussed problem, made more complex by the fact that distance education is itself a new technology, a new method for developing courseware and delivering it to students who are "at a distance", however that distance is defined (See Bates, 1984). It involves the use of a variety of media-print, audio tapes and radio, video tapes and television, teleconferencing and a number of computer applications - as well as more conventional forms of learning such as personal interaction between teacher and learner and written commentary on written assignments. The mix of such ingredients varies from course to course and even from unit to unit within courses, depending on the nature of the material, the objectives of the course or unit, the type of learner or learning involved and so on. It follows then, that there is no single prescription for using any particular medium of instruction, no single way of putting a variety of media together to assist effective learning.

This consideration applies particularly to OLI, which is a unique educational institution in that it is the only distance education operation which combines within a single organization all levels of pre- and post-secondary education. Within the three programmes mentioned earlier, courses have been or are being developed in areas as diverse as English as a second language and Shakespeare, introductory computing and advanced mathematics and in subjects like history, economics and chemistry and practical courses in nursing, electronics and travel counselling. Clearly, teaching and learning methods, learners' objectives and expectations in such a wide variety of subjects and levels must be expected to cover a very wide spectrum; and the courseware developed to meet these needs must reflect this fact. Course development at OLI has always been based on this assumption.

It has to be admitted that the consideration given to the use of a variety of media and to varying the mix of these media has not always been as extensive as it might have been. The national tendency to stay with familiar techniques of demonstrated effectiveness is present in all educational institutions, even in new ones working in new ways. The more practical consideration of cost also restricts, particularly in a period of uncommon restraint, the use of some of the more elaborate and expensive media.

Nevertheless, the institute has made and will increasingly make contributions to the use of a variety of media. Experiments are being conducted with the use of live interactive television though this is still being undertaken on a very limited basis. (In this area, major attention should be given to the psychology courses offered in this mode by North Island College in B.C., courses which probably equal or excel any use of live interactive television to this point in Canada.) Audio tapes are being used increasingly and with growing effectiveness in areas as diverse as language teaching (including the teaching of English as a second language) and a senior university level Shakespeare course where audio tapes are being used to demonstrate the effectiveness of a number of interpretations of the same passage. Television is being used to demonstrate activities as various as experiments in high school biology and methods of repairing automobiles in an automotive mechanics course. Such experiments are being combined with continued use of print materials which still form the basis for most instruction at OLI. It is anticipated, however, that developments in the next few years will affect this balance in major ways. Nowhere is this potential greater than in areas where computers can be used as an aid to instruction.

Before turning to this matter, I will deal with computer applications in the management of distance education and in the development of distance education materials. Both of these are areas of great importance and ones in which considerable advances have been made in recent years. There is no sign that the speed and magnitude of such advances will diminish in the foreseeable future.

In the area of management of distance education, OLI has developed a unique package known as the Distance Education and Training Resource Management System (DETREMS) which manages all aspects of student admission and records, tutor payroll, assignment grading and exam scheduling, transcript preparation and formal communications to students, student accounting and management data requirements. An enhancement to this system which is almost complete is the Course Management Inventory System (CMI) which will be fully integrated with DETREMS and will thus automatically instruct the warehouse to ship course materials to students registering, adjust inventory figures and flag courses in which stock is low. This system, which runs at OLI on a VAX 11/750 has attracted a great deal of interest not only in Canada but also in other parts of the world (See Pates, 1984); and it has the potential for significant further advances, for plans are already being made to upgrade and increase the flexibility of the existing system by adding a student evaluation and management system, to build links to an integrated courseware authoring, production and distribution system and to a courseware development management system.

The second area in which significant advances have recently been made is that of the design and development of course materials. At the conference of the International Council on Distance Education in 1982, one of the papers spoke eloquently of the power of text processing as a tool for authors and editors (Cooper & Thompson, 1982). Such systems have been in use at OLI for some time; but an even more important development occurred in 1983 and 1984 with the development of the institute's first two university-level chemistry courses. In this case, the course writer, course consultant and course designers were provided, in their separate work places, with microcomputers, communications software and telephone modems. The use of these systems and links significantly enhanced the development process in terms of effectiveness, efficiency and time involved (Timmers, 1983).

Another development which was, in part, an offshoot of this process has been the construction of a computerized course formatting system. This was initially subjected to the criticism that such a method would impose unacceptable restrictions on course writers and designers, obliging them to design their material according to the requirements of the format rather than the other way around as should be the case. This has, however, not been the case; and the use of the format has provided instead a great degree of freedom as well as the ability to develop courses which are readily transferable from one institution to another. Evidence has been supplied by the use of the system in a training scheme for faculty members in chemistry and biology from the Universiti Sains Malaysia (USM) in Penang. This project, which is being funded by the Canadian International Development Agency and has just completed its second phase, involves four faculty members a year spending two months at OLI working on courses to be used at USM. The use of a common course format ensures the ability for both institutions readily to use each other's material (Timmers, 1984).

These developments have added significantly to the institute's effectiveness and efficiency in the areas where they operate. As the new systems are being tested and implemented, as their use becomes more effective, plans are also being made for modifications and additions. It is hoped that, within the next three years, a system will emerge to link the existing DETREMS and course development systems with new systems in such a way that OLI will develop an integrated system which will combine the development, production and distribution systems as well as those for student services and support and for management of all these activities. Given appropriate support, this ambitious goal will become a very practical possibility. In addition to this extensive work in the use of computers to manage distance education, OLI has also undertaken a good deal of work in the direct instructional uses of computers and computer-related techniques. The videotex system known as TELIDON, which will, if widely used, make banks of information available to students through home television, has been evaluated and experiments begun with its use in a computer-aided learning mode (Love, 1982). The results of such experiments are being added to the data supplied to those being carried on at other institutions and will influence the direction of future work in this area (For a discussion and summary of such work see Kaufman, 1984).

It remains to outline briefly the activities which are being undertaken in direct instructional areas. Little instruction in computing has been offered so far. OLI's first experiment in this area was the development of a basic computing course using TRS 80's which were delivered to students' homes. This non-credit course was extremely successful and was discontinued only when the equipment and material became obsolete (Kaufman & Meakin, 1982). Apart from this, however, the institute has not solved the problem of delivering practical computing instruction at a distance to those students who require more advanced applications. It is likely that widespread implementation of hands-on computing instruction will have to await the greater availability of microcomputers and other conditions necessary for distant students to enter this area in large numbers.

In the area of computer-aided learning, work is in progress on two major projects which will demonstrate the potential of CAL for distant learners. The first of these is a package for instruction at the secondary school level on food and nutrition. The second is a project being undertaken in conjunction with the Certified General Accountants of Canada and McGraw-Hill Ryerson of Toronto to develop a CAL package in introductory accounting. This will be available in the summer of 1985 and will considerably extend the use of CAL in this type of instruction. Both of these projects should provide extensive data on which to build future work in this area. With these developments and with the addition of instruction in management information systems and other computer-related areas to existing degree programmes, there is little doubt that the institute's involvement in expanding the use of computers in all aspects of distance education will continue and grow.

Ian Mugridge is Dean of Academic Affairs for the Open Learning Institute, 7671 Alderbridge Way, Richmond, B.C. V6X 1Z9.

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Providing for Lifelong Affiliation with Distance Education Institutions and the Feasibility of Doing So with Personal Computer Communications

by Gary M. Boyd

Introduction

In our rapidly changing and deeply compartmentalised world people have a growing need for opportunities to reenact personal affiliative performances; to reiterate meaning and to reaffirm identity. People also need on-going access to 'state-of-the-art' information in all the professions. Universities with deep historical roots and leading edge research can and do meet these needs for certain minorities. Distance education institutions are doing a good job at providing more open access to basic courses of studies; perhaps they can also adapt to meet these life-long affiliation and knowledge needs.

Innovation

Innovations occur when there is the happy conjunction of four factors: (a) pressing problems, (b) solution oriented people, (c) choice opportunities (e.g. staff replacements, additional resource sources), and (d) new solutions looking for problems to which they apply. March and Olsen (1976) argue that it is the conjunction of these factors rather than "rational planning" which brings about actual innovation.

Problems

For individuals in our society the perennial problems of meaning, purpose and opportunity are acute. The problem of meaning is also the central concern of ethnic and religious political-action groups. The survival and growth of organizations which provide both security and opportunity is a central concern of their members. Distance education institutions are organisations serving their employees and their students (Indeed many people who work for such institutions also study through them).

The institution's problems

Most open learning or distance education Organizations are publicly funded. They need to demonstrate the legitimacy of such funding by attracting and retaining large numbers of students. What happens is that particular areas of study (e.g., computers, small-business management) attract many students who take a few courses and then disappear. They may return later to complete a degree or to study some other newly fashionable subjects. But they may not. Except where enrollment is artificially restricted for political reasons as with the UK Open University, large fluctuations in enrollment make distance education planning difficult. Because the political legitimacy of these organisations depends on the size and kind of clientele they are seen to serve, large variations in enrollment numbers and kinds make it difficult to maintain successful clams on public funds over the comparatively long time periods needed for producing and delivering packaged courses. The appropriate scale of permanent institutional staffing is also made difficult to determine by large changes in enrolment (Rekkedal, 1982).

The clients' problems

The nominal reason for most people's participation in distance education is to improve their work status. Two other reasons: to gain knowledge for its own sake, or for social contacts, each account for about ten percent of the students (Holmberg 1982). Distance learning in particular is chosen over other means mainly because it enables students to budget their time more efficiently and more pleasantly. There is also a particular appeal for those who like solitary study.

It is very difficult to determine whether a deeper search for the meaningful life underlies the stated objective of career advancement. In European and North American society most men and women answer the question "Who are you? by naming their job. The search for identity and meaning is expressed as a search for a better job, or perhaps still even as an attempt to try and find some "true" vocation. Certainly the fact that most distance education students say that they pursue their studies in order to improve their work opportunities, does not preclude the deeper quest for affiliative meanings which add up to a "self-esteemable" identity being operative in distance studies. Coltman (1983) notes that impending loss of study often promotes identity crises.

The main source of motivation for *continuing* with distance study, aside from self-confidence, is according to Bowlay's work in Australia (Bowlay 1979), "perceived support from significant others". Some of the "significant others" are tutors and whichever other distance education students have become friends through local study centres or summer schools. Means for maintaining contact with these people should therefore increase the probability of continued course taking. Professionals possessing high status in the work field of the student are also "significant others". They will encourage the worker to take courses or use other facilities of the institution if they are affiliated with it themselves and if it is seen to be doing a good job.

These higher status practising professionals also need continuing affiliation with organisations which give them critical evaluations of the latest research results and practises in their fields. To some degree this is provided by professional assocations. It is also provided by many universities both informally through contacts between professors and former students, and formally through special extension services. Distance education institutions are now at the place where further undertakings along these lines appear to be indicated for the reasons given above.

People and Opportunities

March and Olsen's second and third factors are of necessity peculiar to particular institutions, places and political situations.

Fortunately most distance education organisations are fairly young so that many of the staff have flexible attitudes toward change. Unfortunately some institutions are already heavily bureaucratised, and committed to rigid job-description contracts with staff unions. Even if contracts allow for the closing of certain operations on ground of financial exigency, often the severance benefits involved mean that almost no resources can be re-allocated to newer more vital functions.

Inadequate solutions

If some means were to be found which would encourage frequent continuing contact between students and the distance education institution even when no courses per-se are being taken, the problem would be at least half solved. Of course, alumni associations do play an important role in maintaining contact between graduates and universities. But many distance education students don't graduate, they just suspend studies. Television and radio broadcast messages do attract and sustain interest for many students, and newspaper display advertising is also somewhat effective; but not effective enough.

The telephone is, in North America at least at present, the most convenient means for communications between students and institutions. The telephone has some major disadvantages. It is preemptory in its summons, and therefore calls forth various forms of telephone protection, such as non-answering machines, which reduce its usefulness (we have all been caught in little inadvertent games of telephone tag).

The mails are slow and expensive. New computerized letter generating and addressing programs do facilitate correspondence, but not enough.

The broadcast media (TV/Radio) are cheap, and effective attention attractors, but they are one-way channels and altogether lack privacy. Newspaper columns and display advertisements are also cheap, but suffer from the same limitations as broadcasting. All of these "mass" media need to be complemented with private fast personal return and interaction channels. Teletex may provide some capability of the kind needed if it ever becomes widely enough available. At present it is not much more than a curiosity. NAPLPS (Telidon) videotex is slightly more widely available, but is still preposterously expensive (Only a requirement that NAPLPS decoder/encoder chips be built into every TV set in the way that UHF tuners are now required to be built in, will open up the videotex world (Godfrey and Chang, 1981).

Personal visits, week-end workshops, and summer-schools do provide excellent opportunites for direct personal exchanges among students and faculty. Alumni organisations also hold such gatherings and in some cases these overlap with those of current students. The distinction between current students and alumni is often difficult to make when distance learning institutions are involved because many students drift off without graduating, but still feel associated with the organisation. The disadvantages of face-to-face meetings is that they are costly in time and in money both for the institution and for the students. Although indispensible to the development of deep ties, these meetings cannot be held very frequently.

The only sort of meeting which can be held frequently is that of the local study group. These often are simply several students who meet regularly in each other's homes to listen to, watch and discuss broadcasts. Groups which meet formally in local libraries, courthouses or schools and make use of telephone conferencing systems such as those developed by the University of Wisconsin Extension Department are quite effective in developing bonds among students and between them and the institution (Thompson, 1984).

A new and possibly adequate solution

Personal computers have become very inexpensive and widespread. Also packet-switched data communications are now available throughout the world at very low rates. Telematic networking, therefore, presents itself as an option for maintaining life-long involvement with distance education institutions (Boyd, 1979).

For example, in Canada it is now possible to purchase a personal computer with a modem for less than four hundred dollars (This is about three times what the textbooks for a university course cost). Such a personal computer can access the Trans-Canada Telephone System 3000 DATAPAC service. The current rate between Montreal and Vancouver is $1.45 per Kilopac. Public dial access adds about one dollar per Kilopac. However a Kilopac is a very large amount of data. What this amounts to is that you can send a thousand words of text from Montreal to Vancouver instantly for about five cents. Similar rates apply throughout North America.

Another advantage of computer correspondence and computer conferencing is that it can be asynchronous. People participate at whatever odd moments they choose. That this medium is acceptable, and even highly appealing, to large numbers of people is attested to by the success of the Special Interest Groups, and 'CB' channels on the CompuServe and Source computer utilities (Bowen and Peyton, 1984). What we have here is a cheap fast pleasant new way of communicating which seems very well suited to persons' needs for continuing educational affiliation. Since telematics are cheap flexible and easily configured to handle very large numbers of communications this would appear to be the basis for an adequate solution from the institutional standpoint as well as that of the students.

Telematic communications are self-auditing. A complete record of how many people are participating and where they are located is readily available. It can be used by the distance education organisation as a basis for subsidization requests. If the students pay for the messages from them to the institution then the amount of those payments is also an indication of the legitimacy of the enterprise, in the sense that token payments for public transit, or for medicare serve this end.

Conclusion

There is currently a realisation that student support services are of equal importance to the packaged and broadcast learning materials in determining the success of distance education schemes (Stewart, 1983). Counselling, and the provision of arrangements for continuing interactions between students and faculty, and among students are vital parts of the support service. At present they are expensive and difficult to provide. A prototype experiment in carrying on these functions with the aid of personal-computer communications should be undertaken now.

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Telidon: Its Potential and Problems for Traditional and Distance Education

by G.A.B. Moore

Introduction

Computers once meant "number processing machines" and if we were not involved in teaching a subject with some mathematics we could conveniently leave the computer to the math and physics departments. The notion of computers as "logic machines" moved us a bit closer to considering their place more widely in the curriculum but for many of us the computer was a foreign object and too confusing with which to become involved. In the past couple of years the microcomputer has emerged, not only as a number processor but also as a processor of words and images which places it at the heart of educational work. One development of potential value to both traditional and distance education is the merging of Telidon technology with the microcomputer.

Telidon in 1985 is quite a different creature from Telidon of 1981 when the Canadian Department of Communication launched its $27.5 million program to support Telidon's development. While the basic Telidon approach remains, that of a system of computer codes to produce colour graphic images, the early Telidon standard has given way to the North American Presentation Level Protocol Syntax (NAPLPS). Low cost adaptors for the home TV set supposed to be here by 1983 are still not here. There are adaptors or decoders but they are not low cost. What has happened is that several microcomputers can now be outfitted with a software decoder from $99 to $199, depending on the micro, which give the computer the capability to function like a terminal. Predictions made by the University of Guelph in 1983 that Telidon would emerge as an enhanced capability of the microcomputer rather than as an "add on" to the TV set seem more likely of fulfilment than the reverse.

This paper will report on work at the University of Guelph beginning in 1982 with Telidon as an agricultural extension medium as well as an instructional medium. From this experience several conclusions are drawn about the potential of videotex, to use the more generic term for Telidon, for traditional and distance education.

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I. From Farms to Classrooms

1982 the University of Guelph, along with several other educational institutions, was awarded a Telidon equipment grant from the Department of Communication under its Industrial Investment Stimulation Program (IISP). The proposal listed three areas of study and application. The first was an agricultural information service. The second was an on-campus electronic information service for students and staff and the third was the use of Telidon in teaching.

GRASSROOTS Field Trial

The first major project grew out of an invitation from Infomart, Winnipeg, to conduct a joint six month field trial in introducing its agricultural information service GRASSROOTS into Ontario. This project had three specific objectives:

1) to create a commercial class "Telidon Page Creation Centre" operating at industry standard.
2) to create agricultural content of relevance to Ontario agriculture to be available to Ontario farmers from the GRASSROOTS database in Winnipeg.
3) to test this Telidon service with as many representative Ontario farmers as facilities would permit.

The agreement between the University of Guelph and Infomart was signed December 23, 1982 and preparatory work began immediately for the field trail which operated from April to October of 1983. Guelph appointed a three person project management team and assigned three regular media production staff to the "Page Creation Centre". This was augmented by three temporary staff. In addition electronic staff were given fractional assignments on an "as required" basis. The management team comprised the project director, The Coordinator of Agriculture Extension, (both of whom had existing full-time responsibilites) and the Manager of the "Page Creation Centre".

Infomart provided training to the Page Creation staff on site at Guelph enabling staff to become competent with the two Norpak Information Provider Terminals. Two years later these staff report that the most valuable activity for them was the one week training at the beginning of the field trial which enabled them to achieve the required standard. These staff members were all seasoned in their fields and had assignments as follows:

Telidon Responsibility	Previous experience
Manager, Page Creation Centre	Media Producer
Page Designers (3)	Graphic artist/exhibit designer
Database Manager	Research Assistant
Writer	Writer

An initial target of 300 pages of Ontario content for the field trial was more than doubled with 688 pages being created. This included a market summary of Ontario farm prices supplied by the Ontario Ministry of Food and Agriculture and updated daily. A Calendar of Events for the Ontario agricultural community listed events by region, by date and by subject. A user was able to scan the information available by using any one of the three search modes. Agricultural extension courses in the Independent Study program were included in the database with an on-line course registering system available. Several interactive farm management programs were produced including a Crop Budgeting Aid and a demonstration Sire Selector program. Research reports and summaries of Animal Health Care seminars were included from the Ontario Veterinary College as well as an on-line ordering system for audio cassettes of the Health Care sessions.

Infomart undertook to expand its 24 hour weather forecasts to include Central and Western Ontario for the regions of Windsor, London, Owen Sound and Toronto. In addition several agribusiness companies contributed product information of interest to the Ontario farm community and trading information from the Toronto Stock Exchange was made available.

The second project objective was to make the GRASSROOTS database available to Ontario farmers. To achieve this and to enable the Guelph Page Creation Centre to load the Ontario content into the Winnipeg computer, a dedicated 4,800 bps dataroute line was leased from Bell Canada. A sixteen port concentrator was installed at Guelph which provided two program ports on the Winnipeg computer for the Page Creation units and 14 simultaneous user access ports. These were configured to provide:

- 8 Guelph local phone dial-up access ports
- 3 University of Guelph campus access ports
- 3 In-watts access ports
- 1 Program port, Westex News, University of Western Ontario
- 1 Program port, Page Creation, University of Guelph.

It was found that Bell's Datapac was not available outside of the larger urban centres which rendered it inaccessible to the large rural areas. Access was possible to Datapac but incurred a 35 to 70 cents per minute long distance charge. A further complication was that Telidon terminals were equipped with split speed 1200/150 bps modems which were unsuitable on Bell's Datapac service although they could be made to work over the voice network. Modems at 1200 bps and compatible with Datapac cost approximately $1,000 at the time of the trial which rendered this option unattractive.

The third objective was to test the service on selected Ontario farms. The telecommunications problems have been identified and these placed serious financial constraints on the project's ability to encompass a geographically dispersed farm audience which would be representative of Ontario agriculture. Through the participation of several commercial agri-business firms[1] funds were made available to procure additional terminals and to add a second trail area. Chatham in the heart of Southwestern Ontario's cash crop region was selected as the second trial site and a four-port "mini-mux" line extension was installed reducing Guelph's local dial-ups to four.

Terminals were installed on forty farms, thirty in the Guelph area in two waves of fifteen each and ten around Chatham. Farmers were selected by a committee of Guelph faculty and were offered the service on a no-charge basis for two months in return for agreeing to complete a detailed written questionnaire prior to terminal installation and a second questionnaire at the end of the period.[2] In addition online responses were solicited during the trial. The offer of service included an integrated Telidon terminal (decoder, monitor and modem), free telecommunication over the installed network, training in the use of the service, and maintenance on the equipment.

With the system installed, the project team undertook to recruit several members of faculty to explore instructional applications of the medium for on-campus instruction and for possible distance education application. Four courses were selected with high visual content or the need for frequent and immediate feedback to students. These were a first year introductory course in Zoology, a first year Neuroanatomy course in Veterinary Medicine, a third year couse in Psychology and a fourth year course in Ornithology. A course in Extension Education used the Telidon systems test and feedback capacity for a computer literacy quiz related to TV Ontario's "Bits and Bytes" series.

GRASSROOTS Findings

There was general agreement among participants that this farm information service was easy to use and provided valuable information on weather and commodity markets. It was also found that expectations of detailed information on such topics as herbicides, feed ration balancing formulas and local market quotations were not as well met.

The delemma of Telidon or videotex as a single service entity, as it was originally conceived, or as an extension of the microcomputer, emerged early in the trial. When the trial ended participants were invited to continue the service by acquiring a terminal through lease or purchase and paying ten cents per minute telecommunications charge to use the network. Eight trial participants elected to lease a terminal and no one bought since they indicated a desire for an integrated service with a microcomputer. During the trial a software decoder from Microstar, in Ottawa, became available for the IBM PC. Several participants already owned Apple II plus micros; however, no completely satisfactory decoder for the Apple was available and their owners elected to keep their options open by leasing a terminal.

The participants in the trial covered a wide age spectrum from young to well established farm operators. The majority reported gross annual sales of agricultural products in excess of $200,000. This suggests that an economic threshold may well exist below which this videotex service is too costly to be justified.

While the majority of respondents indicated they were seriously considering acquiring a microcomputer they were still looking. They were inclined to see the GRASSROOTS type of service as one of the external options on the microcomputer to complement its local record keeping and financial analysis functions.

At the end of the trial in October 1983 and through all 1984 the absence of a reasonable rural telecommunication service for Ontario presented a major block in further acceptance of this or any other Telidon service. While access costs in Manitoba and Saskatchewan were reasonable at five and eight cents per minute respectively, Datapac in Ontario at 15 cents per minute was not available outside larger cities. The cost of a long distance call of 35 to 70 cents to reach a Datapac port or the University of Guelph network was seen by our participants as prohibitive. The promise for 1985 is that an INET trial in zone 519 of Southwestern Ontario will be available at 25 cents per minute.

II. The Instructional Applications and findings

Telidon's tree structure and menu approach makes it extremely easy for first time users. However, this structure was not found to be suitable for instructional purposes. Special action task software was written by Infomart to University of Guelph specifications. This enabled several interactive approaches to be taken in designing instructional sequences. The major emphasis in this first instructional trial was for testing and feedback modules to support PS1 or other mastery type courses.

Ten to twenty minute test modules were created in the Zoology, Ornithology, Neuroanatomy and Psychology courses. These were optional for students and were presented as opportunities for them to test themselves against the course material. The modules were tests of learning rather than as tests for mark accumulation. They did have the features of immediate feedback to the student, suggestions for study following an incorrect response, randomization of test items allowing multiple attempts until the achievement criteria was reached and feedback to the instructor in the form of printed reports of student performance. These modules were created by the Guelph Page Creation Centre in close consultation with the participating members of faculty. The materials were then uploaded from Guelph into Infomart's Winnipeg computer in similar manner to the provison of the agricultural content for GRASSROOTS. While the latter task was performed directly from Guelph, the interactive nature of the instructional materials required software engineering intervention

Continued on page 23.

[1] These companies were Chipman Inc., ciba-Geigy, Cyanamid, Pioneer Hybrid and Shurgain.

[2] Deloitte, Haskins and Sells, Management Consultants contributed the Market Research analysis.

Copyright: Now or Never

by Ian Hose

This fall, a White Paper entitled "From Gutenberg to Telidon", was published jointly by the Department of Consumer and Corporate Affairs and the Department of Communications. Copies may be obtained by writing to the Ministry of Supply and Services in Ottawa and requesting publication #R.G.43-21/1984E.

In the document, the government stated its committment to assure a climate in which creativity can flourish and its determination to help Canadians benefit from technological change. These are concerns shared by all, but by educators in particular. Comments are requested, despite the fact that Cabinet approval has already been given in some areas to the draft legislation. Five areas where decisions have **not** yet been made are discussed in detail and comments on these are especially welcomed. These areas are:

- cable and satellite retransmissions of broadcasts
- ownership of copyright in employment situations
- time which ephemeral recordings may be retained
- special treatment for jukebox performances
- exemption for certain performances in public establishments

Since we have a new government in office and new ministers in both departments, it is important that changes be suggested so that the legislation will better reflect the views of the educational community. AMTEC members should be making Members of Parliament aware of their concerns.

Unlike the United States government, ours, in Ottawa, does not propose "... to substantially alter the existing law regarding educational use of copyright material. Fair use considerations are applicable to the educational use of copyright material as they are to any other use." Under the current law the term "fair dealing" permits private study, research, criticism, review, or newspaper summary. By introducing and defining fair use "as a use that does not conflict with the normal exploitation of the work or subject matter and does not unreasonably prejudice the legitimate interests of the copyright owner", educators will face an almost impossible task trying to obey the law.

A suggested solution to this problem is the formation of copyright societies where copyright owners could assign their rights for the purpose of exploitation and enforcement. Currently musical performing rights societies collect on behalf of the copyright holders. In its submission reacting to the Keyes and Brunet Proposals, AMTEC endorsed the formation of such a collective with appropriate controls ensuring that teachers have quick and easy access to as wide a range of materials as possible.

Computer programmes will be included in the new Act and will be protected for five years, rather than the general term of the life of the author plus 50 years. Under the present Act, computer programmes in human-readable form are protected like any other scientific form, but difficulties arise with machine-readable programmes. An outline of the important aspects of the scheme of protection is listed. No provision is made for duplication of software for archival purposes. Perhaps the onus is on the educational institution purchasing the software to arrange for backup copies to be provided with the original.

Despite the arguments from producers, the white paper recommends that a general exemption be made available for the benefit of the handicapped. At the moment educational users must obtain permission to adapt materials for students with special needs.

The majority of AMTEC members are employed in educational institutions. Thus changes in the section dealing with first ownership in works created by employees in the course of employment are of particular significance. Should copyright remain with the author and be licensed to the employer, or should the employer have the prime right and the employee some say over assignment of license to a third party?

Concern has been expressed when an educational body rents or buys a video tape for use in a school setting. The Canadian Motion Picture Distributors' Association takes the position that video cassettes are sold or rented for home use only, and that face-to face classroom use amounts to public performance. Without the necessary license this is illegal. The new Act will provide a renting right to copyright holders of films, videotapes and sound recordings. How will this section affect you?

"Public performance in an educational context refers to both live performances of copyright works and performance via technological means such as recordings or broadcasts." In Ontario "no trespassing" signs have been posted on school entrances. The idea that the buildings are open to the public is incorrect. When instructional materials are viewed in a classroom, no charge is made and the materials are not subject to the provincial censor board. This section on public performance requires clarification in the new Act.

If you have any comments on the proposed changes, send them to The Clerk, Parliamentary Committee on Communications and Culture, Room 516, 180 Wellington Street, Ottawa, Ontario. K1A 0A6. Your own M.P. should receive a copy along with copies to the Honourable Marcel Masse, Department of Communications, and the Honourable Michel Cote, Department of Consumer and Corporate Affairs. Please send a copy of you correspondence to Chairman, AMTEC Copyright Committee, 14 Willowbank Blvd. Toronto, Ontario M4R 1B6. Your comments will assist in the preparation of an AMTEC brief on copyright. □

> "It is not proposed to substantially alter the existing law regarding educational use of copyright material. Fair use considerations are applicable to the educational use of copyright material as they are to any other use."
>
> **From Gutenberg to Telidon,** p. 41.

Ian Hose is AV Co-ordinator, East York, Board on Education, Toronto.

CONSORTEL Languages Project to Complete a Catalogue of Telidon Educational Applications

Telidon, the Canadian videotex system, has passed its market trials and field tests with flying colours. It is now achieving maturity as an electronic medium for the creation, storage and interactive use of text and graphics. It has been standardized (as NAPLPS, the North American Presentation Level Protocol Syntax), dozens of companies have come into being to generate and market support hardware and software, and agencies throughout Canada are exploring innovative applications for it.

One promising realm of Telidon implementation lies in the field of education. The graphics protocol lends itself readily to computer-assisted instruction and interactive learning packages, to testing modules, distance education, and information retrieval. Teachers and students can use standard telecommunications systems to access remote educational databases. Increasingly, educational material using the Telidon protocol is also mounted on local multi-user systems, or on stand-alone microcomputer systems. The adaptation of popular, inexpensive microcomputers to Telidon through software and hardware peripherals makes Telidon/NAPLPS a particularly versatile and affordable educational tool. Telidon is easy to use, and the existence of a standard format means that courseware can be easily exchanged between institutions.

In the interests of promoting the widespread development and use of educational material based on Telidon, CONSORTEL (the Consortium for the Exchange of Telidon and Telematics Materials) is introducing a quarterly catalogue.

CONSORTEL is a consortium of some fifty colleges, universities, public libraries and other interested non-profit organizations, under the overall direction of the Inter-Provincial Association for Telidon and Telematics (IPATT). The consortium is establishing a prototype electronic network which should be operating by 1985. Beginning this fall, the **CONSORTEL Catalogue** will help to inform educators at all grade levels across Canada about Telidon products for education. The catalogue will list and describe courseware and lessonware, Telidon educational projects, software and hardware products that permit the implementation of educational material based on Telidon, and related papers and reports. The catalogue will serve as a key forum for the exchange of information, experience, and references in this dynamic field, and will represent the first national consolidation of information about the educational uses of Telidon technology.

The accuracy and completeness of the **CONSORTEL Catalogue** depend upon material submitted by contributing agencies. If you are working with Telidon for instructional purposes, CONSORTEL would like to hear from you. Whether you are designing courseware, generating other pages of educational content, participating in a project or trial, or drafting support material, descriptions of your work will be of great interest to the consortium. For further information on contributing to the **CONSORTEL Catalogue**, please don't delay in contacting:

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Conferences

Edinburgh, Scotland, June 11, 1984 -- Many universities are graduating students who can neither participate in, nor understand the technological revolution that is shaping our future, said Roy T. Cottier, senior vice-president, corporate relations, Northern Telecom Limited, to an audience at the University of Edinburgh today.

Mr. Cottier was speaking at a ceremony to announce the first simultaneous joint seminar between two universities, in Canada and the United Kingdom. The seminar, which includes the world's first video conference satellite link between two major universities, will take place on October 26-27, between the University of Edinburgh, Scotland, and Carleton University, in Ottawa, Ontario.

The seminar is the first in a series of five annual programs entitled Technology, Innovation, and Social Change. They are being co-sponsored by the Centre of Canadian Studies at the University of Edinburgh, and the Institute of Canadian Studies at Carleton University in Ottawa.

Northern Telecom Limited is providing $60,000 to cover general conference costs, the satellite link, and the purchase of equipment for the initial seminar.

In his remarks, Mr. Cottier reminded his audience of the "two cultures," first described by C.P. Snow in 1959. Lord Snow used that term to describe the cultural and intellectual barriers that had increasingly divided students of science from those in the humanities.

Mr. Cottier noted that, 25 years later, this condition has become even more acute. At a time when the need for technological awareness has increased, the educational system continues to deny students in the humanities a complete, "balanced" education.

"The undergraduate curriculum, as it generally stands today, perpetuates the gap in knowledge between the humanities and the sciences," Mr. Cottier said. While there are, indeed, efforts to change this, through a variety of local programs, these rarely go beyond installing a few microcomputers in the classroom.

Much more is needed than merely providing students with a basic level of microcomputer literacy, Mr. Cottier warned. "Students also need to be taught the essential principles of quantitative and analytic though that are fundamental to science and engineering; principles which, when you think about it, are also basic to a good liberal arts education."

Universities must not only accommodate necessary changes in curriculum, said Mr. Cottier, but they must also participate directly, as institutions, in an increasingly technological environment.

"Part of that participation must include studying, teaching, and applying the new information technology," he argued.

"The sad fact is that universities, in general are **not** in the vanguard of the information technology revolution. But they should be, for information is their lifeblood."

The series of Edinburgh-Carleton seminars on the social impacts of technology and innovation can do much to highlight this need, Mr. Cottier said. The seminars will demonstrate the academic application and use of the new information technologies, and will be "a landmark in Canadian Studies and one of the most innovative university programs directed towards one of society's most compelling problems and opportunities."

Northern Telecom is the second largest designer and manufacturer of telecommunications equipment in North America and sixth in the world. It is the world's largest supplier of fully digital telecommunications systems, and is a significant supplier of integrated office systems. Revenues in 1983 exceeded $3.3 billion. It employs more than 40,000 people throughout the world and has research and development facilities, and 46 manufacturing plants in Canada, the U.S., United Kingdom, Republic of Ireland, Malaysia, and Brazil. Its common shares are listed on the Montreal; New York; Toronto; Vancouver; and London, U.K. stock exchanges.

AECT Publishes Book on Software Copyright

As the number of computers in schools has increased, quality in the production of instructional computer software has become a major issue. How that quality can be improved is the subject of much debate, as is the issue of software piracy, which seriously threatens the software market.

> Software developers and producers themselves readily admit that there is lamentable room for improvement in the quality of instructional programs now available for classroom use. Helm

Last year, AECT and the National Institute of Education brought software producers and educators together at the National Conference on Producer-Educator Perspectives on Educational Software. The candid discussions between these two factions brought to light all viewpoints essential for a thorough and scholarly treatment of the subjects of quality and copyright. It was decided that a book on this important subject should follow.

Author Virginia Helm is associate professor of educational administration at Western Illinois University where she teaches school law. Her doctorate in administration was completed at the University of Iowa, where she became interested in the use of computers in the classroom. The University of Iowa is noted as a leading university in applying computers to teaching and learning.

> A small but growing body of research on the effectiveness of computer-assisted instruction...indicate that when compared to traditional classroom instruction, computers improve both the level of achievement and the rate of learning for many students. Helm

In her book, Helm defines the problem of instructional software quality, examines the accompanying problem of copyright violation, carefully explains the law, tells you how to use software in the schools legally, and how to control piracy.

Valuable appendices follow. A definitive paper presented at the AECT/NIE conference by prominent Washington copyright attorney Daniel T. Brooks, entitled "Fair Use of Educational Software," is included in its entirety.

So-called "fair use" is an aged, judicially developed defense to an action for copyright infringement. Copyright is now **automatic** in **most** computer programs. Brooks

Brooks discusses ownership and transfer of copyrights and exclusive rights to computer software and describes the amount and substantiality of portions of software that can be used without infringing on copyright.

The book includes in other appendices a policy statement on network and multiple machine software developed by the International Council for Computers in Education (ICCE), as well as guidelines for off-air recording and a sample of such successful software licensing agreements as that developed by Sarasota, Florida, Board of Education.

Copies of the book are $16 each, $13.50 for AECT members. Order through the AECT Publications Department, 1126 Sixteenth Street, NW, Washington, DC 20036. (1984, hardcover, 6 x 9, 152 pp, ISEN 0-89240-047-1, LC 84-81566)

New Literature

For those interested in making contacts in the United States, the Far West Laboratory for Educational Research and Development recently published a **1984 Directory of Resources for Technology in Education**. State by state, the directory lists relevent government offices, associations and resource organizations (including for example, ComputerTown affiliates and National Diffusion Network members). Other lists cover national organizations, institutions offering degree programs in educational technology, computer camps, funding sources and hardware companies, all thoughout the U.S.A. An added feature is a listing of educational technology periodicals, computerized databases and electronic bulletin boards. Annotations are provided describing many of these information resources. By this point in time, listings of 1984 conferences and summer institutes are not helpful, but one may wish to put in an early order for proposed future editions of the directory to ensure timely information. At present, Canadian and international contacts are not included, but the compilers invite any organizations not listed to send information for future editions. Perhaps Canadian organizations will be considered, as no particular criteria for listing are given. The compilers have admitted however, to a preference for resources in the areas of microcomputing and instructional television, a preference unfortunately not specified in the directory's title. Persons wishing to order a copy of the directory, or to submit information, may write to the Technology Learning Center, Far West Laboratory for Educational Research and Development, 1855 Folsom Street, San Francisco, California 94103.

The topic of microcomputers has dominated the literature of education throughout the past year, and has served as the theme for many published collections of papers. The National Council of Teachers of Mathematics took up this theme in their 1984 Yearbook entitled **Computers in Mathematics Education**. This collection of twenty-seven papers is divided into five main sections: Issues, The Computer as a Teaching Aid, Teaching Mathematics through Programming, Diagnostic Uses of the Computer, and Bibliography. Although all papers focus on the realm of mathematics education, there are certainly several which could provide bases for much wider consideration: "Computers: Challenge and Opportunity" by Elizabeth Glass is essentially an overview of educational computing; William Kraus in "The Computer as a Learning Center" discusses basic elements of design for a computer-oriented learning centre; Richard Shumway's "Young Children, Programming, and Mathematical Thinking" addresses a general need for computer literacy. Most papers include a reading list, however the Yearbook's last offering is "Computers in the Classrooom: a Selected Bibliography". The bibliography describes almost 100 recent articles and books on the computers-in-math theme, each item being coded as to what mathematical topic, computer language or teaching level it addresses. **Computers in Mathematics Education** must be ordered from the NCTM, 1906 Association Drive, Reston, Virginia 22091.

Readers of the **Educational Communication and Technology Journal** may wish to look at a paper presented to the 1984 Association for Education Communication and Technology Annual Convention by Bill Winn of the University of Calgary. The paper entitled **ECTJ and Research in Educational Technology** attempts to put educational technology research into perspective, and to define within that, the role of this influential journal. Winn is able to pinpoint three main areas of study for educational technologists: instructional theory, analysis of practical tasks and decision-making techniques. He expresses some dissatisfaction that the bulk of **ECTJ**'s content represents only the area of instructional

Continued on page 27.

This section provides concise summaries of the recent conferences of interest to Canadian educational technologists. Kay Rogers and Liz Burge summarize the Canadian Association for Distance Education (CADE) conference; Terry Frank writes on the Pacific Instructional Media Association (PIMA) Symposium on Copyright, and Ed Crisp reports on the International Council for Educational Media (ICEM) in Banff.

CADE: The Association

by Kay Rogers

Simultaneously in over twenty communities from Yellowknife to Ottawa and Halifax to Victoria, clusters of individuals synchronized watches and consulted their common agenda. Linked by audio teleconferencing, over 120 educators from the universities, colleges, CEGEPS, course producers and distributors met in June 1983 to found the Canadian Association for Distance Education, CADE. (AMTEC members have been involved from the outset!) Their common purpose was to create a national association which would promote and support the effective delivery of distance education in Canada. In particular, it was agreed that the association should:

- provide for the exchange of information, ideas and professional concerns relevant to distance education;
- provide professional development opportunities for members of the association;
- promote research into distance education theory and practice;
- promote interagency cooperation in the development and use of distance education hardware, software and course delivery systems;
- promote greater public awareness of distance education
- advocate the examination of distance education policies and procedures by federal and provincial government ministries; and
- facilitate the development of inter-institutional transfer of credit.

Since its inception, the association has drafted a constitution, elected a Board of Directors and undertaken a number of activities in the areas of information exchange, research and development and professional development. In keeping with the concept of distance education, committee meetings are usually held by audio teleconferencing, a computer conferencing system is increasingly utilized and the professional development workshops are held by distance education media and methods. A descriptive report of the 1984 workshop is contained in the adjacent article. Plans are underway for two workshops in April 1985, one on student support systems and the other on the computer as a learning medium for distance education. As a young association, CADE is reaching out to colleagues to solicit their involvement, ideas and initiatives. For further information and a membership form, contact:

Leo Deveau
Membership and Finance Chairperson
Canadian Association for Distance Education
c/o Continuing Education
Acadia University
Wolfeville, Nova Scotia BOP 1XO

The article which follows describes in some detail the first CADE workshop.

CADE: The Workshop

by Liz Burge
Distance Education Co-ordinator
Ontario Institute for Studies in Education.

(The following notes provide a biographic approach which traces the beginnings of a new and vibrant educational technology organization in Canada. We include the comments below as potentially important historical material. CJEC wishes CADE well in the future. Where appropriate, it is hoped that AMTEC and CADE will be able to join hands and work together to promote the advancement of educational technology in Canada. Ed.)

PLANNING

The workshop was planned as the first educational event for members of the newly established Canadian Association for Distance Education (CADE). Formed during a June 1983 nation-wide audio-teleconference meeting of educators associated with distance-mode programming, delivery, and learner support systems, CADE has as one of it key objectives the professional development (P.D.) of its members. A P.D. committee was established to organize formal events and to enhance networking for informal activity. In June 1983 several CADE members discussed a proposal for a workshop for instructional designers, and by October 1983 the proposal had been accepted for further planning. A survey instrument later sent to nine P.D. committee members enabled the three workshop planners to develop a small-scale workshop to enable instructional designers experienced in distance education and in audio-teleconferencing to discuss current issues in the design of learning processes and the production of actual course materials. The planners were Mark Waldron, University of Guelph, Liz Burge, Ontario Institute for Studies in Education, and Norman McKinnon, Correspondence Education, Ministry of Education, Ontario.

Three factors influenced the choice of the workshop target audience. First, the perceived need for instructional designers to strengthen their network; second, the danger of staging a workshop so general in scope and discussion level that it would satisfy no one; and third, the expected series of future workshops that would allow other distance educators to meet at later dates. The issues planned to be discussed for this first workshop would, therefore, include differences in cognitive and learning styles, adult learning principles, assessement of learning, integration of mixed media, and text structure and layout. The workshop planners were also interested in finding out the perceived usefulness of the five components planned for the workshop (print materials, videotape, local group work, large group reporting of results, and critical analysis of course materials), and participant reactions to the workshop in terms of its use of audio technology and the perceived amount of learning undertaken.

By early March 1984, the workshop proposal had been developed into a three part activity: pre-workshop background reading, a two day workshop, and post-workshop proceedings. The first broad objective of the workshop was the generation of criteria for evaluating learning processes and materials design. A second objective was the application, on the second day, of those criteria to be structured criticism of colleagues' actual course materials.

The first half of the first day was to consist of personal introductions using audio-teleconferencing, more detailed introductions and discussion role modelling using pre-recorded videotape segments, and small group discussions at each site. Print-based instructions for this small group work were planned to give local choices of pre-determined tasks. In the second half of the day, participants would be required to reconnect to the Darome bridge in Toronto and report their task results to the plenary session.

On the second day, the whole five-hour-period was to be similarly divided between videotape introductions, local small-group work, and plenary session. These activites were to be supported with detailed advance publicity materials, extensive agendas for the two days, the use of well-briefed local site coordinators, and a contingency plan for local site groups should technical problems arise. The five sites were to be linked by the Darome bridge in Toronto.

In early March, the workshop structure and support systems began to be implemented. The publicity material (details of intended audience, workshop objectives and structure) was mailed to all members of CADE. Six audio-teleconference sites and coordinators were chosen, and the Darome bridge booked. Local site coordinators began their liaison activity.

The three planners continued development of the workshop resources. With six sites expected, it was felt that the overall activity pattern of large and small group work, "on air" and "off air" times, generation and application of design criteria, and debate on issues would allow high levels of interaction. Two 30-40 minute periods of reporting discussion results, separated by a 20-minute refresher pause, were planned for the second half of each day. Four colleagues in other provinces were asked to provide short video segments to be used as role models of small-group work.

By mid-April, however, the planners faced a large increase in the expected number of participants and a three-fold increase in the number of sites requested. The planners decided to run the workshop as planned: time for reorganization was too short; the large numbers of instructors and faculty would be able to choose a small-group task according to their interests, and would get some background information in certain segments of the videotapes; and the interactive nature of audio-teleconferencing would allow program changes during the workshop if needed. Finaly, it was felt that no politically acceptable criteria could be developed to exclude either participants or new sites.

IMPLEMENTATION

On April 25, 1984, 18 local site coordinators, managing a stated total of 250 participants, began dialling at pre-set times to the bridge operator. (The listed total is 243.) The presence of so many sites across five and a half time zones and the great distances between them (for example, the 13,500 km triangle between Vancouver, B.C., Frobisher Bay, NWT, and St. John's, Nfld.) contributed to a sense of awe among participants and planners alike. The ease and rapidity with which such a geographically dispersed group assembled were also impressive. It took approximately 10 minutes to assemble the conference.

The agenda was implemented as planned.

The agenda for April 26 was also implemented as planned, but activity for the second half was changed, literally in the middle of the on-air reports. During this session (in which participants were discussing the merits of course materials supplied by colleagues), it became evident that an emerging group of issues demanded discussion. These issues were not restricted to those current for instructional designers, but included topics of more general interest to the faculty and administrators present. So the second 40-minute discussion period dealt with a rapidly generated list of issues, on the understanding that they deserved indept discussion in future workshops.

P.I.M.A. Copyright Symposium Well Attended

by Terry Frank
Resource Co-ordinator,
Greater Victoria School District

The November Copyright Symposium in Richmond, British Columbia - organized and sponsored by the Pacific Instructional Media Association - saw one hundred and fifty concerned media professionals from all over the province gather to discuss the proposed changes to Canada's outdated copyright legislation.

On hand to debate the issue were Frank Keyes, co-author of **Copyright in Canada: Proposals for Revising the Law** (Keyes-Brunet 1977), and present Director of Copyright for the Department of Communications; Jean Guy Jacques, a Montreal lawyer who worked with Radio Canada in Quebec and the Department of Justice in Ottawa before establishing the Société pour l'avancement des droits en audio-visuel (SADA) Ltee.; and Allen Soroka, an assistant law librarian at the University of British Columbia and past President of the Copyright Committee of the Canadian Library Association. With Mr. Keyes presenting some of the views of the Bureaucrats involved with copyright; Mr. Jacques, the views of creator/owners; and Mr. Soroka, the views of users, opposing views were well represented.

Joining the panel on the speakers platform were Gary Carlson - President of the Pacific Instructional Media Association - who introduced the panelists, and Bill Hanson - President of AMTEC - who served as moderator for the session.

Mr. Keyes spoke first, explaining that the current Copyright Law of 1921 does not specifically address sound motion picture, cable television, audio recordings, videotapes, television broadcasts or computers, a situation which charges the courts with the fearsome task of applying a law of print technology to a communications age. The Liberal government, in attempting to remedy the situation, issued the white paper titled **From Gutenberg to Telidon** on May 2, 1984. This paper was to inform everyone as to the governments' positions on all the substantive and technical issues of copyright, to provide time for various interests to prepare positions, and to generate comment and debate with a view to eventually finalizing legislation.

The paper set out to provide a climate for creativity, to see that Canadians benefit from technological change, and to ensure the economic and moral rights of creators while trying to strike a balance with respect to the interests of users.

Mr. Keyes elaborated on the following audio-visual areas in which changes to the current law were proposed in the white paper:

1. The current law relates specifically to motion picture film produced by wet chemistry only. The white paper suggest video-tape be included.
2. The current law does not specifically address sound recordings; the white paper intends to designate a new "sound recording" category.
3. The current law is vague about ownership; the white paper suggests that ownership rest with the person or persons principally responsible for the arrangements to produce the work.
4. Fines for summary remedies under the current law allow for $200.00 per offense; the white paper suggests $25,000.00
5. The current law has no exemption for education beyond fair dealing; the white paper suggests one be granted to non-profit educational institutions for teaching situations.

Mr. Keyes went to some lengths to outline the current situation so far as piracy is concerned. He explained that producers in Canada, are deprived of 16-25 million dollars in sales annually due to piracy. He said that the American Betamax case which allowed home taping "for the purpose of time shifting" did not apply to educational institutions in the U.S. and that even if it had, the American law would of course have no weight in Canada. He even went so far as to offer his own opinion that were such a case to be heard in Canada, the deci-

sion would have been the reverse and that home taping would have been disallowed. He worked through one simple and common video related problem and pointed out where the present law would have been broken. In his example a teacher rents a video-tape from a local outlet, shows it to a class (violating the public performance aspect of the present law) and makes a copy for the school (violating the reproduction aspect of the present law).

He closed by reminding everyone that the white paper is a Liberal document and that the Conservatives may use all, some, or none of the white paper but that above all, they are interested in consultation and that groups wishing to comment on the paper should send briefs and submissions to:

The Clerk of the Committee,
Room 516, 180 Wellington Street,
Ottawa, Ontario,
CANADA
K1A 0A6.

Jean Guy Jacques followed Mr. Keyes and recounted the history of copyright problems and the road to their solutions in Quebec. Mr. Jacques said he became aware some time ago that colleges were making illegal copies of preview/evaluation materials and materials taped off-air, and were printing catalogues of these pirated resources. He established proof of these procedures and, after trying unsuccessfully to negotiate directly with the colleges, moved on to discussions with the ministry. After these discussions also proved futile, Mr. Jacques formed SADA, the Société pour l'avancement des droits in audiovisuel Ltee., and signed contracts with producers for reproduction rights. Then, in May 1980, SADA sued 14 colleges, got injunctions to prevent illegal copies and catalogues from being destroyed and sent representatives into the colleges to compile evidence. From an original estimate of a $900,000.00 action, the compilation of evidence suggested a figure of $4,250,000.00.

In 1982 once again an attempt was made to talk to the Ministry but again nothing happened. SADA threatened to sue 13 more colleges and in 1984, after $200,000.00 in legal fees had been expended, the Government of Quebec payed SADA $1,250,000.00 in return for the promise not to sue schools that were in violation of copyright. For its part, the ministry promised that no school would violate copyright and SADA permitted all schools to keep what illegal materials they wanted for a licensing fee of $1.00 per minute.

As a result of the proceedings, the Government of Quebec has established a $500,000.00 annual budget to assist schools in acquiring copyright licensing from SADA. The cost of such licensing is $3.00 per minute. The ministry pays $1.50 and the purchasing school $1.50.

Mr. Jacques closed by indicating that his interests in audio-visual copyright violations were not limited to Quebec.

Finally it was Mr. Soroka's turn and he wasted no time in establishing the tone of his theme explaining that we were all attending a wake. Speaking succinctly and emphatically he suggested this proposed white paper would mean the death of audio-visual use in education. He insisted that there should be an education exemption from copyright, that producers are mostly large multi-nationals, that money payed to producers goes into the United States, that in times of restraint, money leaving the country results in lost jobs, that educational concerns are beyond the law, and that educators everywhere should work hard to establish an educational exemption in the new copyright law.

When asked, Mr. Jacques responded that half the money collected by SADA remained in Canada. Mr. Hanson announced coffee and an intermission ensued.

After intermission the discussion was opened to the audience at which time a number of issues were raised.

Bruce Maclean of Vancouver City College asked if between the rights of users and owners, a middle ground could be sought whereby educators could record items off air and hold them for a period of time for preview. Mr. Keyes said such an arrangement can be worked out anytime between producer/owners and users. Mr. Jacques said SADA allows 15 days for preview.

Mike Reddington of the Open Learning Institute explained that the Institute leases B.C. rights only for its programming but the Anik C. distributes the signal all across Alberta. Mr. Keyes explained that this "footprint" problem was dealt with in a 1974 Brussels Treaty to which Canada does not subscribe. As a result the law in that area is a mess. No solution was offered to the problem.

Mike went on to outline another problem involving programs to which the Open Learning Institute has purchased exclusive B.C. rights only to find that the Learning Channel carries the same material nationally. Mr. Keyes explained that under the current law an exclusive licensee has no license to sue; a situation the white paper hopes to rectify.

As the discussion wore on, a feeling began to develop that educators should have a previewing exemption and Mike Reddington suggested that a 45 day period for previewing would be appropriate. Allen Soroka suggested a straw vote be taken on the resolution that educators be allowed a 45 day preview exemption from copyright infringement. The vote was overwhelmingly in favour.

Raising the other side of the issue, a representative of the Provincial Secretary's Office pointed out that we do not ask architects to build schools for free or woodworkers to provide desks for free; neither should we ask producers to produce learning materials for free which is what an educational exemption has the effect of doing.

An unidentified independent producer announced that a film he is producing will cost $500.00 per print, a price that includes the projected loss of income from free "video babies." Film purchases, he asserted, are inflated due to the loss of revenue through pirating.

In the summary session, Mr. Keyes said he enjoyed attending and would happily carry the results of the straw vote to his "masters." He also urged those with strong views to communicate those views to the Committee through the Clerk as he had suggested earlier. Mr. Jacques said he too had enjoyed the event, that he had heard the same points raised in Quebec a week earlier where educational users experiencing cut backs were unable to purchase the learning materials they needed. He felt that users and producers will have to work together to convince Provincial Governments of the need to develop appropriate budgets for audio-visual acquisitions.

Mr. Soroka explained that he felt he had done his job by provoking people to stand up and speak their minds and he urged everyone with strong views to exress those views to the lawmakers since the issue is clearly a live one and in no way finally settled.

Mr. Hanson thanked all three panelists, and the symposium drew to a close.

Editor's Note - The Symposium proved to be a highlight of the 3 day conference with copyright discussions carrying on long after the event ended.

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Audio cassette copies of the proceedings are available from P.I.M.A. for $15.00. Orders should be sent to:

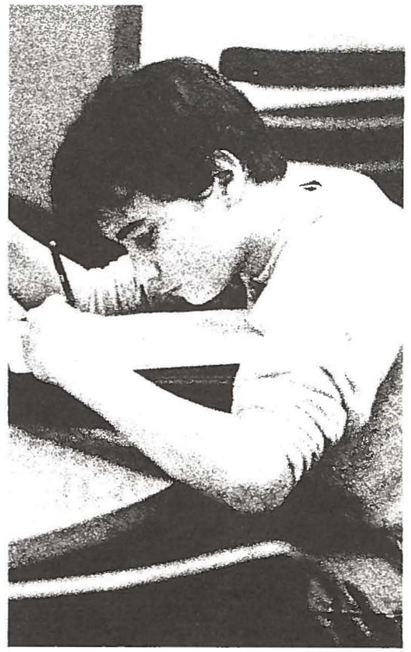
University of Victoria
P.O. Box 1700
Victoria, B.C.
V8W 2Y2
Attention: Mr. Ron Harper
A.V.T.V. Services

AMTEC well represented at ICEM Conference

by Ed Crisp

For the second time in its history the International Council for Educational Media has held its annual conference in Canada. The 1984 conference was held on October 8th and 9th in the breathtakingly beautiful setting of the Banff Centre, and was hosted by the National Film Board of Canada and Alberta Education. While most delegates were from Canada (especially Alberta), several other countries were represented; these included Finland, France, Great Bri-

Continued on page 27.



AMTEC ANNUAL ELECTIONS

Nominations are requested for the elections to be held in 1985 to fill two positions on the AMTEC Board.

The positions are:

1. **Vice-President (President-Elect)**
   This is a three year term, beginning in June, 1985 a the Annual Conference. There will be one year as Vice-President, one year as President and one year as Immediate Past President.
2. **Member-at-Large**
   This is a three year term beginning at the Annual Conference in June, 1985.
   All nominations must be received by the Chairman of the Nominating Committee by January 30, 1985.

Procedure

1. **If you wish to nominate someone:**
   Nominations may be made by any five AMTEC Members providing the nominee is a member of AMTEC and has signified his/her willingness in writing. A brief biographical sketch of the nominee must be sent to the Chairman of the Nominating Committee along with the nomination.
2. **If you wish to be nominated:**
   Indicate this to five AMTEC members who will arrange to nominate you by sending a letter of their intention and your biographical sketch to the Chairman of the Nominating Committee. You must be a member of AMTEC.

All nominations must be received by the Chairman of the Nominating Committee by January 30, 1985.

Send nominations to:
Dr. F. Barry Brown
Chairman, Nominating Committee
Past President, AMTEC
Professor and Head, Department of Communications,
Continuing, and Vocational Education
College of Education
University of Saskatchewan
Saskatoon, Sask. S7N 0W0

COMMUNICATION SATELLITE

Continued from page 5.

of an "open university" in the region (Academy for Educational Development, 1983a).

Each location in the system has a teleconferencing room large enough to hold 30 people with appropriate audio receive and transmit equipment. Like the USP system, it is also completely interactive so that students, tutors and instructors at any of the locations are able to talk and be heard by all of the participants at all of the locations.

Other planned applications of the system include in-service training for nurses, health professionals, laboratory technicians, pre-school teachers, and professionals in business and public administration. Agricultural extension information is also projected as an important component for development. Regular weekly conferences are scheduled for project coordinators and tutors. The system, like its counterpart in the South Pacific promises to provide valuable lessons to other regional satellite applications such as those being planned for the 21 Arab league nations (ARABSAT).

NATIONAL APPLICATIONS

Indonesia

Indonesia was the first developing country to establish a domestic satellite system with the launching of the first PALAPA satellite in 1976. Television was to be used by the government as a vehicle for modernizing the country and promoting national development. This was no small order in the "largest archipelago in the world", a nation composed of 13,677 islands, stretching 4300 kilometres from east to west and 1500 kilometres from north to south, with a population of almost 140 million. Through the use of the satellite, the government has the means to effectively reach the entire country to promote a sense of national identity and coordinate efforts toward national development. The system developed consisted of 40 ground stations, one for each of the 27 provinces and 13 for large industrial centres. PALAPA A had a capacity for transmitting 12 one-way color television channels, and 400 two-way telephone circuits or 800 one-way telephone circuits. Since it was of the "distribution" system variety, the relatively weak signals were picked up by the earth stations, amplified and rebroadcast to antennas in surrounding homes.

Until 1982 the satellite was used mainly to broadcast news/information programs (22%), non-formal education and religion (23%), art and culture (23%), entertainment (22%), commercial messages and other promotions (10%). The program schedule ran from 17.00 to 23.15 from Monday through Saturday and from 10.00 to 23.15 on Sunday. Most of category of Education was taken up with children's programs (music, and songs, cartoons, plays); for older students a quiz show competition between various schools was very popular. Language development for all segments of the population was also stressed. A 1981 study concluded that television was having an appreciable effect on the comprehension of the national language by different language groups and that messages of modernization and development were being widely dispersed (Alfian and Chu, 1981). Current plans call for the establishment of an educational television centre to introduce formal instructional television at all levels (and utilize the programming hours available during the day). These plans also include and open university system with students to be drawn from all parts of the country. An educational technology centre is already in place to support both developments.

Parallel with these plans has been the establishment of a satellite based audio-teleconferencing system to meet a critical need in training professionals to support agricultural development. The project developed by the Eastern Islands University Association presently has ten locations spread out over 1600 miles or 2100 kilometres from East to West to serve 30,000 students. Shortages of trained faculty, notable in the basic agricultural sciences, combined with increased enrollment pressures has necessitated this new approach since moving faculty members from one campus to another is time consuming, expensive and disruptive of other coursework (Academy for Educational Development, 1983b).

The new system will link all ten campuses of the Eastern Islands University Association and an Agricultural Institute on the main Island of Java through interactive audio-teleconferencing links. Each site will have a room large enough for 50 people for this purpose. The system will provide direct instruction for students, research coordination, and administrative and policy coordination among the participating professors. The project will be closely monitored and evaluated as a potential model for the comprehensive open university.

India

The most extensive use of satellites for education undertaken in the developing world thus far occurred in India with the Satellite Instructional Television Experiment (SITE). For one year (August 1975 to June 1976) television programs were transmitted via the ATS-6 satellite to community television receivers, manufactured locally, in some 2,400 remote villages in 6 of the most undeveloped states of the country. The experience was also noteworthy in that India was the first country to pioneer the use of direct broadcast satellite technology for community television. The project was designed primarily as an opportunity for Indians to gain and share expertise in the daily operations of producing, disseminating and managing a satellite operation (Mody, 1979) in preparation for a national satellite operation in 1982.

Programs were broadcast four hours per day in four languages in two primary blocks: Ninety minutes of in-school broadcasts during the morning hours (twenty-two and one-half minutes per broadcast) for primary school children; and 150 minutes in the evening intended for the general audience (divided into a 30 minute news and public affairs program in Hindi, the national language, and three programs of 40 minutes each in alternating languages appropriate to each of the six states). In-school broadcasts were targeted to children in grades I to V (ages 5 to 12) and concentrated on language skills and science. General audience educational programming covered topics such as health, nutrition, family planning and agriculture. Tests taken before and at the end of the satellite transmissions indicated significant gains in children's language development and a greater interest in acquiring knowledge when compared to children who did not view the instructional programs (Shukla, 1979). Overall, the experiment showed that developing countries like India could design, manage and operate advanced communication technology for development purposes. The experience gained during this project was intended to serve as the basis for launching India's first domestic communication satellite (INSAT 1-A), which had national coverage, during 1982.

As background to India's deployment of a national satellite for educational and development purposes, it is useful to survey the current situation which would necessitate this type of technological solution. India's population by 1985 will be about 760 million people. Out of this total some 180 million children in the 6-14 group will be eligible for primary school enrollment. Current estimates suggest that about 60% of this number of 110 million children could be accommodated in the traditional system; the remaining 40% of 70 million are intended to be handled under a non-formal education program (UNESCO, 1981). More realistic estimates suggest that a maximum of 75% of the primary school population will be able to be accommodated under both the formal and non-formal programs combined. This would leave at least 45 million children without any direct access to education.

The problem of drop-outs is equally severe. Out of 100 children who enter the first grade, 60% will have dropped out by the end of the 5th grade (lower primary) and 75% by the end of the 8th grade (upper primary). The tasks facing the government in providing increased quality of education to those having access to primary education and basic education for those outside the system and drop-outs are thus formidable. They would be practically impossible to achieve without the use of distance education through television and radio for both in-school and out-of-school primary age group audiences.

Rural primary school teachers have been identified as the third target group for a focussed distance education paradigm. Typically, primary school teachers have 10 or 11 years of formal schooling, with another two years of professional training. The schools in which they teach generally consist of one or two rooms. with virtually no access to teaching aids. Indeed, about 40% of all schools have been classified as unsuitable. In-service programs could be particularly directed at up-grading teacher skills in the teaching of science, mathematics and languages. Television could, as a teaching supplement, also assume more of the direct loads in these areas as it becomes better developed in the country.

The INSAT satellite is also planned to be used to improve the teaching of literacy skills to the vast number of illiterates in the country. National literacy rates are 36% (47% male and 25% female), and at least 100 million adults have been targeted as the primary audience in the productive 15-35 year age group. In addition, special programs will be produced for adult education instructors at the village level who will help coordinate the literacy classes as well as projects on health, agriculture, nutrition, family planning and rural development.

India's attempt to provide access to primary education for children and basic education for adults is to be achieved through a concerted national effort. To this end, at least 34 earth stations will be constructed to redistribute satellite relayed programs through terrestrial networks. In addition, receiving dishes similar to the type used in the SITE experiment will be installed in villages and connected to community television receivers in remote sections of the country.

INSAT 1A was launched during the spring of 1982 but because of technical problems in fuel supply it was declared unuseable in September of the same year. Its successor, INSAT 1B was deployed during the autumn of 1983 and will take up the tasks described earlier. It has two television transponders, one of which will be used for national distribution and the other for regional programming on a time sharing basis. The latter component is particularly important given India's diverse linguistic (15 official national languages) and religious groups (six major religions). The project emphasizes India's commitment to "universalizing" and up-grading the quality of education for its people, and to harnessing the potential of satellite technology in meeting these goals. In this, it will be closely watched as the third world prototype for development of this scale and magnitude.

CANADA

Inuit Broadcasting Corporation

Canada has had a very positive attitude toward the use of satellites, not only as a distribution system but as a means of reaching its widely scattered populations. Canada is the second largest country in the world but most of its 25 million people live within a 450 kilometre band along the U.S./Canadian border. Beyond the 60th parallel, fewer than 100,000 people occupy a land mass that is larger than all but a few countries of the world. The costs of providing communication services through conventional terrestrial networks have been prohibitive and until the advent of the ANIK A satellite in 1972, most of the electronic communication was in the form of short-wave radio.

The ANIK A satellite signalled a revolution in exposing the larger communities in the Arctic to television programs produced by and for the people of southern Canada. Since most of the northern communities are populated with native Inuit (Eskimos), this type of television represented a dramatic cultural incursion into their lifestyle, since it brought them into direct exposure, for a maximum total of sixteen hours a day to programming largely irrelevant to their deeply-rooted social customs and particular environment. The older people in the community were especially concerned about the impact of this type of programming on their children. Surveys taken before the introduction of satellite television and one-and one-half years later showed that these fears were well founded. Children had departed considerably from traditional social-psychological postures of their parents, particularly in their use of the Inuit language an desire to remain in the Arctic as opposed to moving to urban centres in the south (Coldevin, 1977). A follow-up survey in 1980 revealed much the same pattern with entrenchment of the effects noted earlier (Coldevin and Wilson, 1981). The survival of the Inuit language and culture were thus being seriously eroded by the "magic in the sky" as it was called from the south, and it became apparent that something had to be done to stem this pattern - and quickly.

The opportunity came with the launching of the ANIK B satellite in December of 1978. ANIK B was the world's first hybrid satellite having 12 television channels in the 6/4 GHz "distribution system band", and 6 channels in the 12/14 GHz, "direct broadcast band". The Inuit reasoned that the most important way to counteract the influence of southern television would be with "northern" television, produced for and by their own people. The direct broadcast satellite provides an immediate vehicle for distributing relevant programming into remote Arctic communities.

A pilot project under the title of Inukshuk began during November, 1978. ("Inukshuk" refers to the stone beacons which the Inuit made to mark their hunting routes, and hence became their first northern communication aids).

Funding was received from the Federal Government of Canada to train Inuit staff in television production, to establish a studio and production centre in Frobisher Bay and to set up television receiving dishes, teleconferencing centres and audio transmit facilities in 5 Arctic communities. The satellite service which began in September, 1980 and continued to May 31, 1981, had three basic educational objectives: inter-active teleconferencing meetings, adult education and children's programming. Each community was able to receive one-way video and two-way audio; meeting rooms were equipped with large screen television receivers, audio microphones and speakers. Inukshuk had access to the ANIK B satellite for 17 hours per week. About half of this time was taken up with interactive meetings; altogether some 379 local groups participated in sharing ideas, and discussing problems on such diverse topics as hunting and fishing, to issues associated with alcohol control and better health conditions. An example of adult education programming included a 10 part series on how to cook food from the land and its nutritional value. Children's programming focussed mainly on exploring awareness of community life in each of the participating centres. The general program schedule also included news, public affairs and cultural topics of special interest to the Inuit population, broadcast in their own language. The fledgling network was hailed as a success and received funding and a revised mandate to continue under the new title of the Inuit Broadcasting Corporation in the Autumn of 1981. It currently transmits programs out of Frobisher Bay throughout the north, including Northern Quebec, and is becoming increasingly popular (Valaskakis and Wilson, 1984). It serves as a valuable exercise in the harnessing of satellite technology to serve the specific needs of a region and its unique population.

KNOWLEDGE NETWORK

British Columbia, while comprising a smaller area than the Eastern Arctic shares the characteristics of a widely dispersed population. The Knowledge Network is an innovative approach to the problem of providing learning opportunities for British Columbians of all ages regardless of where they live. Established in 1980, the Knowledge Network utilized the experimental ANIK-B satellite for three years until the launching of the ANIK-C satellite in December 1982. It then became the first full time direct broadcasting service to use the newly placed satellite. ANIK-C was designed as a direct broadcast satellite us-

ed to deliver television signals over a large geographical area with signals to be received by small dishes and retransmitted to cable television. Presently 140 communities in British Columbia are able to receive Knowledge Network programming. In November 1982, there were 375,000 regular viewers throughout the province. In addition, some communities in the Yukon and Northwest Territories, Alberta and the northwestern section of the United States are able to tune in to Knowledge Network transmissions.

The Knowledge Network provides educational and general interest programming for children and adults, telecourses and live interactive educational broadcasts, constituting a total of 98 broadcasting hours per week. Fifty-nine percent of the programming is produced in British Columbia, the majority of which originates with educational institutions responsible for post secondary and continuing adult education. The number of educational institutions, government ministries and agencies which provided and supported educational programming on the Knowledge Network in 1983 totaled 33 and include the University of British Columbia, the University of Victoria, Simon Fraser University, 15 two-year colleges, and several learning institutes.

The Knowledge Network is thus not a separate Distance Education institution, but rather one working part of the total commitment to "Distance Education" in British Columbia. The term "Learning System" is used to describe what happens when the existing educational structure including government plus universities, community colleges and provincial institutes strive to cooperate to expand educational opportunity through the use of a variety of technological efforts, chiefly the telecommunications satellite (Forsythe and Collin, 1983).

Integral in the organizing principle of the "Learning System" are the Learning System Working Groups, consisting of representatives from the participating educational institutions. The Knowledge Network assists the members by providing the opportunity for the cooperation and problem solving necessary to further development of the educational network.

At the community level, Learning Centres, part of local colleges when possible, have been established in 67 locations throughout the province. The Centres offer local residents a variety of services relating to Knowledge Network courses as well as other "Distance Education" efforts. Such services include audio conferencing opportunities to facilitate interaction with instructors and other students, special library services for degree students, etc.

During 1982-83, 8,000 students enrolled in various degree and continuing education courses offered through the Knowledge Network by cooperating educational institutions. Analysis of student enrollments indicate that students residing in the more sparsely populated areas of the province and thus beyond physical accessibility to the three Universities located in the southern part of the province are participating "Distance Education" students tend to be approximately 10 years older than full-time on-campus students, are employed full-time and have families. Educational opportunities are therefore being provided and more importantly accepted and used by those who otherwise might not be served.

A new phase of development has been completed by a subsidiary corporation, the Knowledge-West Communications Corporation. It now operates as a broadband closed circuit service which links five teaching hospitals and the universities with two-way video, audio and data units. The Knowledge-West also acts as a Developmental Directorate for new ventures in closed-circuit satellite video conferencing, data network and electronic publishing (Forsythe and Collins, 1982). The implications of this work are interesting and promise future development.

CONCLUSIONS

As can be readily noted from this brief overview, the primary uses thus far for satellite communications have primarily been in areas of extending preparatory and first year university courses (USP, UWI, Knowledge Network) in-service teacher training (USP, UWI, KN), continuing education (USP, KN) and in-service professional training (e.g. agriculture, health; UWI, Indonesia, KN). Non-formal education at all levels was attempted in both the Canadian and Indonesian projects. The only country to attempt formal instruction at the primary level was India (SITE project as a prelude to INSAT 1-B). Another particularly beneficial use of satellite technology was in the use of audio teleconferencing systems for direct instruction, tutorial counselling and project administration (USP, UWI, KN, and to be included in Indonesia). In the case of the IBC, this system (video transmission from central site and audio feedback) also proved useful as a decision making forum for adults concerned with mutual regional problems. While effective at the adult level, however, the literature suggests that teleconferencing systems may not be viable for larger-scale education endeavours such as support for in-school primary education (Casey-Stahmer and Lauffer, 1982).

Thus while the current use of satellite technology for distance education is relatively limited, the literature is almost uniform in suggesting two major trends within the next twenty years: 1) The expansion and use of satellite technology will render the accessibility to television and radio almost universal within the next twenty years but the major trend for applying information and educational services in the third world will remain with radio (Block, 1983), and 2) the nations that could profit most from satellite technology for both formal and non-formal educational development are those that can least afford them, because they lack the finances, industrial base and technical infra-structure to maintain a comprehensive system (Polcyn, 1981). Small-scale terrestrial based projects will remain the norm for most of the developing world for some time.

But for those countries currently on the edge of exploiting satellite television technology such as China, Brazil, Mexico, Indonesia, Saudi Arabia and India, the foreseeable prospects are encouraging. The major challenges to be faced by these nations are those of software development, orchestration of human resources, and activities at the receiving end (feedback and motivation factors), whether it be school, home or village community centre based. These are precisely the problems faced by the major developed nations and there is little reason to expect that developing countries will be different although the circumstances may warrant different solutions. Canada, for example, is able to supply its own technology, has adequate financial resources, and target audiences which are relatively small from an international prospective. It is therefore free from many of the overwhelming concerns facing developing nations and able to explore a variety of issues which will refine the use of satellite technology for education.

Satellites can provide the technical means to distribute educational material over large distances at increasingly affordable costs but harnessing the technology to equalize educational opportunity will require careful planning if this potentially major innovation is to be successfully exploited.

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TELIDON

Continued from page 11.

to load the Telidon created pages to the action task software.

Student access to the instructional materials was provided through Telidon terminals located in the Library and in the Audio-Tutorial Laboratory of the Ontario Veterinary College. Students were issued with a course identification number and a personal password and signed on the system initially like a regular GRASSROOTS subscriber. The course IDs, however, were set up as a closed-user group and the students by-passed the standard menus to be taken directly to the appropriate materials for the assigned course. Telecommunication between the terminals at Guelph and the Winnipeg database was achieved through the University's computer network to which the dataroute concentrator ports were linked.

The instructional materials took two basic forms. The course in Zoology used a resource reference approach. Here many of the overhead visual materials used in class were available for reference and review on the terminal. Interactive features were introduced so that the student could contrast and compare different cell structures or order the way in which an illustration was presented. In the other courses in Neuroanatomy, Ornithology and Psychology a test and feedback approach was used. Here students were presented with multiple choice or short answer questions. In some tests a second try was allowed after an incorrect response while in others the next item was presented immediately.

The system described worked reasonably well but there were problems. Operating on a large database with a fluctuating user demand caused the system to have a variable response time. During periods when the 1500 GRASSROOTS subscribers accessed the Chicago Board of Trade commodity prices, a noticeable slowdown in the response time of the system provided an aggravation to a student who had to wait up to 30 seconds (sometimes longer) for recognition and feedback to an entered response. The University's computer network was being expanded during the time of the trial and this led to occasional failures in gaining access or being "dumped" during a session. Similarly, occasional interruptions of the GRASSROOTS system led to the same result. A frequent problem was the volume of traffic on the three University access ports which led at times to delays of up to 45 minutes in signing on.

While this instructional system was being used for on-campus students it was emulating a distance education mode. Any terminal on the GRASSROOTS system, with the appropriate ID and password, could access the instructional materials. When it is considered that the system services users in Alberta, Saskatchewan, Manitoba and Ontario, as well as those in GRASSROOTS America, the potential for a serious distance educational application can be appreciated.

TABLE 1

STUDENT RESPONSES TO TELIDON USE IN COURSES IN NEUROANATOMY AND INTRODUCTORY ZOOLOGY

		Neuroanatomy	Zoology
Number of enrolled students		20	600
Response rate		95%	33%
Previous awareness of Telidon		65%	22%
Previous use of Telidon		20%	6%
Number of sessions used		1-3	1
Nominal duration of sessions		30 min.	30-45 min.
Found system easy to use		92%	78%
Value of colour graphics		100%	86%
Accuracy of colour graphics		92%	68%
Would you like to see the system used for marked examinations	Yes -	77%	58%
	No -	23%	27%
	undecided -	-	15%

Student Reaction

Surveys were conducted in the Winter Semester of 1984 among students using the system and a second survey was taken of students at the end of the first module in the Fall Semester of 1984. They reported the system as basically easy to use, the colour graphics of value and expressed a desire for continued use.

In the following tables the results of the Winter and Fall Semester surveys are shown.

The above results come from two different types of student. The Neuroanatomy course is a fourth year Biological Science course which enrolled majors and the high level of positive response may be associated with this group's broad exposure to a variety of methods over its academic career and its members' relative maturity. The Telidon materials used were designed for the first year Veterinary Medical students and were used by them in the previous semester. This course was not offered in the Winter Semester and the students were not available at the time of the survey. The content of the Biological Sciences' course in neuroanatomy was similar to the Veterinary course. The use of the Telidon test materials by a different instructor and the positive acceptance by the students suggest an interesting example of sharing and exchange of costly resources.

The Introductory Zoology course presented a different student group. Here first year students generally are regarded as less flexible and more dualistic in their thinking (Perry, 1970). They do not have the degree of experience with a variety of methods as upper class students. As a group they were much less aware of the Telidon medium than the fourth year students and were generally less secure with its educational value. While those expressing negative views of its use in marked examination are approximately the

same as in the fourth year group a significant minority were uncertain. This suggests some caution in using "high tech" systems with students who may be generally insecure in a new environment. This has implications for distance education where the human factor is even more remote than in an anonymous class of 600.

TABLE 2

STUDENT PERCEIVED ADVANTAGES AND DISADVANTAGES OF TELIDON AS AN INSTRUCTIONAL MEDIUM

Advantages	Disadvantages
• immediate feedback	• slow response time
• emphasizes student learning	• impersonal
• self-pacing	• tested on material before studied in class
• good practice questions	• limited variety
• variety of questions	• access difficult
• allows indiviual or group study	• too trivial
• more objective	• wrong answers not corrected
• stimulates recall	• spelling counts
• opportunity for review	

These student responses show a recognition of positive attributes in the human learning domain for this type of automated study system. The items on the "disadvantage" side are thoe which fortunately are addressable. Some of these are technical and relate to the choice of equipment, e.g. slow response time, difficult access. The majority of negative points relate to matters of instructional design such as the sequence of tests related to the course syllabus, the triviality of limited variety of test items or the question of spelling and the handling of wrong answers. In free form comment students remarked upon its "excellent aspects of colours and visual accuracy", "most impressive motivating factor", "good visual representations" and "the graphics are great especially for neuroanatomy".

A second study was conducted by Herrmann (1984) among 303 students in a course in "Behavioral Aspects of Drug Action". This course treats information from the fields of pharmacology, psychiatry and psychology. Its students come from a variety of backgrounds and include a number of continuing adult students. The course is offered in the evenings which makes it the type of course eligible for consideration in a distance education mode.

Recent approaches in the Department of Psychology have focussed on the learner rather than on the teacher. It has emphasized methods applied to produce measurable improvements in student retention and attainments. Among the methods used has been the Personalized System of Instruction (PSI) developed by Keller (1968). This approach has been found to show improved student performance and increased student satisfaction (Leppmann and Herrmann, 1982). However, in the "Behavioral Aspects of Drug Abuse" course, while the introduction of the PSI option resulted in a one letter grade average improvement of student performance, it did not increase satisfaction with the course. A consistent flaw reported by students was an unrealized expectation that the contents of the course would be vividly and dynamically demonstrable. The actions of drug agents are frequently not ethically demonstrable and according to students were rarely clearly portrayed but wre highly boring.

Attempts were made over a two year period to address the problem by introducing film and graphic material and the inclusion of the PSI option. In this study two sections of the course were taught using traditional lecture and seminar methods. Two sections offered a PSI format with module quizzes presented as computer text via a VAX computer system. Two other sections used the PSI format with student quizzes presented via Telidon using highly graphic and colourful material. All students wrote a common examination prepared and graded independently of the course instructor. They also completed a questionnaire which surveyed study habits and attitudes (Herrmann 1983).

Herrmann (1984) found that the students in the PSI plus Telidon sections reported a significantly greater satisfaction with the course than those in either the lecture/seminar or PSI plus VAX sections. Table 3 presents model responses obtained from at least 66 per cent of the students.

TABLE 3

STUDENT RESPONSE PATTERNS TO THREE TREATMENTS IN A COURSE IN BEHAVIORAL ASPECTS OF DRUG ACTION

	Model Response by >66%		
	Lecture/Seminar	PSI/VAX	PSI/Telidon
1. Time and effort compared to other courses	same	more	as much
2. Amount of effort compared with other Lecture/Seminar methods	as much	more	as much
3. Apply this method to other courses	no/no difference	yes	yes
4. Help needed for organizing a course	need help	little	little
5. Exam material preference	text/lecture	text/lecture	text/lecture
6. Exam type preference	multiple choice	multiple choice	short answer
7. Preparation for modules-/seminars	cram	systematic	systematic
8. Opinion about module method	N/A	like	like
9. Module tests	N/A	difficult	fair
10. Value of feedback	N/A	little help	helpful
11. Mechanical details	N/A	easily understood/simple	easily understandable
12. Expected grade	same	higher	higher

While both PSI treatments yielded enhanced academic performance as measured by the common final examination students in the PSI with Telidon sections reported greater satisfaction with the course than students in either the lecture/seminar or PSI plus computer text sections. Hermann also found less study time and greater satisfaction by students using Telidon than by other PSI students. In examining student responses between the two groups using computer displayed test items, it was found that Telidon presented questions were perceived as "fair" while the same question asked in computer text on a regular CRT was seen as "difficult". In addition the same feedback given via Telidon was viewed as being "more helpful" than that given via the monochrome CRT.

A third survey was conducted among Ornithology students at the completion of the first test module in the Fall Semester, 1984. Similar methods of designing and delivering the visual test items were employed as in the courses reported thus far. Table 4 presents the initial reaction of students to this use of Telidon enhanced instruction.

Students were asked to compare this system with the traditional testing system. Among the responses three patterns emerged, those favourable, those critical and those offering suggestions for improvement. Favourable comments were "easier to use, less work", "OK for self-testing", "OK but I'm not familiar with reading from a screen", "OK, but disheartening when you choose a wrong answer", "definite improvement". Among the critical reactions were "impersonal", "limited range of responses", "prefer traditional, no allowance for ambiguity", "problem in getting the exact wording", "too inflexible with spelling", "puts more pressure on the individual with errors in key punching not noticed right away".

The most frequent comment for improvement was the request by nearly half of the respondents for the correct answer to be displayed. While this raises the question of the instructional intent it does provide some indication of student unease with an automated system. Attempts were made in the design of some modules in other courses to relieve this tension by giving a second try on multiple choice or short answer items.

AMTEC

LEADERSHIP AWARD

ASSOCIATION for MEDIA and TECHNOLOGY in EDUCATION in CANADA

AMTEC Leadership Award

The premier award given by AMTEC is the Leadership Award, a handsome engraved gold medallion. There may be no more than two recipients in any one year, and it is given in recognition of outstanding service in the field of educational media. Following are the general criteria for the award:

1. The nominee must have been active in the educational media field for 10 years or more.
2. The nominee may have been active at either local, regional, national or international level.
3. The award may be presented to one who is active, retired or deceased.
4. Nominations may be made by any member of AMTEC.
5. The nomination must include a brief biographical sketch of the nominee as well as any other information which will be useful to the selection committee in making their decision. This should include the educational background and the reasons why the nominator feels the award should be made.

Presentation of the award(s) will be made at the AMTEC Annual Conference Awards Function. This will be part of the annual conference in Calgary in June 1985.

Nominations should be submitted to the Awards Chairman as soon as possible. Address all nominations to:

David MacDougall
Director of AV and TV Services
Sheridan College of AA & T
1430 Trafalgar Rd.
Oakville, Ontario L6H 1L1

TABLE 4

STUDENT RESPONSE TO THE USE OF TELIDON DELIVERED TESTS IN COURSE IN ORNOTHOLOGY N = 15

1. Is this the first time you have taken a test using Telidon?	Moderately easy to use	100%
	Yes	100%
	No	-
2. Did you have any problems with the system?	Yes	53%
	No	47%
3. What was your reaction to this technology?	Very easy to use	40%
	Moderately easy to use	60%
	Difficult to use	-
	Very difficult to use	-
4. Was the test...	too long?	20%
	too short?	27%
	right length?	33%
	no answer?	20%
5. What was your impression of the graphics used?	added significantly?	33%
	useful	60%
	not very useful	7%
6. Was the display time...	much too slow?	-
	too slow	20%
	acceptable	73%
	very good	7%
7. How did you find the graphic depiction of content?	inaccurate	7%
	some uncertainty	33%
	acceptable	47%
	accurate	13%
8. Was the wording of question easy to understand?	Yes, very	27%
	Yes, fairly	60%
	No, confusing	7%
	uncertain	7%
9. Would you like to have access to this material during the semester as a self-testing aid?	Yes	93%
	No	7%

III. Discussion and Implications

While the two uses of the Telidon system reported here (agricultural extension and instruction) may appear unrelated to distance education, it is in combining the findings of both studies that some guidance may be offered for distance education planners.

The agricultural extension field trial with GRASSROOTS revealed that it is possible for a university to collaborate with a commercial electronic publisher to their mutual advantage. The University was able to get up to spped in a very short period of time without the capital and operating expense associated with a major database delivery system and network. The system operator gained access to a region otherwise difficult to enter. It also gained experience in the design of action task software not then in use by the company. Ongoing working relationships were established which make it possible, subject to agreement on specific applications, for the GRASSROOTS system to serve a number of distance education projects. The existence of the GRASSROOTS network, relative ease of access, and economy of use should not be overlooked by other institutions interested in this technology for distance education. The analogy here is using the railway company to transport goods rather than building your own railroad or highway system.

Secondly, from the agricultural field trial emerged confirming evidence that Telidon is an easy-to-use home service for otherwise inexperienced computer users. This confirmation was also received from the specific on campus instructional applications. Furthermore, while there were technical reliability problems, they are of sufficiently short duration or limited frequency as not to man the general acceptability of this service for home based information access to extension and distance education resources.

Two major hurdles, however, were identified in the agricultural field trial which are of intense importance for distance education. The first is the entry cost of the terminal. A Telidon dedicated terminal with decoder, monitor and 1200 bps modem costs in the vicinity of $2,000 and is a single purpose device. An IBM PC type microcomputer with the necessary software decoder, colour board and modem will cost in the vicinity of $5,000 although the educationally priced IBM PC Jr can be put in service with a Telidon configuration for less than $2,000. The microcomputer decision will, for many potential distance education users, be based on more broadly defined needs than for the use of Telidon access. With costs of this magnitude and the elusive low cost TV Telidon adaptor not yet in sight one is led to conclude that the population of home access terminals is not yet sufficient to warrant major investments in creating Telidon materials for distance education. "How will the students access the data?"

The second major hurdle is regional in significance and has to do with the availability and cost of telecommunication services. In parts of Western Canada telephone line charges established for Telidon by the Government operated telephone companies are extremely reasonable at 5 cents per minute in Manitoba and 6-8 cents per minute in Saskatchewan. In contrast, Eastern Canada has no such provision with regular voice tariffs costing at least 50 cents per minute. In addition rural phone lines are frequently party lines and the attachment of data terminals to such lines is not permitted. The arrangement Infomart has made with Bell Canada for a special INET rate of 25 cents per minute in dialing area 519 is a move in the right direction but its cost structure will inhibit all but short access sessions by the majority of individual users. The recent breakup of AT & T in the United States is resulting in rate increases for some institutionally provided distance education services which threaten the continuance of these services at least in present form. Since Canada is moving in a similar direction with telecommunications policy, potential applications of Telidon to distance education should examine this dimension carefully and then proceed with caution.

From the instructional applications reported it can be seen that there is potential for Telidon as an effective, user friendly and student accepted system. If the terminal problem and the costs of telecommunication can be resolved within a specific distance education project than our evidence suggests that Telidon is the only presently available practical method of displaying detailed graphic and textual information using a range of colour. It appears to provide intrinsic motivation to students when properly used.

The Guelph trials, unlike the educational television panacea projects of the 1960s, undertook to limit the scope of the application of Telidon to one or two specific aspects of the course. The project team worked with an educational philosophy which sought to emphasize student performance and output rather than teacher input. Most earlier media approaches have concentrated on information input, i.e. the more senses you use the more you can share in. Knowledge of what is expected, student practice and awareness of achievement through feedback on performance seem to the author to be the most fruitful areas for improving student learning. The Keller PSI method and other approaches which emphasize learner responsibility, especially in post secondary and distance education, have demonstrated that such improvement is achievable. These methods, however, are costly in providing intensive and frequent feedback and often result in compromises which reduce the immediacy of the feedback and hence much of its educational power. It is in this era where the Guelph trial concentrated its study of Telidon and where its initial success occurred.

Conclusion

The potential for Telidon in distance education lies more in the quality of the instructional design decisions than in the technology. This has always been the case with educational media but the novelty of another system can blue one's vision of what comes first, purpose and plan or tool. There are many existing forms in which course content for distance education can be delivered. The test, the audiocassette, printed or film slide illustrations, all can deliver content at a fraction of the cost of Telidon or other computer based systems. What they cannot do as effectively nor as effeciently is provide students at a distance with frequent short tests of learning achievement and immediate feedback. It is in identifying similar limited segments of distance education delivery where Telidon can make a useful contribution.

NOTE Based on the difficulty of serving larger numbers of students on campus from a distant database, the University of Guelph and Tayson Information Technolgy have developed a standalone IBM PC based system, VITAL (Videotex Integrated Teaching and Learning System for Education and Training).

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MEDIA NEWS

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theory. As editor of that journal, Winn is certainly in the position to assess trends in content. Perhaps prospective authors/researchers in the field will answer his call for more papers on the topics of analysis and design, as well as the social aspects of educational technology. Copies of this conference paper may be found in the ERIC document collection as ED 243 440, or ordered from the EDRS (ERIC Document Reproduction Service). Note that EDRS has a new mailing address: 3900 Wheeler Avenue, Alexandria, Virginia 22304. The Association for Educational Communication and Technology (and **ECTJ**) may be contacted at 1126 Sixteenth Street NW, Washington, DC 20036.

CALL FOR PROPOSALS

A major Secretary of State funded project is soliciting proposals from individuals interested in contributing secondary curriculum materials or research papers on transportation and communication. It is expected that, based upon proposals submitted, persons selected to contribute will include teachers, college instructors, university level researchers, and other writers and researchers.

Materials to be developed will discuss the social, political, cultural, and/or economic aspects of transportation, resource extraction transportation, broadcasting and new communication technologies. Much, although not all, of the work commissioned is expected to be regionally informed, nationally significant case studies.

Small research grants ($500-1000) will be available to selected individuals. Opportunities will be available for contributors to attend coordination meetings and/or workshops/symposiums in August, 1986, Expo year in Vancouver. The project will publish selected materials in either one of four teacher/learning booklets or a monograph. Selection of contributors will be made in January 1985.

For more information contact:

Dr. D.C. Wilson, Project Coordinator
Department of Social and Educational Studies
Faculty of Education
University of British Columbia
Vancouver, British Columbia
V6T 1Z5

Dr. R. Lorimer, Project Coordinator
Department of Communication
Simon Fraser University
Burnaby, British Columbia
V5A 1S6 □

ICEM CONFERENCE

Continued from page 18.

tain, Nigeria, Switzerland and the U.S.A.

The theme of this year's conference was "Educational Technology to Enhance Learning at a Distance". The program for each day consisted of a number of speakers followed by a symposium involving the speakers for that day. All of the program events were plenary session, with simultaneous translation between English and French being provided over headphones. A wide variety of topics was presented along the theme of Distance Education:

Think before you leap: How to reduce problems in Distance Education (Dr. Bill Winn, University of Calgary)

Extending opportunity: Telidon technology in Vocational Education (Amelia Turnbull, Alberta Correspondence School)

Educational Teleconferencing (Dr. G. Barry Ellis, University of Calgary)

Educational Technology to enhance learning at a distance: a systematic approach (Dr. Ron J. McBeath, San Jose State University)

New Realities in Educational Communications (Peter L. Senchuk, ACCESS Alberta)

Clearinghouse for Computer Software (Dr. S. Jim Thiessen, General Systems Research Ltd., Edmonton)

Technology in Distance Education: Improving Man's humanity to Man (Dr. John S. Daniel, Laurentian University)

By Making too many technological turns, one ends up going around in circles (Andre Hebert, University of Quebec)

The TV Ontario Academy on Computers in Education - a Canadian distance-learning system: Bits and Bytes (Don Robertson, TV Ontario)

Distance Education: the Nigerian experience (Francis Z. Gana, Ministry of Education, Lagos)

Format: Canada's National audiovisual information system (Donald Bidd, National Film Board, Montreal)

Satellite Communications: Past Present and Future. (W. Terry Kerr, Department of Communications, Ottawa)

Telidon: its use in Distance Education (Dr. Robert A. Abell, Alphatel Systems, Edmonton)

Among the many AMTEC members attending the 1984 ICEM conference were president Bill Hanson, immediate past-president Barry Brown and president-elect Ed Crisp. President Bill addressed the session on the morning of the second day of the conference, bringing greetings on behalf of AMTEC and describing its function to the interested delegates.

The chairman of the ICEM 1984 Conference was Hans Kratz of Alberta Education. (Many will remember him as chairman of the highly successful AMTEC Conference held in Edmonton in 1979.) Hans took care of every detail including the weather, which was perfect. After this experience let us hope that the Council decides to meet again in Canada before too long. ICEM was founded in 1950 under the name of International Council for Education Films; the name was changed in 1966 to International Council for the Advancement of Audiovisual Media, and in 1980 to International Council for Educational Media. ICEM enjoys Consultative Status, type A, from UNESCO, through the International Film and Television Council, and maintains a secretariat in Paris, France. □

COMPUTER COMMUNICATION

Continued from page 9.

Holmberg, B. (1982). **Recent research in distance education**. Hagen: Zentrales Institut fur Fernstudienforschung.

March, J. G., & Olsen, J. (1976). **Ambiguity and choice in organizations**. Bergen: Universitets-forlaget.

Rekkedal, T. (1982). The drop-out problem and what to do about it. In J. S. Daniel, M. A. Stroud, & J. R. Thompson (Eds.), **Learning at a distance** (pp. 118-122). Edmonton: ICEE Publications.

Stewart, D. (1982). Counselling in distance education - An overview. In A. Tait, & D. Stewart (Eds.), **International Workshop on Counselling and Distance Education** (pp. 8-11). Milton Keynes: Open University/I.C.D.E.

Thompson, G. (1984). The development of the educational telephone network at the University of Wisconsin. **International Council for Distance Education Bulletin, 5** (2), 47-52. □

'ASSOCIATION des MEDIA et de la TECHNOLOGIE en EDUCATION au CANADA
ASSOCIATION for MEDIA and TECHNOLOGY in EDUCATION in CANADA

The Educational Media Producers and Distributors Association of Canada

L'Association des Producteurs et distributeurs du media d'education du Canada

The AMTEC Achievement Award Call For Nominations

The AMTEC Achievement Award is presented in recognition of outstanding ability in promoting the use or creative development of audio visual media in the classroom in the kindergarten, elementary, secondary, post-secondary or training environments. The successful recipient(s) will have made a significant contribution to the learning process employing audio visual media in the classroom.

The AMTEC Achievement Award is sponsored by the Educational Media Producers and Distributors Association of Canada (EMPDAC). The following are the general criteria for the Award:

1. The Award is in the form of an engraved plaque or plaques awarded annually by AMTEC at the National Conference.

2. The Award can be made to up to 5 recipients per year.

3. Nominations may be made by any member of AMTEC or EMPDAC. Nominations are made by the nominator submitting a letter to the AMTEC Achievement Award Chairman. The nominating letter and accompanying documents should indicate the following:

   a. The name, address and telephone number of the nominator and the nominee.

   b. A brief biographical sketch of the nominee.

   c. A comprehensive description of the nominee's contribution including:
      i. The purpose of the contribution
      ii. Implementation and timeline details.
      iii. The utilization strategy and/or creative development of the contribution.
      iv. Evaluation of the success and/or results of the contribution.

   d. Names, addresses and telephone numbers of the three individuals who are familiar with the nominee's contribution and who are willing to act as references for the nominee.

4. The AMTEC Achievement Award's Committee is appointed by the AMTEC Board and consists of at least three persons one of which will be a present member of the AMTEC Board.

Nominations for AMTEC's 1985 Achievement Award should be forwarded with the documentation noted above to:

Danielle Fortosky, AMTEC Achievement Award Chairman
Director of Educational Television Production
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

L'ASSOCIATION des MEDIA et de la TECHNOLOGIE en EDUCATION au CANADA
ASSOCIATION for MEDIA and TECHNOLOGY in EDUCATION in CANADA

On Behalf of

THE COMMONWEALTH RELATIONS TRUST

Commonwealth Relations Trust Travelling Bursary: Call for Applications

Canadians working in educational media are fortunate this year in being able to apply for a bursary from the Commonwealth Relations Trust, which was established by a private donation in the 1930s to promote a common understanding and a unity of ideals between the United Kingdom and other countries of the Commonwealth, through the extension of human contacts and first-hand experience of current conditions. AMTEC has been asked to sponsor an annual award for educational broadcasters which pays for a three-month study visit to the U.K., beginning in the spring of 1985. Other bursars visiting the U.K. will be broadcasters, adult educators, trade unionists, and librarians from several Commonwealth countries.

The Bursary will provide:

a) one adult return fare, by the most direct and economical means, to the U.K.;
b) allowances for local travel and other out-of-pocket expenses;
c) daily maintenance allowance on a generous scale for a period of three months from date of arrival.

Candidates should:

a) offer assurances that they will not suffer financial loss as a result of taking up the award, but will continue to receive a salary;
b) be communicators in their profession and in a position to influence opinion in their field of endeavour;
c) have a reasonable level of education in order to make the best use of their stay in the U.K., and be able to act on their own initiative;
d) not have been previously to the U.K., except for a short holiday visit.

Applications should include:

a) a short statement of the applicant's proposed objectives in applying for a bursary, what she or he hopes to obtain from the experience, and what they feel they can contribute to the aims of the Trust;
b) the special area or areas of study to be pursued;
c) any known contacts in the U.K.;
d) previous travel abroad, including any visit to the U.K.;
e) address to which correspondence should be sent;
f) a full curriculum vitae, including education and work experience, with dates.

The award winner will be expected to prepare his or her own program, obtaining advice about whom to visit, well in advance of his or her arrival in the U.K. by the end of April, 1985. A ten-page report must be submitted on conclusion of the visit.

If you would like to apply for this award, please forward the documentation described above to:

Merrill Fearon
Chairman, AMTEC Committee for the CRT Bursary
c/o The Provincial Educational Media Centre
7351 Elmbridge Way
Richmond, British Columbia V6X 1B8

Deadline for Applications:
Friday, May 24, 1985

PRESIDENT'S MESSAGE

Continued from page 3.

butors have made steady progress in developing the Journal over the past three years. The development of regular columns, a consistent and attractive image, the guest editor concept, and the combined appeal of a refereed academic journal and applications publication are significant developments for CJEC. Similarly too, AMTEC '84 Chairman, Ed Crisp and co-chairman Ken Everest and his network of hardworking colleagues put together an excellent conference in London, Ontario. **AMTEC '84** successfully ran several well attended and useful pre-conference workshops focusing on the micro-computer in education. Ed and his conference planning team capped off their success in London with a comprehensive conference evaluation document. This document and its recommendations, combined with that completed by Gerry Brown from **AMTEC '82**, will form the basis of the revised **AMTEC Conference Handbook**, which will no doubt be invaluable to future conference planners.

Yes Virginia, there is an AMTEC! And yes Virginia, there will be an AMTEC! Recent initiatives on the part of the Board members and AMTEC members hold the definite possibility of development and growth for the Association and its membership.

Bob Graham has recently accepted the position of **Publicity Chairman** for AMTEC. Bob's experience in the promotion of AMTEC '84 will serve him well in his new role with the Association. Bob has presented to the Board a comprehensive plan which will begin with an internal publicity program and culminate in an outreach initiative, providing AMTEC and its members with new contacts and relationships. In partnership with that, Don Bates has accepted a complimentary Chairmanship of **Membership Promotion** for the Association. Don's assignment is to promote awareness and regard for the Association, with individuals, institutions and agencies beyond AMTEC with a view to their taking out a membership and participating in Association activities.

Our **Awards System**, chaired by Mal Binks, has been passed to Dave McDougall for further development and growth. Similarly, the **Media Festival** Liaison Chair, performed by Ross Mutton for the past three years has been assumed by Greg MacDonald for further development. In particular Greg's work on our growing relationship with the Canadian Education Association will be of considerable benefit to our Association.

The AMTEC **Ideas Committee**, conceived of by John Morrow and now headed by Dave Bell is an exciting project which when completed will be a valuable resource for AMTEC members. This continuing compendium of resource development ideas from the overhead transparency to micro-computer software will prove to be a valuable addition to AMTEC publications.

AMTEC is also active internationally. We have successfully developed a working liaison relationship with the **Association for Educational Communication and Technology**. AMTEC now has an official position on the AECT Advisory Council and regularly exchanges presidential attendance at our respective national conferences. This relationship will hopefully develop into a number of mutually beneficial endeavours. AMTEC has recently had an international presence at the **International Council of Education Media** Conference held this year in Banff, Alberta. As President, I had the opportunity to address our international guests bringing greetings from AMTEC and also acquainting them with the activities and thrusts of our national educational media and technology association. In addition, both our past President Barry Brown, and our President-elect, Ed Crisp, were present to encourage and affirm our national and international relationships.

This fall, AMTEC participated in a **copyright symposium** in Vancouver, hosted by the **Pacific Instructional Media Association** and its President, Gary Karlsen. The accompanying articles in this issue of the Journal provide an opportunity for AMTEC members across Canada to benefit from this important event. AMTEC also was invited to become a member of the **National Caucus of the Inter-Provincial Association for Telematics and Telidon**. The National Caucus is a group of representatives from Canadian association who have an interest in the developments in telematics. IPATT is an experimental advisory body to the Federal Department of Communications, which is becoming increasingly involved in the emerging technologies as they are applied in education. It is hoped that this relationship will bring AMTEC and its members closer to federal developments in the educational technology field.

AMTEC is establishing a dialogue with other associations and agencies. The **Canadian Association for Distance Education** has much crossmembership with AMTEC and could embark on a number of mutually beneficial initiatives involving our Journal and our national conference. Similarly the **Canadian Learning Materials Centre** in Halifax is another agency that is of interest to AMTEC members. Their plan for a national seminar on educational technology, with a view to Canadian content in software, could easily involve AMTEC formally as an association and several AMTEC members. The **Council of Canadian Education Ministers** is also developing a project to establish a Canadian clearinghouse for provincially evaluated computer software. Work on this CCEM project is progressing and when completed will definitely be of interest to AMTEC members.

The rapid developments in micro-electronics and telecommunications are expanding the communication horizon as well. The AMTEC Board in currently considering an initiative to establish a cross-Canada information/application data base and electronic bulletin board for professionals working in the educational media and technology field. This project could take the form of a companion system to AECT's **Tech Net** in the U.S. or a partnership with another Canadian system. This project could dramatically improve communication amongst educational media and technology professionals in Canada.

Plans are currently underway for AMTEC to host a **Symposium on National Issues in Educational Technology** associated with the World Congress on Educational Technology planned for 1986 in British Columbia. This very exciting venture could prove to be one of the more significant national policy advisory roles for our Association.

Many of these new developments will become highlighted at our **National Conference in Calgary** this June and in upcoming issues of the **Canadian Journal of Educational Communication**. Bob Sivertsen, the AMTEC '85 Conference Chairman and his planning committee are well on their way to host our membership this June. Bob Bernard, **CJEC**'s editor appointee will assume his new duties as editor this fall.

In addition to the above initiatives one of the more subtle but important developments is increasing the effectiveness of communication within the Association. This article is one of a number of communication thrusts that we hope see established as a regular part of AMTEC business. Others include the appointment of Chairmen of Membership Promotion and Publicity noted above and a regular and consistent communication between the Board of Directors and AMTEC Project and Committee Chairmen.

Yes Virginia, there is an AMTEC! The formula for making all of the above activities work is a committed Board of Directors, enthusiastic and hard working committee and project chairmen and an involved membership. Accompanying this article is a complete listing of names and addresses of AMTEC Board Members and Chairmen. As your President, I encourage you to make contact with one or more of these people to contribute to a developing and responsive Association. Together we can make a difference.

W.R. HANSON
AMTEC PRESIDENT 1984-85
November 30, 1984

□

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Calgary, Alberta
T2N 1N4
Bus. (403) 284-5287

CONNECTIONS: Leadership, Technology and Learning

PLAN NOW to

- attend the 1985 AMTEC Conference from June 16 to 19, 1985 at The University of Calgary
- act on preliminary pre-Conference and program information and a special "early-bird" registration discount offer, to be mailed to you in January 1985
- make the **connections** within or between the three main program tracks of the Conference themes
- attend a special AMTEC Rocky Mountain Whoop-up
- see the best of Canada's educational media and software, with AMTEC, Panasonic and CEA awards presented at a super awards banquet
- browse through exhibits of educational product and service from Canada's leading suppliers.

BE REWARDED by

- developing old and new **connections** with our colleagues from across Canada
- professional development and challenge in your present and future job environment
- experiencing first-hand good old-fashioned western hospitality.

For more information, and to ensure you are on our mailing lists, please contact:

Mr. Bob Sivertsen, AMTEC '85 Chairman
Director, Department of Communications Media
The University of Calgary
2500 University Drive N.W.
CALGARY, Alberta T2N 1N5 (403) 284-5285

AMTEC MEDIA FESTIVAL

In conjunction with the annual AMTEC Conference, awards will be presented for excellence in the production of instructional media materials. A panel of judges may grant Certificates of Merit for productions meeting pre-established criteria. At the discretion of the judges, one Award of Excellence may be given in each category and class. All entries will receive a written critique from the panel of judges.

A selection of entries will be shown at the Conference. There will be an Awards Banquet during which the presentation of awards will be made.

RULES OF ENTRY

1. This form, or photocopy, must accompany each entry. AMTEC cannot assume any responsibility for material which is received without this form completed as indicated. Each institution is limited to a total of three entries, but not more than one in any category. Schools may submit up to three student entries, but not more than one in any category. Ensure that all materials and components are clearly labelled. Submit one entry form per entry.
2. Production must reach the Festival Committee by April 30, 1985.
3. PAY CLOSE ATTENTION TO THE "Target Audience and Objectives" statement on the reverse. Judging will be based on your statements and whether, in the view of the judges, the program meets its objectives.
4. Productions must have been completed after January 1 of the year before the conference.
5. ENTRY FEE — There is a $10.00 entry fee for each submission. Please make cheque or money order payable to: AMTEC '85 Media Festival.
6. The film category includes 16mm and Super 8mm films mounted on open reels. This category does not include kinescopes or videotapes or other films made by means of electronic processes.
7. The Classification is subject to the approval of the Festival Committee.
8. The judging committee may award up to three Certificates of Merit in each category by class to entries which meet the pre-established criteria.
9. The judging committee may present an Award of Excellence for each category by class. The Awards of Excellence will not be presented if in the view of the judges no production merits this distinction. Awards of Excellence will be screened at the CEA Conference in September 1985. Panasonic Best Video Awards will be presented for the best entries in educational, professional and institutional categories.
10. Each production will be evaluated on its success in meeting the stated educational purpose or objectives as well as on its excellence of production.
11. The Media Festival Awards will be presented at the AMTEC Conference.
12. Entries must be shipped to: **Ron Robertson, Chairman**
    AMTEC '85 Media Festival
    c/o ACCESS NETWORK
    295 Midpark Way S.E.
    CALGARY, Alberta, Canada T2X 2A8

ENTRY FORM

CATEGORY
(circle one)

1. 16mm or Super 8 mm (open reel) *See Rule no. 6 on reverse
2. Videotape (1/2" or 3/4" cassette)
3. Sound/filmstrip (audio cassette)
4. Sound/slide (audio cassette) (if possible, please enclose a videotape copy)
5. Microcomputer CAI/CAL/CML Programs*
6. Microcomputer Utility/Application Programs*
   *(Apple, Atari, Commodore, IBM Personal, Radio Shack and Texas Instrument families)

CLASS
(circle one)

1. Individual School
2. School System
3. Post-Secondary
4. Government Media Agency
5. Student (as part of course)
6. Commercial Producer
7. Business/Industry
8. Other

A SEPARATE FORM MUST ACCOMPANY EACH ENTRY

PLEASE TYPE

TITLE _____

LIST COMPONENTS _____

LIST EQUIPMENT NECESSARY (Manufacturer & Model) _____

SOUND/SLIDE or SOUND/FILMSTRIP CUEING SYSTEM _____

RUNNING TIME _____ DATE OF PRODUCTION _____

NAME OF PRODUCING INSTITUTION(S) _____

PRODUCERS _____

PERSON(S) SUBMITTING ENTRY – NAME(S) _____ TITLE _____

ADDRESS _____ TELEPHONE NO. _____

_____

_____

NAME TO APPEAR ON AWARD _____

TARGET AUDIENCE & OBJECTIVE OF PROGRAM (if necessary attach additional material) _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Return Address _____

Will pick up material at Conference ☐ By whom _____

Return by mail ☐

Excerpts of winning entries will be transferred to videotape for the awards presentation and for the AMTEC Archives.

I accept the terms as stated in the Media Festival Rules of Entry _____
Signature & title of entrant

READ CAREFULLY THE MEDIA FESTIVAL REGULATIONS ON THE BACK
VERSION FRANCAIS DISPONIBLE

CALL FOR PARTICIPATION/PAPERS

AMTEC '85 will be held in Calgary, June 16-19, 1985, and will take as its theme:

CONNECTIONS: Leadership, Technology, and Learning

Within the overall theme there will be a number of foci, including:

- o copyright
- o distance education
- o interactive video
- o instructional design
- o media and learning

Participants are encouraged to expand upon the theme and foci in submitting a one-page Intent to Participate statement that explains their ideas for presentation and relates them to the theme. Proposals will be evaluated upon their scholarly merit and relevance to the theme and foci of the meeting. Those having proposals accepted will be notified by February 28.

NOTE: A final paper must be prepared and submitted to the Program Committee prior to June 1, 1985. Failure to do so may result in cancellation of the presentation.

Papers accepted for presentation at AMTEC '85 will be forwarded to the Canadian Journal of Educational Communications (CJEC) to be considered for publication in that journal.

_____

Return by February 15, 1985 to:

W. Bruce Clark
AMTEC '85 Program Committee
726 Education Tower
University of Calgary
2500 University Drive NW
Calgary, AB T2N 1N4

YES! I want to participate in the 1985 AMTEC Annual Meeting. I have attached a one-page proposal explaining my ideas for a presentation relating to Connections: Leadership, Technology, and Learning.

Name: _____

Business Affiliation: _____

Mailing Address: _____

_____

_____

City: _____ Province: _____ Postal Code: _____

Tentative Title: _____

_____

_____

Format: ___30 min ___60 min ___symposium

(If a symposium, include names & addresses of participants, titles of all papers on separate sheet.)

Do you know someone who should join AMTEC?

Do you have colleagues who have an interest in media and technology in education?

This year AMTEC is beginning a publicity program to boost our membership. We need your help.

For more information, contact Donald Bates, Publicity Chairman, c/o The Grey County Board of Education, Box 100, Markdale, Ontario, N0C 1H0

MEMBERSHIP

AMTEC MEMBERSHIP APPLICATION

ASSOCIATION for MEDIA and TECHNOLOGY in EDUCATION in CANADA
L'ASSOCIATION des MEDIA et de la TECHNOLOGIE en EDUCATION au CANADA

NAME _____

TITLE _____

ADDRESS _____

_____

_____ Postal Code

TELEPHONE — Bus. ___ Area ___-____ EXT. ____

Res. ___ Area ___-____

PLEASE COMPLETE THIS FORM AND MAIL WITH YOUR PAYMENT TO:

AMTEC
P.O. Box 1021
Station B
Willowdale, Ontario
M2K 2T6

TYPE OF MEMBERSHIP
(please check one)

- ☐ Student . . . . . $ 20.00
- ☐ Individual . . . . $ 40.00
- ☐ Institutional . . . $ 60.00
- ☐ Commercial . . $110.00

CANADIAN JOURNAL OF EDUCATIONAL COMMUNICATION

- ☐ is available to non-members on a subscription basis — four issues per year . . . $40.00

SPECIAL INTEREST GROUPS

- ☐ Media Utilization
- ☐ Instructional Developers
- ☐ Media Teachers
- ☐ Media Managers
- ☐ Microcomputers in Education
- ☐ Other: _____

WORK ENVIRONMENT

- ☐ Elementary
- ☐ Secondary
- ☐ College
- ☐ University
- ☐ Business
- ☐ Government

Canadian Journal of Educational Communica
Vol. 14 No. 2
March, 1985
ISSN 0710-4340