

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

1043
17482
V. 14
2
1985
Educ. Pr.

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

PERIODICALS
EDUCATION LIBRARY

LIBRARY OF ALBERTA
MAY 2 1985

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 _____
TELEPHONE - Bus. _____ Area _____
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

BUY CANADIAN — 16mm Filmosound Projectors and Specialist Overhead Projects are MADE IN CANADA



Bell & Howell 16mm Filmosounds meet the professional standards demanded by today's audiences. Bell & Howell has the top line of school-proven performers.

Show your story BIG with a Bell & Howell Overhead Projector. There is a model to suit every need in the new "Canadian Series."

The ultimate in Sound/Slide Projectors is the Ringmaster II. The high-technology controlled system has random access and automatic focus.



PROJECTION UNLIMITED!

The Bell & Howell "Educator Series" Cassette Tape Recorders are chosen by more school boards to do a great sound service because of their unique and quality design.

Bell & Howell specializes in education and training! The Language Master Cassette Reader, Projection Screens and Mobile Projector Tables plus numerous accessories are available to assist you in your presentation needs. Contact us for further information.



YES, I would like more information:

- Demonstration
- Quotation
- Literature

Product area(s) which interest me:

- 16mm Filmosound
- Ringmaster II Sound/Slide
- Overhead Projectors
- Cassette Recorders
- Other-

Name _____

Institution _____

Street _____

Town _____ Prov. _____

Phone No. _____ P. Cde _____


BELL & HOWELL

AUDIO-VISUAL PRODUCTS DIVISION

230 Barmac Dr.
Weston, Ont.
M9L 2X5

CONTENTS

FEATURE ARTICLES

Major Field Techniques & Instruction Levels by Canadian Instructional Developers
Tom Bennett 6

A Consortium for Educational Audio Teleconferencing in British Columbia
William Robertson, et. al 8

Preparing Personnel for School Media and Library Service Positions;
Some Observations
Marvin E. Duncan 10

GENERAL ARTICLES AND COLUMNS

Editorial 3

Media News 4

Book Reviews 14

Microware 15

From the Media Periodicals 12

Mediography 13

Editor
Denis Hlynka
University of Manitoba

Associate Editors
Richard Schwier
University of Saskatchewan
Robert Bernard
Concordia University
Terry Kolomeychuk
National Film Board

Editorial Review Board
Barry Brown
University of Saskatchewan
William Winn
University of Calgary
Patricia Dolan-Lewis
Windsor, Ontario
Tom Bennett
William Beaty School
Parry Sound, Ontario
Jack Livesley
TV Ontario

Computer Microware
Len Proctor
University of Saskatchewan

Design
Richard Holowachuk
Foam Lake Composite School, Sask.

Cover
Vern Hume
University of Manitoba

Columnists
Nancy Lane
University of Manitoba
Richard Ellis
University of Manitoba
David Thirlwall
University of Manitoba

Proof Reader
Sid Greenstone
Manitoba Planetarium
Michelle Scott

Printers
Christian Press
Winnipeg



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. All articles are copyrighted by AMTEC and may be reproduced for nonprofit use without permission provided credit is given to CJEC. CJEC is indexed in the **Canadian Education Index**. All correspondence to the editor should be addressed to
Dr. Denis Hlynka, Editor CJEC
Faculty of Education
University of Manitoba
Winnipeg, R3T 2N2



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 1986. 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, 1986. 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

29 Reasons why you should attend the AMTEC '85 Conference in Calgary

by D. Hlynka

From June 16-19, 1985. AMTEC will hold what might best be described as the 15th Annual National Conference on Educational Technology. I say 15th, since, to the best of my knowledge, the "first" was held in Edmonton, in the summer of 1971. (However, historians of our association may be able to give more precise data. Incidentally, if anyone out there can send me the locations of the other thirteen conferences, we will list them in the next issue of CJEC.)

Once again the conference promises an exciting cross section of papers, workshops and discussion sessions which illustrate the state of the art of our field in our country. Here are 29 good reasons for attending.

Reason #1. The first keynote speaker will be Frank Ogden, noted entrepreneur, consultant, futurist, and information specialist. Ogden is the epitome of Toefler's electronic cottage. His BC based houseboat is equipped with some \$100,000 worth of telecommunications equipment, with which he can monitor information from around the world. His keynote presentation for AMTEC '85 is titled THE COMMUNICATIONS ELITE. He will address the question of Canada's role in the world of technology . . . are we a leader or a follower? Drastic changes will occur in the immediate near future, says Ogden, with important implications.

Reason #2. Dr. Norman Wagner, president and vice chancellor of the University of Calgary will be the second-day keynote speaker. His presentation will focus on what is new in Alberta, particularly the Canadian Center for Learning Systems.

Reason #3 is Dr. David Merill, University of Southern California. The title of his presentation is "Educational Software: What Should You Get for \$39.95?" The annotation available to me says "Educational software is slim in content and quality. What characteristics contribute to product quality? What constitutes instructionally effective courseware? How much instruction should you expect on a disc? Through a series of program segments, characteristics which comprise

poor and high quality instructional software will be illustrated and described."

Reason #4. Dave Marles will present on "Logo: Robotics in the Elementary Classroom."

Reason #5. Rod McConnell will provide an overview of laserdisc technology, what it is, its application, where it is going in education and training.

Reason #6 is AMTEC's well known and well established MEDIA FESTIVAL.

Reason #7 is a series of first time INDUSTRY SEMINARS.

Reason #8. A panel on copyright with Frank Keyes and Gaylord Watkins. Frank Keyes is copyright director of the Department of Communications.

Reason #9: Bob Allan on COMAL

Reason #10: Barry Eshpeter on Visual literacy.

Reason #11: Kathryn McNaughton on "Home Made Education: Training to Family Day Care Providers."

Reason #12 is Ben Habelton on "Management for media managers."

Reason #13 is a description of the historical background of a co-operatively developed computerized film/media booking system presented by Cal Annis and Myrna Girardi.

Reason #14 is June Landsburg and Mike Reddington talking about the Knowledge Network.

Reason #15 is Dr. Richard Lewis panel on television and children.

Reason #16 is a discussion on satellite technology for the Access Network by Dr. Michael Plumb and Ian James.

Reason #17 is a presentation which documents the implementation of CAI delivery of a course to undergraduate students with examination of constraints, set up, maintenance, evaluation and revision procedures. Titled "Delivery of a University Course in Special Education by Computer Assisted Instruction", the presentation is by Dave Mappin and Katy Bonar.

Reason #18 is Glen Manyluk on "School media resource centers."

Reason #19. Dr. Joan McLeod will review recent research in brain-mind development, and its implications for education. The title is "Mind and Brain: A Search for Unity."

Reason #20: Edna Bakken, Louise Beerman, and Dorthy Harvie on implementing OPAC (Online Public Access Catalogue.)

Reason #21. "Dialog and Knowledge In-ded: Online Searching." by Marcia Olmstead. A description and demonstration.

Reason #22. "The Department of Communications Development of Technologies in Education." Jean-Jacques Rousseau is tentatively scheduled to represent the DOC.

Reason #23. Jim Langley on "Television: A Positive Approach." The influence of television on young people is becoming more and more pronounced. Here are some ideas for teachers to use in the classroom about critical viewing, lesson planning, and the use of network TV.

Reason #24. Tom Rich will outline the development of "A Canadian Database of Educational Computer Software Information."

Reason #25. Lonnie Springer will discuss "Computer Literacy: A Unique Approach to Teacher Inservice and Implementation."

Reason #26. Dr. Hanna Mayer will explore the techniques of needs assessment.

Reason #27. Roy Wilcox will present "The complete mediated school."

Reason #28. Dr. Bill Winn will provide the conference summation, at the concluding luncheon. His title: "Future Connections."

Reason #29. The Tuesday evening Rocky Mountain Whoop Up Rodeo and Barbeque.

The above information represents only the initial planning of the conference committee. Other papers and presentations are yet to be announced. For more information, contact Bob Sivertsen, Director of the Department of Communications Media, University of Calgary, 2500 University Drive NW, Calgary T2N 1N4, or telephone at 403-284-5285.

May AMTEC '85 be the best yet! □

Comprint 85 Conference

The Conference

Comprint '85 is dedicated to various aspects of **Computer aided technologies** from industrial through scientific, managerial and educational applications.

Comprint '85 will be held at the Montreal Convention Centre from **September 9-12, 1985**. Tutorials will be offered on the first day of this international conference and keynote speakers will be invited to address topics of interest. A major exhibition, centred around conference theme, will be held.

Areas of Interest

Comprint '85 will embrace the theory, design and implementation of **Computer aided technologies**. Subject areas include:

- Robotics
- Computer Aided Manufacturing
- Computer Aided Industrial Operations
- Advanced Software for Industrial Systems
- Computer Assisted Education
- Computer Graphics
- Computer Communications
- Man Machine Interfaces
- Computer Aided Decision Making
- Computer Aided Transportation systems

Comprint '85
P.O. Box 577
Desjardins Postal Station
Montréal, Québec, Canada
H5B 1B7

CLA Annual Conference

Alberta Bound!

Information is Power: Yesterday's Prophecy, Today's Reality, Tomorrow's Economy

Whether you are the type who plans yesterday today, or who has everything neatly arranged for next year, be sure to pull out your date books and pencil in the following dates: June 13 - 18, 1985. At this time, the 40th Annual CLA/CSLA Conference will be held in Calgary. Adrienne Elliott of the Calgary Board of Education has chaired a group of capable and eager members of CSLA who have worked hard to put together a Conference program of special interest to teacher-librarians. The

committee has also been conscientious about seeking speakers of excellence who will appeal to other groups in attendance at the conference. There are numerous, exciting sessions.

Just a sample,
Ron Ghitler:
Tolerance and understanding.
Jame H. Marsh,
Editor-in-Chief,
Hurtig Publishers:
The Making of the CANADIAN ENCYCLOPEDIA.
Geoffrey Chapman,
of Australia: Parallels between school library programs in Canada and Australia.

Other programs include experts speaking on the television production for children; the gifted child and the library; integrating school library programs; the reluctant reader; program planning; integrating music and drama through the resource center; co-operative program planning; automated services for school libraries; and one of the most popular sessions at CSLA: a well-planned tour of Calgary schools with a wide choice for your special interest.

And finally: the conference takes place in the center of Calgary with access to many shops, museums and night spots. Plan to pack some casual (Western?) gear. The Social Committee has worked up a super series of events for your entertainment. Please watch for future details or contact the Canadian Library Association.

40th CONFERENCE-CALGARY,
ALBERTA, JUNE 13-18 1985

Society, Technology and Development Conference, India

A conference on "Society, Technology and Development" was held at the University of Rajasthan from Feb. 10-15, 1985. The Shastri Indo-Canadian Institute sent several Canadian scholars to present papers at the conference, including Dr. Glenn Cartwright, McGill University.

Ascrt

The Association for the Study of Canadian Radio and Television sees an awakening recognition on the part of scholars and the public at large of the importance of broadcasting in Canadian cultural life. The Association's activities

encourage this interest. We note with concern at the same time that the programs, documents and artifacts of our broadcasting heritage continue to be at risk because of their fragile nature and because of a lack of understanding of their importance. Moreover, those materials which are safe from harm are not always accessible to students of broadcasting and other would-be users.

Objectives

The aims of the Association, therefore are:

- To ensure that broadcast materials are preserved and accessible, and
- To encourage their reuse and study.

Membership

Broadcasting has been a crucial element of Canadian experience in the 20th century, touching the lives of all Canadians, and drawing upon the skills of many professions. The Association recognizes this, and encourages the active involvement of a wide spectrum of interests. The Association, therefore, brings together a broad range of people concerned with the preservation and study of Canadian broadcasting. These include the creators of programs (writers, announcers, actors, technicians), the preservers of programs, broadcast artifacts and documents (archivists, librarians, museologists, collectors), and those institutions and individuals who wish to reuse or study broadcasting materials (teachers, scholars and broadcasting organizations). All these groups are represented on the Association's rolls.

NOTE: Cheque or money-order payable to:

Association for the Study of Canadian Radio and Television
C/O Centre for Broadcasting Studies
Room N-312, SGW, Concordia University
1455 de Maisonneuve West
Montreal, Quebec
H3G 1M8

Fifth Annual Conference on Teaching and Learning in Higher Education

Sponsored by
The Society for Teaching and Learning in Higher Education and The University of Ottawa
Ottawa, Ontario June 16-19, 1985

We invite you to participate in the Fifth

Annual Conference on Teaching and Learning in Higher Education, June 16-19, 1985. University of Ottawa.

The major goal of this conference on teaching and learning is to provide professors, educational researchers, administrators, and instructional developers with a forum in which to discuss ways and means of improving the quality of teaching and learning in postsecondary education.

This fifth annual conference will continue the tradition of stressing panel and round-table discussions, workshops, poster sessions, seminars, and other types of interactive presentations. Research-based presentations are appropriate only if they have *practical* implications for the improvement of higher education and can be communicated in an interactive, non-lecture format.

Appropriate topics include, but are certainly not limited to, the following:

- Inservice training for teaching assistants.
- Successful curriculum development in higher education.
- Role of the department chairperson.
- Computer-assisted instruction.
- Strategies for teaching problem solving.
- Peer assessment of teaching.
- The changing role of instructional-development services.
- Theory and praxis in teaching and learning.
- Student evaluation of teaching.
- Continuing education: key to survival?
- Teleconferencing: panacea or menace?
- Training for administrative tasks.
- Student characteristics and success in postsecondary education.
- Encouraging independent learning
- Lifelong learning and higher education
- Simulations and games.
- Increasing cost-effectiveness in educational development centres.
- Contact learning.
- Computer literacy.
- Educational development in the health sciences.

Program Highlights

Ian Winchester, OISE, Howard Woodhouse, Western Ontario, "The Dramatical in Education: Teaching as Art Rather than Technique." Panel discussion.

Trien T. Nguyen, U. of Waterloo, "Computer-Assisted Instruction in Undergraduate Microeconomics".

G. Pernuiak, J. Picard, E. Rubin, Athabasca University, "Issues in University Distance Education: An Open Panel Discussion."

R.E. Hartley, Western Ontario, "Toward CAI Programs that Really Work."

Don McIntosh, U. of Guelph, "Interactive Video for Teaching Therapy Skills".

Don Willison, McMaster, "A Critical Review of the Use of Telecommunications in the Continuing Education of Health Care Professionals".

Donald McDonell, V. Sistek, R. Leblanc, U. of Ottawa, "Teaching by Telephone". Panel discussion.

Please return your registration form, along with the conference and accommodation fees, to:

Conference Secretariat
c/o Patrick Babin,
621 King Edward Avenue,
Ottawa, Ontario K1N 6N5 Canada

(613) 231-2350

A Canadian youth and children's channel

As a result of letters of intervention sent by groups and organizations from across the nation, the CRTC has scheduled hearings throughout the country to give all those who wish to speak to the question of a new TV channel devoted to children and youth, an opportunity to do so.

After the National public Hearings are completed, the National Film Board is prepared to present its application for license to CRTC submissions committee. The NFB is proposing a new channel, to be called YOUNG CANADA TELEVISION/TELE-JEUNESSE CANADA, devoted to children and youth (ages 2-24), which would contain programmes that are non-racist, non-sexist, non-violent, with production and programming input from youth and owned and programmed by a newly created nationally representative independent non-profit Foundation.

The Foundation will be much like the Children's Television Workshop - the people who brought you "Sesame Street" - combined with PBS - the American public television network, or an organization in Australia which pro-

grams material for young people. The foundation would have a small staff of acknowledged experts in this field of television and film programming, whose jobs would be to develop and oversee the production of shows for the network.

Presently, interested parties are being invited to participate in the formation of Provincial Advisory Councils to the Young Canada Television Foundation.

For further information please contact your nearest NFB office:

or
Young Canada Television/Tele-Jeunesse Canada
c/o National Film Board of Canada
P.Bo Box 6100, Station "A"
Montreal, Quebec H3C 2H5

Phone: (514) 284-9249
Attn: David Balcon, Project Manager

World Congress on Education and Technology

The World Congress on Education and Technology will be held in Vancouver, Canada from May 22-25, 1986. Planned separately as an initiative of the British Columbia School Trustees Association, the World Congress will serve as a major complement to the activities of EXPO 86, the Vancouver World's Exposition.

Attracting 10,000 participants from around the world to discuss the impact of the new technology on the various education systems, the many cultures, and on global society in general, the World Congress is the first conference of its kind to address the issue of technology in such a broad context. The World Congress on Education and Technology is designed to:

- familiarize participants with international developments and ideas related to education, culture and technology
- judge the impact that technology has, and will have, on the quality of life
- develop a rationale and sense of purpose for the evolution of technology in the classroom
- examine ethical and philosophical issues related to the application of technology
- study projects and innovations regarding the application of computers and communications devices in educational institutions
- test current educational policies and practices against new criteria and stan-

Continued on page 17.

Major Field Techniques & Instruction Levels by Canadian Instructional Developers

by Tom Bennett

Introduction

In a 1981 issue of *Media Message* (10:3;16-23), a survey instrument was printed in order to identify which instructional development field techniques were being utilized to a significant degree by Canadian developers and to what extent they were being employed. Further, the researcher wanted to discover which techniques were **unfamiliar** to the population, which techniques were perceived as being **valuable** to the field of ID, and which ones were actually being **taught** to a significant degree in Canadian institutions of learning.

Aside from the above major considerations, the study attempted to ascertain if there were correlations between the level of technique use and employment areas of the survey population, between the level of technique use and the educational training of the surveyed developers, and between the level of technique use and the number of years of teaching experience of the surveyed developers.

Finally, the study culminated in a matching of the resulting major techniques (as perceived by the survey population), with various functions of a recognized instructional development model. This latter consideration resulted in a very successful matching of the major or **power** techniques with the thirteen functions of Gentry's **Management Framework Model**.¹ Realising that the results of this matching process would be best reported as distinct from the above survey considerations, the writer will focus on the Management Framework match in a subsequent article.

Dr. Tom Bennett is with the William Beaty School in Parry Sound, Ontario. His Ph.D. was from Michigan State University.

Survey Population

The survey population of the study was composed of members of the Association for Media and Technology in Education in Canada (AMTEC). Specifically, the population comprised those members of the AMTEC mailing list who were **named** and connected with an educational institution or educational-interfacing organization such as TV Ontario and ACCESS Alberta. It was reasoned that such members of AMTEC would have the requisite training and employment position that would most likely require the practice of ID techniques. After being originally published in *Media Message*, the survey population was targeted by a personal mailing of the instrument and followed by two subsequent mailings. The final return was composed of 112 responses, which represented a total of 37.33%, a significantly reliable return for surveys of this nature. Computer analysis of the data was accomplished by the **Statistical Package for the Social Sciences**² and significance was tested at the .05 level.

The sixty (60) field techniques which appeared in the final survey, were culled from an original list of 108 techniques following a previous survey of thirty Instructional Developers identified as field experts who were currently employed in Canadian and United States universities.

Summary of Findings

In order to present the findings of the survey, the writer will present each of the nine questions that the study addressed, followed by the statistical results:

Question One:

What are the major techniques being employed by Canadian instructional developers in the field?

Finding:

Of the sixty techniques in the study, only nine (15.0%) were considered to be the major ones being used by the survey

population of Canadian instructional developers: (see Table 1)

Question Two:

What is the developer's perceived level of competency with each technique?

Finding:

Of the sixty techniques in the study, the survey population of developers felt competent with the use of twenty-eight (46.7%). These techniques are ranked from 1 through 28 in Table 2.

Question Three:

What is the perceived relevancy of each technique as viewed by the developers?

Finding:

Of the sixty techniques, the population of developers felt that only twenty (33.3%) of them were relevant or valuable to the field of Instructional Development. These may be found numbered 1 through 20 in Table 3.

Question Four:

How many of the techniques are unfamiliar to the developers?

Finding:

Of the sixty techniques in the study, it was determined that fourteen (23.3%) techniques were **unfamiliar** to the survey population. These are numbered 47 through 60 in Table 2. Conversely, it was determined that 46 (76.7%) of the techniques were **familiar** to the survey population.

Question Five:

Which of these techniques are currently being taught to a significant degree of instructional development programs and teacher education programs in Canadian graduate and undergraduate institutions of learning?

Finding:

It was determined that **none** of the techniques are being taught to a significant degree in a formal manner at the institutions employing the members of the survey population. Even the highest ranking techniques only scored a mean of .63 (see Table 4).

Question Six:

Is the number of years of teaching experience relative to the use of techniques?

Finding:

With the exception of five techniques (Delphi, Instructional Analysis Kit, Micro Teaching, Program Planning Budgeting System, and Role Playing), it was determined after performing a Pearson Correlation that there is **no significant relationship** between the number of years of teaching experience and the use of techniques. Further, it may be of interest to note that of the five techniques where a significant relationship existed, none of them were deemed to be valuable to the field as reported in Table 3.

Question Seven:

Are the respective employment areas of the surveyed developers related to the level of technique use?

Finding:

In order to address this question, a one-way analysis of variance (ANOVA) was performed between the Level of Use and the Title or Present Job Responsibility of the surveyed developers. It was discovered that there was **no statistically significant** evidence to prove that a relationship existed between employment and use; however, a trend did appear which illustrated that the Administrators category had a larger mean than did the University and College Instructors category, which in turn had a larger mean than did the Teachers and Consultants category, which in turn had a larger mean than the Support Staff of Audio-visual Technicians and Librarians category. Yet, in spite of such a trend, there would exist a 26% chance of error when suggesting that a **statistically significant** relationship existed.

Question Eight:

Is the graduate and/or post-graduate education of the developers related to the level of technique use?

Finding:

An ANOVA was performed between the Level of Use score and the Level of Highest Education, and as was the case in question seven above, it was discovered that a definite **trend** appeared suggesting that the use of ID field techniques increased with the amount of education of the survey population. Yet, this was only a trend and no statistical significance may be attributed to the results of the survey as there would be a 41% chance that any decision based upon the statistics would be incorrect.

However, it was discovered that there was a definite significant relationship between

the education and the survey population's perceived Competency Levels of the techniques ($p = .0241$). Further, it was discovered that a definite significant relationship existed between the level of education and the degree to which the institutions employing the survey population teach the techniques ($p = .0002$).

Question Nine:

Are the four major categories of competency level, level of use, value of instructional development, and degree to which institution teaches interrelated?

Finding:

It was determined that a strong relationship existed among the four major categories of Competency Level, Level of Use, Value to ID, and Degree to Which Institution Teaches the Techniques.

a) The greater degree that graduate and/or post graduate institutions teach field techniques, the more familiar and competent the student developers will be with them, the more valuable they will perceive the techniques to be, and the more use they will make of them in the field after graduation.

b) The more competent that the developers are with the field techniques, the more valuable they will perceive them to be and the more use they will make of them in the field.

c) The more use that the developers make of field techniques, the more competent they will become with them and the more valuable they will perceive them to be to the field of Instructional Development.

d) The more valuable developers perceive field techniques to be to Instructional Development, the more use they will make of them, and the more competent they will become with them.

Conclusions

The following conclusions may be drawn from the findings of the study.

1. Because of the very low number of field techniques being used and the very low number of techniques being taught by the members of the survey population, it may be concluded that very few Canadian institutions are teaching instructional development techniques at the graduate and/or post graduate levels.
2. Because a relatively low percentage of field techniques are perceived to be valuable and very few techniques are

being used, it may be concluded that very few Canadian institutions are teaching instructional development techniques at the graduate and/or post graduate levels.

3. Because there is a high familiarity level of field techniques but a very low significance level of techniques being taught by members of the survey population, it may be concluded that Canadian Instructional Developers are receiving their information about field techniques through formal training outside of Canada, or through their professional readings.
4. Because the survey population was familiar with a large number of the field techniques, of which they determined few were used and many were of low value, it may be concluded that there may be a number of techniques being used which were not listed on the survey sample.
5. If it may be concluded that there are a number of techniques which were not on the survey sample and as only two additional techniques (3%) were suggested by the field experts (only one from sixteen Canadian experts), it may be concluded that other field experts exist who are familiar with additional field techniques that were not included on the survey instrument, or were not members of AMTEC.
6. Because the survey population was familiar with a large number of the field techniques, of which they determined few were used and many were of low value, it may be concluded that there are a significant number of AMTEC members who are familiar with instructional development techniques but who are not actually practicing instructional development activities in their professional work. In other words, a developer may know **about** a technique, but due to job orientation, s/he may not be able to develop skills with it from lack of use.
7. To the extent that the survey population was familiar with 76.7% of the techniques, valued 33.3% of the techniques, and used 15% of the techniques, it may be concluded that there is a progression of responses from familiarity, to competency, to perceived value, to usage of the field techniques. Given such, it may be concluded that the more techniques a

Continued on page 18.

A Consortium for Educational Audio Teleconferencing in British Columbia

by William Robertson, David Kaufman, June Landsburg, John Macleod, Arlene Zuckernick

ABSTRACT

Five post-secondary educational institutions and the educational television authority in British Columbia formed an informal consortium in 1983 to cooperate in using audio teleconferencing for course delivery. Consortium members have pooled audio teleconferencing equipment, staff, and facilities to improve provincewide services and to reduce operating costs. This paper describes the organization of the consortium, the background to its formation, the experiences of the members, results and future directions. Use of audio teleconferencing as a delivery mode has risen sharply since September 1983 with the greatest use being in continuing professional education often in cooperation with the professional societies. The consortium anticipates an expansion of the system from its present 23 sites to 35 in 1984/1985 and continued expansion by a minimum of 25% in hours of use by June 1985.

INTRODUCTION

Audio teleconferencing by post-secondary institutions is growing rapidly on Canada's west coast. An informal consortium for educational audio teleconferencing in the province of British Columbia will complete its pilot year of operation at the end of April 1984. The goals of this group are fairly simple and straight forward. The institutions in-

William D. Robertson. Head of Distance Education at the B.C. Institute of Technology in Burnaby, B.C. Has been involved in distance education since 1974 in instructional design and delivery system research.

David M. Kaufman. Educational consultant. Former Director of Course Design and later Director of Educational Technology for the Open Learning In-

stitute in Richmond, B.C. Has been involved in distance education since 1974 in instructional design and delivery system research.

involved are committed to pooling resources and expanding educational services at a reasonable cost to distant learners throughout the province, while maintaining the variety and flexibility in programming that currently exists in post-secondary education. Such cooperation in a time of restraint continues to be encouraged at all governmental and institutional levels.

British Columbia's 366,000 square miles contain some of Canada's most spectacular scenery. Located astride a half-dozen major mountain ranges, and including a large island, transportation is difficult and expensive. Greater Vancouver is over half the provincial population, with a smaller urban concentration in the Victoria area. The remaining population is scattered in small cities, towns and individual homesteads over the vast and rugged British landmass. All this causes great difficulty in the provision of educational services with some equity across the province.

The three universities are located in the major urban areas: the University of British Columbia and Simon Fraser University in the Vancouver area and the University of Victoria on the Island. The British Columbia Institute of Technology is also in Greater Vancouver. In addition, there are 15 regional colleges in B.C. which offer, in addition to college programs, one or two years of university work in a number of disciplines. Following this, the students may complete degree work at one of the universities.

stitute in Richmond, B.C.

June R. Landsburg. Coordinator of Knowledge Network, Programming for Simon Fraser University in Burnaby, B.C. Formerly cofounder of instructional television at Carleton University in Ottawa.

John K. MacLeod. Distance Education Coordinator in Continuing Education for the Health Sciences at the University of

The Open Learning Institute provides a broad range of correspondence throughout the province, and the Knowledge Network of the West operates an educational television channel distributed by satellite.

The establishment of an informal administrative and equipment consortium has allowed institutions to use audio teleconferencing which they would otherwise not have been able to, given the prohibitive cost of deploying receive equipment throughout an area that is 860 km wide by 1,200 km long (540 miles by 750 miles).

This paper will present a descriptive study of this informal consortium, the participating institutions use of the system during the pilot period, and some thoughts on the future directions of audio teleconferencing in British Columbia.

HISTORICAL PERSPECTIVE

Educational audio teleconferencing as a regular method of delivering courses to off-campus students has only been available in British Columbia since September 1982. However, educational institutions have been experimenting with telecommunications as a delivery mode for the past eight years. In 1976, the Distance Education Department of the British Columbia Institute of Technology (BCIT) developed a twelve week course that was delivered by telephone company-provided audio teleconferencing to nine small, widely-scattered communities on the north end of Vancouver Island. Approximately sixty people met for three hours on each of the twelve nights. Resident experts drawn on a rotational basis from the nine communities led the seminars. The concept was effective with most participants agreeing that it had been a useful experience even though the audio levels were lower than most would have liked. The programmers decided that, until the sound quality could be improved and the line charges reduced, audio teleconferencing would

British Columbia. Has been involved in audio and video production at UBC, and in Ontario and Alberta for the past ten years.

Arlene D. Zuckernick. Coordinator of Distance Education for University Extension at the University of Victoria. Has been responsible for instructional design in distance education for five years.

be of limited use for reaching students in remote communities.

In 1977, the British Columbia Ministry of Education, in cooperation with the Canadian Department of Communications, used the communications satellite Hermes (earlier known as the Communications Technology Satellite) to experiment with direct broadcast television to, and satellite returned audio from five of the larger population centers in British Columbia. Radio telephones were used to return the audio from a sixth center, a remote logging camp. Most of the province's educational institutions in cooperation with hospitals and libraries conducted a wide range of educational and public information experiments through the fall. When the experiments were complete, an informal consortium of experimenters and the Ministry of Education developed a proposal to the Department of Communications to conduct a longer experiment on the Anik-B satellite which was expected to be available in 1978 or 1979. The proposals led to the Distance Education Department of BCIT being contracted in 1979 by the Ministry of Education to develop and manage an eight month experiment in satellite delivered, interactive, instructional television. Programming originated in Vancouver and was received in ten centers in British Columbia and one in the Yukon. The satellite's transmit and receive equipment was stationed at seven separate colleges and institutes which formed an operating consortium of relatively equal partners coordinated by BCIT.

The project grew from 14 hours of live, interactive, televised instruction in October 1979 to 42 hours a week in January 1980. During the eight months, 19 separate organizations had become continuing or temporary members of the consortium, developing an awareness of the potential of telecommunications for delivering educational programs and making the personal contacts that were essential for the operation of an informal consortium. The experiment was extended to September 1980 when the newly created Knowledge Network of the West (KNOW) began to coordinate and direct all educational television delivery in B.C. KNOW negotiated further extensions of the experiment time on Anik-B and later transferred to Anik-C, purchasing its time like any commercial user. KNOW gradually accessed cable and low-power re-broadcast facilities and created a hybrid closed circuit and broadcast one-

way delivery system. Students who wish to speak with instructors during the live portions of a broadcast now do so through toll-free dial access. The loosely organized consortium that was effective during the experimental period has been replaced by a series of committees advisory to KNOW. The most significant change for educational programmers has been in the openness of access to courses by prospective students. It is now not possible to restrict access to the educational programs to only those persons who are fully registered as fee paying students. While the openness of the system provides excellent public relations for institutions, fee revenue has generally dropped. Some programmers no longer use KNOW because of concerns of confidentiality or of royalty conditions on their purchased course materials.

In 1982, an accidental discovery by BCIT of an audio bridging system in a local radio station led to an agreement between BCIT and the radio station's parent company, Western International Communications Ltd. of Vancouver, to test a prototype bridge at BCIT and to produce portable receive station equipment (amplifier/speaker and four microphones). The use of the teleconference system grew rapidly in 1982 and 1983 as continuing education programmers who had been part of the original Anik-B consortium rented more and more time on the BCIT bridge, shipping rented equipment to receive sites as needed. In all cases, the programmers were directing their courses to specialized free-paying groups in up to ten different locations. Although there is a higher cost for using the audio teleconferencing system than the publicly supported KNOW system, audio teleconferencing is growing very rapidly because of greater flexibility in scheduling and much higher fee revenue.

	1982/83	1983/84
Individual teleconference	155	192
Total hours of teleconferencing	223	467
User contact hours (estimated)	16,300	78,000

As the use of the audio teleconferencing system grew, programmers quickly realized that the rental receive equipment (moderators) was spending more time in transit to the different sites than being used for teleconferencing. After a review of the 1982/1983 academic year, BCIT suggested to other users that an informal consortium should be formed to share whatever resources each could contribute

for improving the level of educational audio teleconferencing in British Columbia.

CONSORTIUM STRUCTURE

The consortium is an informal association of educational institutions whose main use of audio teleconferencing is to deliver continuing education to off-campus students. Agreement to form the consortium was made at the operating staff level in September 1983. There are no formal inter-institutional agreements or legal ties other than an exchange of letters of intent. As soon as those institutions (BCIT, Simon Fraser University, and the University of British Columbia and KNOW) who had audio teleconferencing equipment or remote classroom sites agreed they could pool their resources, other organizations (Open Learning Institute, University of British Columbia and KNOW) who had a special programming or coordinating interest in distance education, were invited to join the consortium discussions. The group agreed to conduct a pilot project between September 1983 and May 1984. The goal of the project was:

- to provide a cost-effective, province-wide audio teleconferencing service through pooling and coordination of resources.

Objectives agreed to were:

- to develop an inter-institutional process for sharing audio teleconferencing systems.
- to determine if audio teleconferencing is a cost-effective method for delivering post secondary programs in British Columbia.
- to determine the level of user acceptance of audio teleconferencing in British Columbia.
- to introduce new users to audio teleconferencing.
- to explore new ways of using audio teleconferencing.

Individual users in the consortium had their own objectives, some of which were:

- to reduce operating costs.
- to increase the number of easily accessible receive sites.
- to generate increased revenue.
- to reduce time required to organize individual teleconferences.

The equipment pooled in the consortium is two identical, 10-line operator-controlled bridges in Vancouver, one at

Continued on page 25.

Preparing Personnel for School Media and Library Service Positions: Some Observations

by Marvin E. Duncan

A trend has emerged during the past decade or so toward the closer articulation of educational media services and library services and the curriculums associated with them. This trend has revealed itself in several ways: (1) college and university media services are being housed in the existing library building or a new structure with a designation such as the learning resources building; this practice is also being followed in secondary schools and community colleges where there are oftentimes separate library buildings; (2) media hardware at the elementary, secondary, and community college levels is stored in the library or in an adjacent room in institutions where library services occupy a room rather than a building; (3) media services, as are library services, are performed by library personnel; merged preparation programs in library service and educational media have been established in institutions of higher education which seek the development of competencies in both areas; and (4) new nomenclature has been developed to describe the separate programs both in the media area and in library services, as well as in the merged programs.

It cannot be gainsaid that some benefits have resulted in some institutions from the establishment of the merged program. Colleges and universities with small enrollments, limited faculty and facilities in the two separate programs can benefit; elementary and secondary schools which have funding for the position of librarian but not for a professional employee in media service can likewise benefit. An employee with training in both fields has potentially greater usefulness in such situations. The graduate of the merged program has the potential of higher achievement on a certification examination such as the NTE since the examination will likely include content from both

fields. It should be realized, however, that the establishment of a merged program does not solve all of the major problems involved in the closer articulation of these fields and that problems remain both for merged programs and the separate programs. This paper will examine several of the problems.

A serious problem connected with the merged program is credit/curriculum requirements. In institutions offering the graduate merged program, the typical credit requirement for a Master's degree of 30-36 semester hours should not be increased if the program is to remain quantitatively competitive with other Master's level programs. More specifically stated, this problem simply grows out of the elementary arithmetic that two programs, each requiring 30-36 semester hours (a typical requirement of graduate-level media and library science programs) cannot be merged into a single 30-36 semester hour program without the substantial elimination of courses or credit requirements from one or both of the previously separate programs. If the curricula of the separate programs prior to a merger were well-designed and were based on sound principles of curriculum design, one may legitimately ask, "What happens to the course content and the related student competencies which have been eliminated in the process of merging?"

A second problem which principally affects the separate programs but which has some impact on the merged program is the inexact and confused use of the "new" terminology which is designed to replace such traditional titles as AV director, media personnel and librarian. As Richard Wynn observes, titles are changed to keep pace with societal changes. Media and library personnel suffer from an ever-increasing list of job titles: "This trend from banal to more esoteric job titles has been all about us, even in schools. School librarians have become instructional materials center coordinators . . ."¹

Wynn generalizes that a societal basis exists and that "the esotericism of job titles must be escalated with the rising influence of society."² Among the proliferating terminology for program and job titles, two titles are in current use which seek to describe programs and personnel in media and in library science: (1) *media specialist* is conceptualized to denote the professional worker trained in an education technology or media program; the same terminology is used to identify the program which provides the training; (2) *media coordinator* is the term used to identify the professional worker trained in a library science program; this terminology is also used to designate the program which provides the library science training.³ Possibly as a result of a lack of strong program identity (in terms of the competencies developed in the merged program) and the jargonese character of the words specialist and coordinator, fuzziness results in oral and written use of the terms. A review of pertinent literature reveals that at times one title is used when context suggests that the other title should have been used for correct meaning. Some writers and speakers use the terms interchangeably — further confusing meaning. As a result of the inexact, and incorrect use of the terms, school administrators, personnel officers, and managers in business and industry and some administrators of professional schools and programs have become confused about the nature of the programs and the differing competencies developed in each program. It is the position of the writer of this paper that libraries, librarians, and library service programs are **primarily** concerned with the printed word in the form of books, journals, pamphlets, tapes, newsprint and the like; hence, library science programs should focus on these materials and develop student competencies in their educational uses. Media training programs are **primarily** concerned with the various technological aspects of communication and learning (films, recordings, still and motion photography, audio and video tapes) and with instructional development; the curricula of media programs seek to develop learner competencies in the theory and practice related to the effective use of media hardware and software in the educational pro-

² Ibid.

³ North Carolina and several other states use this terminology in listing certification guidelines.

cess. Obviously, goals, curricula and outcomes of the programs differ. Graduates of a library program offer the prospective employer rather different competencies from those offered by a graduate of a media program. The media specialist will function at a substantial disadvantage when expected to perform tasks associated with library services while the media coordinator will conversely experience difficulty in directing and providing media services. There are critical differences in the training programs, and, hence, substantial differences in competencies are developed in the separate programs.

Undoubtedly, there is more overlap at the present time in the tasks performed by media specialists and media coordinators than in previous years. Yet, differences still exist. The changing role of the school librarian is noted by Johanna S. Woods who writes: "school librarians in their roles as media specialists must possess competencies in media design, development, and evaluation."⁴ There is no question as to whether librarians whose training has included **substantial** work in media can function effectively in this new role; there is question, however, whether the person trained in either a merged program or a traditional library science program which, at most, will include 2 or 3 courses in media, can adequately develop the competencies in media proposed by Wood. (The confused usage of the term media specialist when media coordinator is more appropriate should also be noted.)

A study in the mid-seventies provides some information about media education programs pertinent to the consideration of media training in the merged program and both separate programs. In 1975, a questionnaire administered to 495 school media specialists sought to ascertain their judgments as to the nature of graduate media course offerings (or other learning activities) needed in preparing individuals for managing and operating school media centers. Among the recommendations were that:

Graduate media programs should offer additional courses in media design and production. Courses that would seem to hold some interest for school media specialists might include (1) advanced media

⁴ Johanna S. Wood, "The Role of Media Specialists in the Curriculum Process," *School Library Journal*, XXIII, No. 1 (September, 1976), 20.

production skills, (2) graphic design, (3) still and motion picture photography.⁵

While courses of the sort recommended are offered in many media programs or can be developed without undue difficulty, it is unlikely that either in the merged program or the media coordinator program these additional courses can be provided without major curriculum revisions and additions in staff and facilities. In a similar vein, the incorporation of courses or credit experiences in library science (such as story telling, basic reference materials and cataloging) would present difficulties in staff facilities to the planner of the curriculum of a media specialist program.

Inherent in joining certification of media personnel and librarians are the problems discussed above. In addition, in state joint certification programs which require a "passing score" on the National Teacher Examination, the graduate of the media specialist program is at a great disadvantage. In 1975, as a member of a validation team reacting to the issue of "fairness" of NTE content in the various subject areas, I observed that most of the questions on the media examination grew out of library science content; hence, students who graduate from educational media or educational technology programs are at a severe disadvantage; the curriculum preparing the media specialist usually does not include substantial work in library studies, as previously noted. Although the merged program may appear to provide an easy solution to this problem, it is the position of the writer of this paper that a merger should be undertaken slowly with greater care. A merger should take place when more similarities than differences exist between programs, when programs have similar goals and objectives, when faculty and facilities are available for diverse course offerings and when the programs prepare individuals for similar jobs.

As noted above, although a trend toward the merged program concept has developed, many separate programs are available to students. It has been noted earlier that the practice of joint certification presents a distinct problem for the graduate of the separate media program when confronted with a certification examination that is substantially more

⁵ Howard G. Ball, "School Media Specialists' Perceptions of Media Education Programs," *The Southeastern Librarian*, XXVI, No. 4 (Winter, 1976), 226-29.

library science than media. The suggestions which follow will eliminate the basic unfairness inherent in this situation:

Students majoring in each field (media or library science) should be strongly urged, if not required, to minor in the second field, i.e., media students should minor in library science and *vice versa*;

An examination should be developed for those students who have completed a media major, library science minor; the content of the examination should be predominantly media; conversely, library science students should take an examination predominantly in library science but which includes some media content. Students in each field who do not minor in the second field should take an examination in the single field in which they concentrated.

The initial suggestions above, if implemented in both programs, will strengthen the preparation of students graduating from either of the separate programs in the second field. This strengthening will have the potential of improving students' scores on certification examinations which test on content from both fields. The recommendation above suggesting a single field examination is appropriate for students whose interest and programs are limited to a single field.

Bibliography

- Ball, Howard G. "School Media Specialists' Perceptions of Media Education Programs," *The Southeastern Librarian*, XXVI, No. 4, Winter, 1976, 226-29.
- Belotta, Anthony L. "What's A Media Specialist?" *Audiovisual Communications*, January, 1978, 58-61.
- Educational Technology: A Glossary of Terms.** AECT Task Force On Definition and Terminology. Published by Association for Educational Communications and Technology. 1979. p. 27.
- Rosenberg, Marc J. "What is the School Media Specialist's Role," *Audio-visual Instruction*, XXIII, No. 2, February, 1978, 12-13.

Continued on page 22.

¹ Richard Wynn, "The Wynn Principle," *Phi Delta Kappan*, LIV, No. 6 (February, 1973).

From the Media Periodicals

by Richard Ellis

CLASSROOM COMPUTER LEARNING, 5:2, Sept. 1984

- Kohl, Herbert. "Who should be evaluating software?"
Sharp, Pamela. "Using Logo to shape artistic ideas"
Green, John O. "Straight talk about local networks"

CLASSROOM COMPUTER LEARNING, 5:3, Oct. 1984

- Slesnick, Twila. "Should software pirates walk the plank?"
Green, John O. "New ways for special ed kids to communicate"
Copeland, Willis D. "Creating a historian's microworld"

CLASSROOM COMPUTER LEARNING, 5:4, Nov/Dec. 1984

- Ohanian, Susan. "How today's reading software can zap kids' desire to read"
Bergen, Steve and Lynne Schalman. "Who's pushing the buttons?"

COMPUTERS IN EDUCATION, Sept. 1984

- Allan, Roger. "Major CL systems"
Lenk, Frank. "Logo: opening doors"
Allan, Roger. "School computers in Canada"
Koprin, Lia. "Computer assisted testing operations"

COMPUTERS IN EDUCATION, Oct. 1984

- Zapletal, Edward. "Networking"
Markwick, William. "A look at the Icon"
Marshall, George R. "Word processing: teaching approaches"

EDUCATIONAL COMMUNICATION AND TECHNOLOGY, 32:2, Summer 1984

- Ganske, Ludwig and Pauline Hamamoto. "Response to crisis: A developer's look at the importance of needs assessment to teacher educators in the design of computer literacy training programs"
Heinich, Robert. "The proper study of instructional technology"

EDUCATIONAL COMMUNICATION AND TECHNOLOGY, 32:3, Fall 1984

- Jonassen, David H. "The mediation of experience and educational technology"

EDUCATIONAL TECHNOLOGY, 24:8, August 1984

- Marcus, Stephen. "GOSUB: POET: RETURN - Computers and the poetic muse"
Stiehl, Ruth E. and Les D. Streit. "Factors assuring success of an instructional systems model"
Schwade, Stephen. "Why keyboard entry convenience should not be your only concern when choosing courseware: the advantages of the constructed response"
Goodman, R. Irwin. "Focus group interviews in media product testing"

EDUCATIONAL TECHNOLOGY, 24:9, September 1984

- Ehrmann, Stephen C. "Technology could change the goals of a college education..."

- Carrier, Carol A. and Judith L. Lambrecht. "Preparing teachers for using computers in instruction"
Thomas, Dwain. "A high school evaluates software (with an evaluation form)"
Selfe, Cynthia L. "Software for hardnoses: CAI for college composition teachers"
Cruz, Jaume. "A critical review of programmed instruction"
Waldrop, Phillip b. "Behavior reinforcement strategies for computer-assisted instruction: programming for success."
Vaidya, Sheila and John Mckeeby. "Computer turtle graphics: Do they affect children's thought processes?"

EDUCATIONAL TECHNOLOGY, 24:10, October 1984

- Salomon, Gavriel. "Computers in education: Setting a research agenda"
Masat, Francis E. "A regional approach to computer education of teachers: A case study"
Wallace, Joy and Raymond M. Rose. "A hard look at software: What to examine and evaluate (with an evaluation form)"
Sandoval, Hugo F. "Teacher training in computer skills: A call for a redefinition"
Young, Jerry L. "The case for using authoring systems to develop courseware"
Della-Piana, Gabriel and Connie Kubo Della-Piana. "Computer software information for educators: A new approach to portrayal of student tryout data"
Reider, William L. "Video-cassette technology in education: A quiet revolution in progress"
Rees, Elwyn, et al. "Complex analysis of classroom interactions using RACER computer-based technology"

JOURNAL OF COMPUTER-BASED INSTRUCTION, 11:3, Summer 1984

- Bark, Alfred. "Producing computer based learning material at the Educational Technology Center"
Mudrick, David and David Stone. "An adaptive authoring system for computer-based instruction"
Avner, Allen, et al. "CBI authoring tools: Effects on productivity and quality"
Fairweather, P.G. and A.F. O'Neal. "The impact of advanced authoring systems on CAI productivity"
Hannafin, Michael J. "Options for authoring instructional interactive video"

MEDIA & METHODS, 21:1, September 1984

- Radencich, Marquerite C. and Jeanne S. Schumm. "To byte or not to byte: Traditional and high-tech approaches to writing term papers"

MEDIA & METHODS, 21:2, October 1984

- Dyrenfurth, Michael J. and F. Milton Miller. "An ongoing evolution-media use in vocational/technical education"
Pinola, Mary. "How effectively do you use media?"
Sokoloff, Michele. "Surprising connections: Linking technology to curriculum"
Walcott, J. Andrew. "Orchestrating the media center"

Continued on page 16.

Mediography

MEDIA ON COMMUNICATION

by Nancy Lane

The topic for this issue is communication. I have listed a number of programs which portray a variety of aspects and viewpoints.

COMMUNICATING NON-DEFENSIVELY Motion Picture MGHT 1982 25 min., sd., col.

Defensive communication - when and why; and a plan of counteraction are explored in this presentation.

COMMUNICATION: THE NAME OF THE GAME Motion Picture RTBL/ITF 198-28 min., sd., col.

Using a game-show format the film describes how to exchange ideas and information.

COMMUNICATION: NON-VERBAL AGENDA Motion Picture MGHT 1974 30 min., sd., col.

Examples of non-verbal communication are demonstrated to show the effects on interpersonal relationships. With Dr. Albert Mehrabian.

COMMUNICATION - A SERIES Motion Picture COR 1977 approx. 14 min. ea., sd., col.

These three films deal with the message, the receiver, and the sender.

COMMUNICATION BY VOICE AND ACTION Motion Picture CENT/COR 14 min., sd., col.

Illustrates that non verbal elements such as voice tone and facial expression are an integral part of speech communication.

COMMUNICATIONS ROADBLOCKS Motion Picture BFA 1977 15 min., sd., col.

Identifies roadblocks of defining terms, understanding biases, and distinguishing facts. Demonstrates solutions.

COMMUNICATIONS SERIES Motion Picture BARR/GORD WATT 1980 11-21 min. ea., sd., col.

This series looks at the communication process and its relationship to success. The titles are: "Communicating Effectively", "What do we Look Like to Others", "Person to Person", "Communications or Confrontations".

COMMUNICATION SKILLS: TELL-SELL-RESOLVE Video-recording GM/Marlin 1975 86 min., sd., col.

How and when to communicate appropriately in letters, memos, meeting, etc.

COMMUNICATION SKILLS FOR MANAGERS Video-recording TIMLIF/MARLIN 1980

These six programs discuss, depict, and demonstrate listening, speaking, meetings and presentations.

COMMUNICATION PRIMER Motion Picture PYR/ITF 1954 22 min., sd., col.

This classic by Charles Eames reveals different concepts of communication, and shows the effect communication has on many areas of life.

COMMUNICATIONS THAT WORK Motion Picture EFM/ITF 1984 35 min., sd., col.

A new release which looks at elements common to writing, speaking, and listening.

DECISIONS, DECISIONS Motion Picture VA/ITF 1979 28 min., sd., col.

Set in a business setting, this program explores attitudes and assumptions which contribute to communication breakdowns.

LISTENING FOR RESULTS Motion Picture RTBL/ITF 1981 10 min., sd., col.

Common listening errors, and how they could be avoided, are the subject here.

LISTENING, SPEAKING, AND NON-VERBAL LANGUAGE SKILLS Motion Picture BFA 1976 15 min., sd., col.

Describes and demonstrates the abuses and misuses, as well as the correct ways.

NON-VERBAL COMMUNICATION Motion Picture SAL/MARLIN 1978 12 min., sd., col.

The topic here is how to be aware of non-verbal language in both oneself and others.

THE ONE-SIDED TRIANGLE: COMMUNICATION WITHIN THE GROUP Motion Picture BNA/ITF 197- 23 min., sd., col.

The topic of this program is communication behavior at staff meetings.

OH, WHAT A LOVELY REPORT Motion Picture RANK/ITF 19 26 min., sd., col.

This film demonstrates the process of writing a report - the investigation, the planning, the writing and the revising.

OPEN THE DOOR Motion Picture CCCD/ITF 198- 28 min., sd., col.

O.P.E.N. communication is the subject of this film.

PASS IT ON Motion Picture CCCD/ITF 1981 15 min., sd., col.

Clarify and verify! This film demonstrates techniques for easy communication.

POWER OF LISTENING Motion Picture MGHT 1979 26 min., sd., col.

With Dr. Stainbrook and Dr. Alessandra, the process of effective communication is explored, with listening being examined as an "active" function involving both listener and speaker.

STRICTLY SPEAKING Motion Picture CCCD/ITF 1979 27 min., sd., col.

Based on Edwin Newman's books, this film deals with verbal behavior.

Continued on page 16.

BOOKS

The Role of Technology in Distance Education

A.W. Bates (Ed.)
Beckenham, Kent: Croom Helm Ltd., 1984, 231 pp.
Reviewed by Angelina T. Wong

There are two major groups of adult education professionals who need to be kept informed about the growth of technology in distance education. The first is the staff working in the increasing number of specialized distance teaching institutions around the world. The second group is the staff working in conventional institutions who are considering the necessity of the possibility of off-campus teaching. For the purpose of program planning, both of these groups need to carefully consider the range of educational media which are available and appropriate for distance teaching. Given the speed of technological development, there is often a pressure to use technology for its own sake. In addition, each new technology usually generates its own group of enthusiastic supporters who tend to proclaim its merits and overlook its weaknesses.

The editor of this book, A.W. (Tony) Bates, is a Reader in Media Research Methods and head of the Audio-Visual Media Research Group, in the Institute of Educational Technology at the Open University. He has succeeded in pulling together a team of contributing authors who can write lucidly and interestingly about a topic that often confuses or overwhelms academics and administrators. Fifteen of the seventeen contributing authors are associated with the Open University, and the experiences which they use to illustrate the capabilities of the given media are based on the Open University's courses. Nevertheless, they have managed to provide some realism about the various technology as well as to stimulate some re-assessment of the more "conventional" media such as audio-cassettes and broadcasting. Nichola Durbrige, for example, presents a convincing case for the continued use of the "simple, quick and cheap to prepare" audio-cassettes (chapter 9.)

A few of the terms used in the book may cause some confusion for Canadian readers. For example, the "viewdata" system described in chapter 15 is a system which allows a user to access information stored in a remote computer via the public telephone service. It is commonly known as "videotex" outside Britain, and the Canadian counterpart is the Telidon system. The "teletext" referred to in chapter 14 is an electronic data

development are likely to evolve.

The second section deals with course delivery and administration, and includes chapters on telephone teaching, Cyclops shared-screen teleconferencing, computers in academic administration, teletext systems, viewdata systems, tutors and media, and local media resource centres. The final two chapters constitute a third section which attempts to pull together the various media, using the pedagogic differences between the various media as a framework for discussion.

The final two chapters (18 and 19) serve as a stimulus for educators to think about how they should use technology for distance teaching. As a matter of fact, readers who are unfamiliar with the various forms of educational technology should perhaps read chapter 18 before tackling the others. John Sparks makes an excellent attempt to relate the selection of technology to the different kinds of audiences, subject matter, courses, forms of access to education, as well as the different study patterns amongst those who want to learn.

In the final chapter, Tony Bates predicts that the new technology will provide: (1) a wider range of teaching functions and a higher quality of learning; (2) lower costs; (3) greater student control; and (4) more interaction and feedback to the students. However, he also points out that effective distance education requires technology which is so cheap, reliable, easy to use and multifunctional that it can be found in every home. The recently developed technology (e.g. video-discs, Cyclops) which are capable of delivering highly individualized and interactive lessons are simply not yet cost-effective. It appears that books, broadcast television, radio, audio-cassettes and the telephone will still be the dominant technology for home-based learning in the near future.

distribution method using broadcast and/or cable as the transmission medium. "Teletex" is a form of telex-style electronic mail available at the Canadian post office. Britain happens to have the largest teletext service in the world. The "Cyclops" system described in chapter 12 is a unique system developed by a research team at the Open University. Its main strengths are its writing and drawing facility and its interactivity.

The final two chapters (18 and 19) serve as a stimulus for educators to think about how they should use technology for distance teaching. As a matter of fact, readers who are unfamiliar with the various forms of educational technology should perhaps read chapter 18 before tackling the others. John Sparks makes an excellent attempt to relate the selection of technology to the different kinds of audiences, subject matter, courses, forms of access to education, as well as the different study patterns amongst those who want to learn.

In the final chapter, Tony Bates predicts that the new technology will provide: (1) a wider range of teaching functions and a higher quality of learning; (2) lower costs; (3) greater student control; and (4) more interaction and feedback to the students. However, he also points out that effective distance education requires technology which is so cheap, reliable, easy to use and multifunctional that it can be found in every home. The recently developed technology (e.g. video-discs, Cyclops) which are capable of delivering highly individualized and interactive lessons are simply not yet cost-effective. It appears that books, broadcast television, radio, audio-cassettes and the telephone will still be the dominant technology for home-based learning in the near future.

Angelina T. Wong
Division of Extension & Community Relations
The University of Saskatchewan

MICROWARE

By Leonard F. Proctor

If you have suggestions or contributions that you would like to make to this column, please forward them to: Dr. L.F. (Len.) Proctor, Dept. of Educational Communications, College of Education, University of Saskatchewan, Saskatoon, Sask. S7N 0W0.

COLOR SLIDES FROM YOUR COMPUTER

by Barry Brown

Computer graphics has become an industry catch-word. Those fortunate or rich enough, with the appropriate interface equipment, are now utilizing computer generated transparencies to enhance their presentations. Even a modest dedicated computer slide production system costs as much as many complete microcomputer packages. Those of us without the luxury of specialized computer transparency equipment would often find it useful to include computer slides in our presentations. This article is designed to help you create computer generated color graphics by direct photography of the computer monitor screen.

Computer generation of graphics offers distinct advantages over manual methods. Some of these are:

- * create, view, and modify graphic before committing to final medium of presentation
- * reduce time and effort required to produce graphics
- * increase uniformity and legibility of graphic presentations
- * synthesize complex information to produce simplified visual presentation
- * merge text and graphic to permit comparison, contrast, or sequence of information
- * quickly and easily modify shape, size, format to increase communication value
- * change, at a key stroke, pattern or color variations to delineate, highlight or contrast information
- * employ exploded, zoomed, or rotated aspects of a visual to spot-lite specific information

Many software graphic packages are available which perform the above opera-

tions. This article will deal only with conversion of the screen image to a 35 mm color transparency. Beagle Bros ALPHA PLOT and Phoenix ZOOM GRAFIX were utilized to create the graphics in this column. A little experimentation with any graphics package will give you the necessary color screen images to test your ability to convert computer images to color slides. If you find it difficult to obtain an appropriate image with which to experiment, use one of the excellent graphics that often introduce game disks.

Creation of color slides directly from the computer screen is simply a matter of snapping a picture of the monitor screen. Attention to the following photographic tips will greatly increase the possibility for an initial success since a number of technical variables inherent to television and camera come into play.

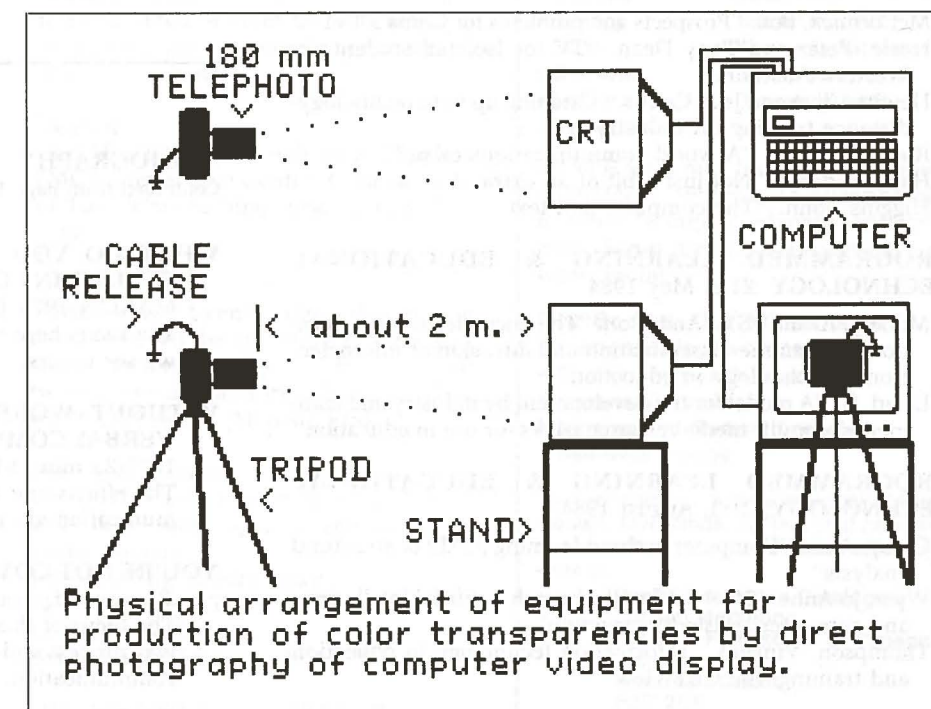
Several companies produce equipment specifically designed to photograph the computer screen image directly. If large scale presentations are envisaged, this type of equipment may prove cost effective, but for the casual user the least expensive method makes use of readily available equipment. The key component is a single lens reflex camera with interchangeable lens. Access to this type of camera is important in order to see the same image through the camera view finder as will be imaged on the film. The camera must have capability for lens interchange to permit fitting

a telephoto lens.

Most television monitor and receiver screens (cathode ray tube CRT) feature a curved face-plate which causes a distorted image when photographed. One way of eliminating this distortion is to obtain a flat-screen CRT display, but these are scarce and cost about \$2200. The best way for an occasional user to minimize distortion caused by screen curvature is to utilize a long or telephoto lens when photographing the display. The camera remains several feet from the display, tending to compress distance perspective. Telephoto lenses from 135 mm to 300 mm work adequately, but a 180 mm or 200 mm lens seems to give best results.

It is imperative that a sturdy tripod is utilized to provide a well composed and shake-free image when a long telephoto lens is used. A cable release reduces camera shake as the exposure is made. Arrange the camera and CRT display as shown in the diagram. Make certain the camera is level and centered vertically and horizontally on the screen. The camera could easily be two meters from the screen when a long lens is used. Move the camera closer or further from the screen, focusing each time, until a clear image of the screen area to be photographed is obtained. Note that most camera view-finders show somewhat less than will appear on the film.

Continued on page 16.



MICROWARE

Continued from page 15.

Crop the image in from screen edge about two to five centimeters, depending on screen size. Arrange the camera and display so that no window or room light is reflected directly into the camera. Sufficient overhead light for working will not usually impair image quality.

Quality of final image depends on several factors with display type and quality foremost. If you have a choice, a color monitor will always give better results than a color receiver, since rf modulation and demodulation reduces resolution of the screen image. It goes without saying that one should always select the most expensive and well maintained color monitor available. Monochrome monitors are also suitable for many types of information and are treated in exactly the same manner as a color display.

Selection of a film depends on cost, quality, and processing. Good results have been achieved with Kodak Ektachrome and Kodachrome daylight type film in the ASA 200 range. Some experimentation is

necessary in order to establish a repeatable standard of quality. It is important to keep an accurate record of all film and exposure data so that success can be repeated and poor results eliminated.

Exposure is best set manually as automatic exposure systems can be tricked by amount of information and background color on the screen. A good starting point is an aperture setting of f8 and a shutter speed setting of one second. The scan rate of a television display is 30 frames per second with a totally blank screen between each frame. Thus exposure time must be longer than 1/30th of a second or there is a risk of obtaining a partial frame. The image improves when the shutter remains open long enough to allow several separate frames to be recorded additively. Exposure times of a half second and one second seem to be the best in most situations.

Exposure and color are affected greatly by the settings on the video display. If the display has detents (click-stops) on the color shading, tint, contrast, and brightness controls this provides a good starting point. If such is not the case select an average setting that looks good on the screen as the

beginning point. A 20 frame roll of film should be exposed using two or three different graphics. Aperture and shutter speed should be bracketed. This can be accomplished by starting with a shutter speed setting of one second and an aperture setting of f8. Make one exposure at that setting and then, keeping shutter speed constant, shoot exposures at f4.5, f5.6, and f11. Then, with the same graphic, repeat the exposures with shutter speed held constant at a half second. Repeat this process with a different graphic and/or a variation of settings on the display. Make sure a test of light colored vs dark colored background is carried out. If careful details are recorded of the set-up, film, exposure, and display settings it will be possible, when the slides are developed and analyzed, to determine a standardized procedure which will ensure success during future sessions.

Don't hesitate to attempt to make your own color computer generated slides, as they have the potential to revolutionize the manner in which you communicate educationally. □

MEDIA NEWS

Continued from page 5.

dards introduced as a result of the new technologies

• improve the quality of education provided in respective jurisdictions
Seven themes will take advantage of the breadth of experience brought to the Congress by the international participants and speakers. These seven themes are:

Teaching & Learning

Theories of learning, new designs for curriculum, teaching about and teaching with computers will be discussed as this theme focuses on the interaction between the new technology and the classroom.

Management & Technology

The challenge inherent in managing new technologies affects everyone in the educational community. Administrative applications — financial reporting, scheduling, communications, data banks, office functions — will undoubtedly be explored by congress participants.

Employment & Training

Technology is creating new opportunities for employment and career preparation. An indepth look at these opportunities in the context of the changing workplace will be offered.

The Future Society

Congress participants are promised a crystal ball into the future, looking at how technology will affect our work, our play, culture, the environment and how we will get along with each other.

Innovations & Applications

Hardware and software take center stage in a world-class exhibit and a variety of learning sessions designed to demonstrate innovations in technology and unique applications to education.

Special Needs & Interests

We will look at unique applications to serve the specialized needs of individuals, including the education of the physically and mentally handicapped and the use of technology as a means of bringing people together.

Policy & Planning

The effects of technology on human values and goals; questions of privacy, control and ethics in an information society . . . these are all part of a multi-faceted dialogue aimed at "rounding out" the issues of education and technology.

By dividing the World Congress into themes, the face-to-face nature of a smaller conference will be combined with the advantages of diversity that characterize a larger gathering.

As part of the "Innovations and Ap-

plications" theme, the Congress will feature a world class exhibit of high technology equipment and services relating to education and culture from around the world.

Early, discounted registration is scheduled for the fall of 1984, with complete program information available in September 1985.

Questions concerning the World Congress on Education and Technology may be directed to the Congress Coordinator, British Columbia School Trustees Association, 1155 West 8th Avenue, British Columbia, Canada V6H 1C5. Telephone: (604) 734-2721.

Film Showcase April 15-19, 1985

Objectives

Since the first FILM SHOWCASE in 1970, this event has been Canada's major marketplace for 16mm non-theatrical films. It provides a unique opportunity for 16mm film producers/distributors to exhibit their newest films and video product for library personnel, educators, film society representatives, government officials and business people, all of whom have financial leverage in recommending purchase, lease and/or rental of 16mm film and video product. *Film Showcase* is not a forum for film workshops or screen education seminars.

Location

FILM SHOWCASE will be held at the YMCA Conference Centre, Geneva Park, on Lake Couchiching, near Orillia, Ontario.

Program Format

Each day, twenty nine distribution companies will be operating 29 screening areas simultaneously. This year all twenty-nine distributors will be attending for the full week (Monday-Friday).

Further Information

If further information is needed, or if you have any special requirements, please contact:

Jean Harding, Co-ordinator
FILM SHOWCASE 1985
22 Bardwell Crescent
Scarborough, Ontario M1R 1C9

(416) 979-5097 or (416) 757-9517 □

MEDIA PERIODICALS

Continued from page 12.

MEDIA & METHODS, 21:3, November 1984

- McKenzie, Jamieson A. "The future isn't what it used to be: Videotex in on the way"
Hunter, C. Bruce and Allen L. Wold. "Basic guide to the complete educational computer"

MEDIA IN EDUCATION AND DEVELOPMENT, 17:3, September 1984

- McCormick, Bob. "Prospects and problems for China's TVUs"
Hosie, Peter and Tony Dean. "TV for isolated students in Western Australia"
Hewitt, Clive and Jack Cairns. "Catching up with technology-distance training for industry"
Rodwell, Susie. "A world communications crisis?"
Hart, Andrew. "Not just a bit of an extra"
Higgins, John. "The computer and text"

PROGRAMMED LEARNING & EDUCATIONAL TECHNOLOGY, 21:2, May 1984

- Milne, J. A. and J.S.A. Anderson. "The microelectronics education programme-dissemination and diffusion of microelectronics technology in education"
Lloyd, G. "A model for the development by industry and commerce of multi-media resource packs for use in education"

PROGRAMMED LEARNING & EDUCATIONAL TECHNOLOGY, 21:3, August 1984.

- Oxley, Alan. "Computer-assisted learning (CAL) of structural analysis"
Wyer, Jo-Anne. "New bird on the branch: artificial intelligence and computer-assisted instruction"
Thompson, Vincent. "Information technology in education and training: the CET view"

- Oliver, Elizabeth. "The development of a computer database for education"
Emms, Stephen J. "The M & C's skillcentre CBT project"
Vinegrad, M.D. "Learning by example: a CBT approach"
Morrison, R.K. "Computer-based learning-the way ahead"
Telem, Moshe. "Computer crimes in schools"
Dunn, Seamus and Valerie Morgan. "Aims and interest groups in educational computing" □

MEDIOGRAPHY

Continued from page 13.

WHAT DO YOU MEAN, WHAT DO I MEAN (CASE STUDIES IN COMMUNICATIONS) Motion Picture SAL/MARLIN 1976 18 min., sd., col.

The focus here is the way we see ourselves and the way we see others.

WITHOUT WORDS: AN INTRODUCTION TO NON-VERBAL COMMUNICATION Motion Picture PH/Marlin 1977 23 min., sd., col.

The effects and interaction of non-verbal barriers on communication are presented here.

YOU'RE NOT COMMUNICATING Motion Picture CF 1980 20 min., sd., col.

The focus of this program is that communication is a two way process and an understanding of the process improves communication. □

250
Films, Videocassettes and Multi-Media Productions for Health Care Professionals and Educators



Our Bodies, Our Minds, a new 50-page catalogue published by the National Film Board of Canada, contains detailed descriptions of over 250 audiovisual productions for public health education and in-service training programs.

40 subject headings, including:

- Aging
- Addictions
- Parenting
- D.E.S.
- Child Abuse
- Death and Dying
- The Disabled
- Fitness and Nutrition
- Mental Health
- First Aid and Safety
- Violence Against Women
- Films for Kids
- Occupational Health

All NFB films may be **borrowed** free of charge in 16 mm, and **purchased** in either 16 mm or videocassette formats. Some titles are also available for video rental.

Our Bodies, Our Minds is an indispensable resource for:

- Community Health Educators
- Hospital Personnel
- Nursing and Medical Schools
- Self-help Groups

To receive your complimentary copy of **Our Bodies, Our Minds**, contact your nearest National Film Board of Canada office or write to:

Health Education Catalogue,
English Marketing,
National Film Board of Canada,
P.O. Box 6100,
Montreal, Quebec
H3C 3H5

MAJOR FIELD TECHNIQUES

Continued from page 7.

developer is familiar with, the more s/he will be competent with, in turn the more s/he will perceive as being valuable, and subsequently the more s/he will use in instructional development activities.

8. Because of the successful matching of the survey techniques to the ID system model components, it may be concluded that recognized field experts are ideal developers to solicit future matchings with regard to other techniques not used in the present study.

Implications

The research findings of this study have direct implications for the field of Instructional Development in general and Canadian instructional developers in particular. The following discussion and statements presented are not necessarily supported by the findings of the study, but are considered pertinent for program implementation, program changes, and future state-of-the-art directions.

1. Wherever Canadian educational institutions are not providing ID programs, instructional developers could urge their faculties to provide such.

The above assertion is supported by a number of current developers in the field, including Braden and Terrell¹ who urge ID practitioners to actively promote their profession. Bass, Lumsden, and Dills⁴ agree, suggesting that "We can no longer afford to wait idly until the world beats a path to our doors for help." In the Canadian educational arena, Powell⁵ suggests that Canadian standards should be advanced and Canadian interests pursued in the field of Educational Technology, while Schwier and Wickett⁶ maintain that "ID training will assist in the implementation of new styles of program delivery and it will help practitioners adopt new roles and functions". These beliefs must be **effectively** and **consistently** presented to university administrators wherein ID programs do not exist.

2. Canadian instructional developers could strive to inform the educational community in general and the elementary and secondary panels in particular of the potential benefits of instructional development activities.

In continuation of the "awareness campaign" discussed above, instructional developers could be prepared to diffuse information concerning the potential benefits of ID activities throughout the entire spectrum of education. Gustafson⁷ already has admonished the profession to instruct the whole educational community concerning Instruc-

TABLE 1
LEVEL OF USE

RANK	TECHNIQUE	MEAN	S.D.
* 1	Feedback	1.86	1.15
* 2	Brainstorming	1.70	1.02
* 3	Field Test	1.68	1.19
* 4	Needs Assessment	1.67	1.10
* 5	Long-Range Planning	1.66	1.05
* 6	Multi-Image/Multi-Media	1.62	1.01
* 7	Questionnaire	1.60	1.09
* 8	Literature Search	1.54	1.15
* 9	Flowcharting	1.51	1.02
10	Story Boarding	1.50	1.13
11	Sequencing of Objectives	1.49	1.13
12	Checklists	1.41	1.03
13	Management by Objectives	1.41	1.12
14	Formative Evaluation	1.38	1.18
15	Task Analysis	1.37	1.20
16	Summative Evaluation	1.35	1.18
17	Bloom's Taxonomy	1.29	1.07
18	Content Analysis	1.29	1.14
19	Case Studies	1.25	1.06
20	Interviewing Users	1.24	1.21
21	Computer Search	1.18	1.05
22	Appraisal Interview	1.15	1.09
23	Discovery Technique	1.11	1.08
24	Criterion Referenced Meas.	1.10	1.09
25	Simulation (Gaming)	1.06	1.06
26	Authoritative Opinion	1.01	1.05
27	Cost-Benefit Analysis	1.00	1.10
28	Role Playing	.99	.98
29	Computer Assisted Instruct.	.96	.96
30	Programmed Instruction	.96	.89
31	Behaviour Modelling	.92	1.02
32	Standardized Tests	.92	.98
33	Learner Verification & Revision	.88	1.12
34	Micro Teaching	.86	.99
35	Likert Scale	.80	1.07
36	Technical Conference	.79	1.02
37	Contract Plan	.79	.97
38	Program Plan. Budget. System	.78	1.04
39	Gagne's Taxonomy	.78	.95
40	Program Eval. Review Tech.	.77	.93
41	Linear Programming	.66	.90
42	Critical Path Method (CPM)	.53	.85
43	Krathwohl's Taxonomy	.47	.86
44	Function Analysis	.47	.83
45	Observation Interview (eg. Time-Motion Studies)	.46	.72
46	Instructional Analysis Kit	.42	.85
47	Cognitive Mapping	.41	.77
48	Discrepancy Evaluation	.41	.70
49	Information Mapping	.38	.76
50	Critical Incidents Technique	.37	.76
51	Nominal Group Process	.37	.76
52	Stake Model (Evaluation)	.37	.75
53	In-Basket Technique	.34	.68
54	Decision Tables	.34	.67
55	Delphi Technique	.33	.68
56	Card Sort	.33	.64
57	Shaping	.30	.70
58	Mathetics	.28	.71
59	Force-Field Analysis	.27	.60
60	Gannt Chart	.25	.68

(* = Major Field Techniques)

TABLE 2
COMPETENCY LEVEL

RANK	TECHNIQUE	MEAN	S.D.
* 1	Multi-Image/Multi-Media	2.20	.99
* 2	Feedback	2.08	1.12
* 3	Needs Assessment	2.08	1.12
* 4	Brainstorming	2.07	.96
* 5	Story Boarding	2.06	1.21
* 6	Questionnaire	2.03	1.10
* 7	Long-Range Planning	1.98	1.10
* 8	Field Test	1.96	1.14
* 9	Flowcharting	1.90	1.10
* 10	Management by Objectives	1.88	1.17
* 11	Bloom's Taxonomy	1.49	1.14
* 12	Checklists	1.84	1.15
* 13	Literature Search	1.84	1.23
* 14	Programmed Instruction	1.82	1.11
* 15	Formative Evaluation	1.76	1.27
* 16	Role Playing	1.35	1.06
* 17	Sequence of Objectives	1.71	1.23
* 18	Summative Evaluation	1.71	1.27
* 19	Standardized Tests	1.65	1.10
* 20	Case Studies	1.24	1.17
* 21	Computer Search	1.60	1.17
* 22	Micro Teaching	1.60	1.18
* 23	Task Analysis	1.59	1.24
* 24	Content Analysis	1.58	1.17
* 25	Interviewing Users	1.57	1.31
* 26	Discovery Technique	1.53	1.15
* 27	Appraisal Interview	1.52	1.19
* 28	Criterion Reference Meas.	1.52	1.20
29	Simulation (Gaming)	1.49	1.19
30	Computer Assisted Instruct.	1.46	1.08
31	Cost-Benefit Analysis	1.34	1.17
32	Behaviour Modelling	1.29	1.10
33	Authoritative Opinion	1.26	1.11
34	Program Eval. Review Tech.	1.23	1.20
35	Contract Plan	1.21	1.14
36	Gagne's Taxonomy	1.20	1.21
37	Program Plan. Budget. System	1.18	1.22
38	Linear Programming	1.13	1.19
39	Learner Verification & Revis.	1.13	1.21
40	Likert Scale	1.06	1.22
41	Technical Conference	1.00	1.15
42	Critical Path Method (CPM)	.88	1.14
43	Observation Interview (eg. Time-Motion Studies)	.87	.99
44	In-Basket Technique	.79	1.07
45	Cognitive Mapping	.78	1.01
46	Krathwohl's Taxonomy	.77	1.09
+ 47	Delphi Technique	.41	1.03
+ 48	Shaping	.71	1.04
+ 49	Card Sort	.71	1.06
+ 50	Function Analysis	.64	1.00
+ 51	Information Mapping	.63	1.01
+ 52	Discrepancy Evaluation	.63	1.02
+ 53	Instructional Analysis	.57	1.03
+ 54	Decision Tables	.56	.94
+ 55	Critical Incidents Technique	.54	.96
+ 56	Nominal Group Process	.53	.93
+ 57	Stake Model (Evaluation)	.49	.88
+ 58	Force-Field Analysis	.47	.89
+ 59	Gannt Chart	.45	.93
+ 60	Mathetics	.39	.84

(* = Significant competency among surveyed developers)
(+ = Unfamiliar to surveyed developers)

tional Development's potential, and others have warned the field not to ignore the elementary and secondary levels, including works by the previously noted Braden & Terrell and Bass, et. al. In Canada, Duke⁸ offers a set of convincing arguments for the expansion of ID activities within the public school system. One such argument is the presentation of compelling evidence of cost-effectiveness. Particularly in an era of financial restraints, the promise of cost-effectiveness should be welcomed by most administrators and ID may subsequently secure a foothold in the elementary panel as a result (Wilkinson⁹; Lent¹⁰; Klein & Doughty¹¹).

3. Canadian instructional developers should be prepared to combat the prevailing belief that instructional developers and such interfacing professionals as librarians and media specialists are expendable in an era of financial restraints.

In times of budget cuts and financial restraints, areas associated with instructional developers are often considered to be luxuries and hence expendable (Bratton¹²; Bennett¹³). Selby¹⁴ observes that the "impression that screen education is concerned with trivia still has enormous currency", and Pipes¹⁵ suggests that school media specialists are easy targets for staff cuts; Cooper¹⁶ makes a similar assertion with regard to library personnel. Regardless of the value and worthwhile nature of these programs, many services have been crippled due to government funding cuts (Lee¹⁷). This is a major problem that must be addressed by developers. The government must be urged to provide funding for entire processes of instructional design and implementation, rather than just seed money for establishing new programs without concern for continuation. Developers must be prepared to **prove** that instructional development is not a passing fashion, but rather a viable force for preventing, as well as solving instructional problems (Davis¹⁸). One method of insuring this recognition is to institutionalize the field of Instructional Development in Canada. Examples will be presented in the following two implications.

4. A Credentials Committee could be formed in Canada in order to define and certify practicing instructional developers.

In order to attain the level of recognition that Canadian instructional developers need, as discussed above, they must be prepared to formulate a committee whose job it will be to identify the competencies, methodologies, and tasks of the profession. Bass, Lumsden, and Dills¹⁹ have noted a similar organization in the United States, while pertinent discussions on instructional development competen-

cies may be found within the works of Bratton²⁰, Silber²¹, and the Task Force on ID Certification²². The creation of a Credentials Committee in Canada could be executed by an Instructional Development Special Interest Group, within AMTEC.

5. A communications network could be formed between and among Canadian Instructional Developers.

One of the prime objectives of the Division of Instructional Development (DID) within the Association for Educational Communications & Technology (AECT), is the facilitation of communication among instructional developers, both on a person-to-person basis and through written communication (Bass, et. al.²³). This concept not only serves to share ideas and practices, but to institutionalize the profession, one of the requisites for attaining the needed recognition that has been discussed above. A special interest group of instructional developers should be operationalized within AMTEC. It would naturally follow that such a group could formally codify its aims and objectives, identify and define its competencies, and thence certify its members. A special section in the *Canadian Journal of Educational Communication* and/or a regular news letter would then tend to cement its membership by opening a communications network among those Canadian professionals who are practising instructional development activities.

Conclusion

The foregoing has presented a summary of the findings of this study. From those findings, a set of conclusions were drawn concerning the state-of-the-art of Instructional Development in Canada. The work has concluded with a presentation of five implications for the future of ID in Canada. It must be noted that Instructional Development in general and field techniques in particular could play a major role in the present and future directions of education in Canada. However, developers must be prepared to assert their professionalism, both in terms of **who they are** as well as **what they can do**, in order to assure their due recognition and worth, particularly in these times of financial restrictions.

FOOTNOTES

¹ Gentry, C.G. "A management framework for program development techniques." *Journal of Instructional development*, 1980-81, 4(2), pp. 33-37.

² Nie, N.H. Hull, C.H. et.al. *Statistical package for the social sciences* (2nd ed.). New York: McGraw-Hill, 1975.

TABLE 3

VALUE TO INSTRUCTIONAL DEVELOPMENT

RANK	TECHNIQUE	MEAN	S.D.
* 1	Feedback	2.11	1.20
* 2	Long-Range Planning	1.98	1.14
* 3	Needs Assessment	1.97	1.18
* 4	Field Test	1.96	1.23
* 5	Brainstorming	1.92	1.01
* 6	Multi-Image/Multi-Media Pres.	1.90	.99
* 7	Story Boarding	1.78	1.19
* 8	Computer Assisted Instruct.	1.77	1.16
* 9	Flowcharting	1.75	1.10
* 10	Literature Search	1.71	1.20
* 11	Sequencing of Objectives	1.71	1.26
* 12	Formative Evaluation	1.69	1.29
* 13	Questionnaire	1.63	1.12
* 14	Bloom's Taxonomy	1.60	1.20
* 15	Content Analysis	1.60	1.24
* 16	Management by Objectives	1.59	1.12
* 17	Computer Search	1.58	1.18
* 18	Criterion Reference Meas.	1.56	1.23
* 19	Task Analysis (Task Desc.)	1.55	1.28
* 20	Summative Evaluation	1.51	1.24
21	Interviewing Users	1.43	1.29
22	Case Studies	1.42	1.18
23	Appraisal Interview	1.41	1.24
24	Programmed Instruction	1.39	1.00
25	Micro Teaching	1.36	1.16
26	Checklists	1.35	1.05
27	Discovery Technique	1.33	1.13
28	Simulation (Gaming)	1.31	1.17
29	Standardized Tests	1.30	1.06
30	Role Playing	1.27	1.08
31	Cost-Benefit Analysis	1.23	1.15
32	Learner Verification & Revis.	1.19	1.28
33	Behaviour Modelling	1.16	1.14
34	Authoritative Opinion	1.12	1.14
35	Gagne's Taxonomy	1.06	1.16
36	Contract Plan	1.05	1.07
37	Prog. Eval. Review Technique	1.05	1.29
38	Program Plan. Budget. System	1.00	1.12
39	Likert Scale	.95	1.15
40	Technical Conference	.94	1.08
41	Linear Programming	.85	.99
42	Cognitive Mapping	.84	1.13
43	Critical Path Method (CPM)	.79	1.04
44	Observation Interview (eg. Time-Motion Studies)	.70	.90
45	Krathwohl's Taxonomy	.65	1.03
46	Discrepancy Evaluation	.63	1.01
47	Function Analysis	.62	.97
48	Delphi Technique	.62	.92
49	Critical Incidents Technique	.54	.95
50	Information Mapping	.53	.93
51	Shaping	.53	.93
52	Decision Tables	.53	.86
53	Instructional Analysis Kit	.52	.97
54	In-Basket Technique	.49	.68
55	Nominal Group Process	.48	.90
56	Stake Model (Evaluation)	.43	.85
57	Gantt Chart	.38	.82
58	Mathetics	.38	.81
59	Force-Field Analysis	.37	.79
60	Card Sort	.36	.71

(* = Value to Instructional Development)

TABLE 4

DEGREE TO WHICH INSTITUTION TEACHES

RANK	TECHNIQUE	MEAN	S.D.
1	Multi-Image/Multi-Media	.63	1.06
2	Formative Evaluation	.63	1.13
3	Feedback	.60	1.11
4	Summative Evaluation	.56	1.05
5	Literature Search	.54	1.04
6	Bloom's Taxonomy	.53	.96
7	Standardized Tests	.52	.96
8	Computer Assisted Instruct.	.51	.95
9	Criterion Reference Meas.	.50	.97
10	Story Boarding	.49	.96
11	Task Analysis	.49	.93
12	Needs Assessment	.48	.88
13	Questionnaire	.46	.92
14	Sequence of Objectives	.46	.92
15	Long-Range Planning	.46	.89
16	Field Test	.45	.94
17	Micro Teaching	.43	.89
18	Programmed Instruction	.43	.85
19	Simulation (Gaming)	.43	.85
20	Brainstorming	.41	.79
21	Management by Objectives	.38	.76
22	Discovery Technique	.37	.81
23	Flowcharting	1.59	.77
24	Content Analysis	.37	.77
25	Role Playing	.37	.75
26	Interviewing Users	.36	.81
27	Case Studies	.36	.79
28	Computer Search	.35	.78
29	Learner Verification & Revision	.34	.83
30	Gagne's Taxonomy	.33	.74
31	Behaviour Modelling	.32	.71
32	Likert Scale	.31	.77
33	Checklists	.29	.68
34	Linear Programming	.28	.71
35	Appraisal Interview	.28	.65
36	Krathwohl's Taxonomy	.26	.73
37	Authoritative Opinion	.26	.69
38	Program Eval. Review Technique	.26	.68
39	Contract Plan	.26	.61
40	Cost-Benefit Analysis	.21	.57
41	Cognitive Mapping	.18	.56
42	Critical Path Method (CPM)	.17	.50
43	Delphi Technique	.16	.48
44	Instructional Analysis Kit	.15	.57
45	Information Mapping	.14	.50
46	Program Plan. Budget. System	.13	.46
47	Stake Model (Evaluation)	.13	.45
48	Discrepancy Evaluation	.13	.45
49	Technical Conference	.13	.43
50	Critical Incidents Technique	.13	.41
51	Decision Tables	.12	.46
52	Shaping	.12	.44
53	In-Basketg Technique	.11	.39
54	Function Analysis	.10	.40
55	Observation Interview (eg. Time-Motion Studies)	.09	.32
56	Mathetics	.08	.38
57	Nominal Group Process	.08	.36
58	Gantt Chart	.07	.29
59	Card Sort	.06	.24
60	Force-Field Analysis	.04	.19

³ Braden, R.A. & Terrell, W.R. "The challenge from within: Some unpopular views on instructional development topics." In R.K. Bass & D.B. Lumsden (ed.), *Instructional development: the state of the art*, Columbus, Ohio: Collegiate Publishing, 1978, p. 229.

⁴ Bass, R.K. Lumsden, D.B. & Dills, C.R. "Instructional development: The state of the art. In R.K. Bass & D.B. Lumsden (ed.), *Instructional development: the state of the art*, Columbus, Ohio: Collegiate Publishing, 1978, p. 243.

⁵ Powell, A.J. "Canada's involvement in standards for education & training equipment & systems." *Media Message*, 1979, 8(4), p. 23.

⁶ Schwier, R.A. & Wickett, R. "Roles for instructional development in adult education." *Media Message*, 1981, 10(4), p. 23.

⁷ Gustafson, K.L. "Can you really do instructional development on two cents a day?" *Journal of Instructional development*, 1977, 1(1), p. 29.

⁸ Duke, W.R. "Trends in educational finance and their implications for educational technology." *Media Message*, 1981, 10(3), p. 6.

⁹ Wilkinson, G.L. "Economic evaluation in/of instructional development." In R.K. Bass, & D.B. Lumsden (ed.), *Instructional development: the state of the art*, Columbus, Ohio: Collegiate Publishing, 1978, pp. 171-200.

¹⁰ Lent, R. "A model for applying cost effectiveness analysis to decisions involving the use of instructional technology." *Journal of Instructional development*, 1979, 3(1), pp. 26-32.

¹¹ Klein, J. & Doughty, P. "Cost-effectiveness evaluation: A case study of an innovative program in higher education." *Journal of Instructional development*, 1980, 3(3), pp. 19-24.

¹² Bratton, B. "Instructional improvement centers in higher education." In R.K. Bass & D.B. Lumsden (ed.), *Instructional development: the state of the art*, Columbus, Ohio: Collegiate Publishing, 1978, p. 148.

¹³ Bennett, T.L. "What's happening, 1980s?" *Media Message*, 1980, 9(4), p. 6.

¹⁴ Selby, S.A. "Social and economic limits on screen education in Windsor secondary schools." *Media Message*, 1980, 10(1), p. 13.

Continued on page 22.

15 Pipes L. "The school media specialist." *Instructional Innovator*, 1981, 26(8), p. 15.

16 Cooper, M. "Effective teaching: Relating objectives, resources and learning styles." *Media Message*, 1980, 10(1), p. 5.

17 Lee D. "State-of-the-art: AV hardware." *Instructional Innovator*, 1981, 26(5), p. 17.

18 Davis, I.K. "Instructional development: Fruit fly or lemming?" *Journal of Instructional development*, 1978, 1(2), p. 6.

19 Bass, R.K., et.al., *op cit.*, p. 234.

20 Bratton, B. "The instructional development specialist as consultant." *Journal of Instructional development*, 1980, 3(2), pp. 2-8.

21 Silber, K.H. "Applying Piaget's stages of intellectual development and Guilford's structure of intellect model to training instructional developers." *Journal of Instructional development*, 1981, 4(3), pp. 33-40.

22 Task force on ID certification, AECT division of instructional development, competencies for the instructional/training development professional. *Journal of Instructional development*, 1981, 5(1), pp. 14-15.

23 Bass, R.K., et.al., *op. cit.*, p. 233. □

PREPARING PERSONNEL

Continued from page 11.

Standards and Guidelines for Approval of Instructions and Programs for Teacher Education. Division of Teacher Education/North Carolina Department of Public Instruction, May, 1977, pp. 11-22.

Wood, Johanna S. "The Role of Media Specialists in the Curriculum Process," *School Library Journal*, XXIII, No. 1, September, 1976, 20.

Wynn, Richard. "The Wynn Principle," *Phi Delta Kappan*, LIV, No. 6, February, 1973. □

THE MASCULINE MYSTIQUE



A Film Produced by National Film Board of Canada

This unique combination of fiction and fact is a feature-length glimpse into the lives of four men who are trying to find their way in the baffling 1980's world of male-female relationships. Can they ever learn to adjust to a relationship with a modern woman? Ron Base of the Toronto Star has called it the "real revenge of the nerds" and "the most devastating indictment of heterosexuality ever produced." Variety calls it "fascinating, full of intrinsically complex human flaws and surprises." Decide for yourself!

Now available for preview for your local NFB office.



National
Film Board
of Canada

Office
national du film
du Canada



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



**CALGARY, ALBERTA
JUNE 16 TO 19, 1985.
CONFERENCE REGISTRATION FORM**
(Please make copies if needed)

DELEGATE _____ (Last name)
(Mr., Mrs., Ms., Dr., etc.) (First name)

POSITION _____ ORGANIZATION _____

MAILING ADDRESS _____
City _____ Province/State _____ Postal Code _____

TELEPHONE () _____ () _____
Home Business

COMPANION(S) _____
Name(s)

Please check the appropriate boxes below

PRE-CONFERENCE WORKSHOPS (Sunday June 16 1985)

Videodisc (includes lunch) Session _____ \$60.00 \$50.00
Computer Evaluation Session _____ \$30.00 \$25.00

\$ _____

CONFERENCE COMPREHENSIVE REGISTRATION (Sunday June 16 - Wednesday June 19)
Includes Sunday evening buffet, reception and entertainment, three luncheons, Monday evening banquet and dance (but not Tuesday evening activities),
Full registration \$160.00 \$140.00

\$ _____

DAILY REGISTRATION (includes luncheon)

Monday \$60.00
Tuesday \$60.00
Wednesday \$40.00

AMTEC MEMBERSHIP (new or renewal)

Student \$20.00
Individual \$40.00
Institutional \$60.00
Commercial \$110.00

\$ _____

INDIVIDUAL EVENTS

Luncheon _____ tickets @ \$10.00, Monday Tuesday Wednesday \$ _____
Monday evening banquet and dance _____ tickets @ \$25.00 \$ _____
Companions' Program — Daily tours (including lunch) will be notified at the Conference
 Interested Not interested

Tuesday evening Whoop-Up Rodeo and Barbeque (limit: 350 participants)
_____ @ \$35.00 each \$ _____

TOTAL REGISTRATION FEE \$ _____

Please complete the Registration form, and mail together with a cheque, bank draft or money order in CANADIAN FUNDS, made payable to THE UNIVERSITY OF CALGARY, to:

Mrs. Lois Kokoski
Conference Office,
The University of Calgary,
CALGARY, Alberta, CANADA T2N 1N4
(403) 284 5051

CONSORTIUM
Continued from page 9.

BCIT and one at Western Communications, and another under testing at the University of Victoria. Twelve moderators are stored in larger communities, usually at regional colleges, and 11 speaker-phones are stored in an additional 11 secondary centers. Permanent operation of equipment and schedules is handled at BCIT. Consortium members are free to use any equipment within the system not already scheduled. A record of usage is maintained and bridge rentals are cross charged monthly. The use of all other equipment is balanced and accounted for quarterly.

Each institution in the consortium operates independently, confirming only that equipment and facilities are available. The choice of programs and how the teleconferencing is used by an instructor varies among institutions. A summary of each institution's current activities follows.

INSTITUTIONAL EXPERIENCE

Simon Fraser University

At Simon Fraser University, teleconferencing is presently being used by the Faculty of Education in its extensive program for students and teachers throughout the interior of British Columbia. Teleconferencing is still in the exploratory stage and the three activities described are quite different. The first is a series of sessions on microcomputers for teachers, the second enhances a credit course being offered by correspondence and the third concerns program administration. All took place during 1983.

"Microcomputers in B.C. Schools" was a four-part series of ninety-minute sessions chaired from SFU with six other sites participating. About 40 participated each time and there was a mix of secondary and primary school teachers, administrators and librarians. The chairman was an expert in the topic of the day. Microcomputers was a "hot" item in the schools and teleconferencing offered a way to exchange experiences with this new technology right across the province without extensive and expensive travel. Each site had a coordinator, pre-conference materials were distributed and technical problems were minimal. Most participants rated the teleconference process itself highly so that it was the level of satisfaction with content which dictated overall reactions to each session.

Satisfaction with the instructional seminar associated with the correspondence course "Classroom Management and Discipline" was also high. This sixty-minute session gave 42 students scattered over 13 sites in B.C. and two

sites in Alberta an otherwise unavailable opportunity to meet each other and the instructor. Only three sites had more than one person in attendance. The two bridges from BCIT and Western were interconnected for this teleconference and a mix of hand sets, speaker-phones and conveners (from a variety of manufacturers) was used without technical problems.

In another teleconference, as an alternative to flying the University's five off-campus secretaries to Vancouver, a sixty-minute teleconference allowed group discussions of site administration. This meeting provided for both the exchange of problems and solutions and coordination with the University. All participants agreed the teleconference was highly cost-effective.

In the future, the Faculty of Education plans the continuing use of audio teleconferencing, particularly in light of on-going budget reductions as an alternative to flying instructors and administrators to and from Vancouver. Experience has shown that pre-meeting materials, a detailed agenda, well-chaired sessions, and specific protocols are important, as is a technical test prior to each session.

British Columbia Institute of Technology

The British Columbia Institute of Technology is a two-year institution offering diploma programs in business, engineering and health to approximately 4,000 full-time students each year. BCIT has had a strong continuing education program since 1964 and a distance education service since 1974. It has deliberately experimented with new methods of reaching off-campus students for the past eight years. The Distance Education Department is responsible for the operation of the audio teleconferencing bridge and for developing widespread audio teleconferencing expertise within the institution. Approximately 4,000 students are registered each year in a variety of part-time off-campus programs. Many of the students are on employer-supported engineering and health related programs. Approximately 3,000 are in independent study courses. Audio teleconferencing is used for:

- teletutoring enrichment in selected courses with generally one to three people per site.
- instructor contact before, during and after KNOW broadcasts.
- short, single-concept seminars supported with print packages.
- linking disabled homebound students with regular campus classes.
- a variety of administrative and program development meetings.

The BCIT Teleconferencing Center has approximately \$25,000 a year in fixed operating costs. Time not used by

members of the consortium is sold to a variety of contract users, mainly professional societies for their continuing education programs. Users believe they have demonstrated very significant cost savings, user acceptance, and a revenue generation potential while maintaining educational standards.

BCIT AND CONTRACTOR USE — 1983/84

	No. of Events	Total Hours	Users Reached
Teletutoring	8	76	45
Short Seminars	35	64	950
Day-Long Seminars	16	132	2730
Meetings	6	15	45

Open Learning Institute

The Open Learning Institute has begun, over the past year, to use audio teleconferencing for administrative and instructional purposes. Academic advisors located in the seven regional advising centers and course tutors in their homes have used audio teleconferencing for staff meetings, professional development seminars and course planning.

Course tutors have also held audio teleconferencing seminars immediately following television broadcasts over KNOW. Their purpose has been to discuss and clarify issues arising from the broadcast. As expected, other course-related issues have also been raised. In one case, a learner who was ready to withdraw from a course did not after getting support and encouragement from other learners. Despite the positive cases, the experience of OLI thus far has indicated that most home learners are reluctant to phone at a designated time for an optional teleconference. An evaluation planned for the project described in this paper will examine the issue more closely.

University of Victoria

The University of Victoria has placed special emphasis on serving learners throughout the province. Despite the geographic and climatic conditions of British Columbia, the University of Victoria's Division of University Extensions has developed an extensive off-campus program offering a variety of courses throughout B.C. Moving from face-to-face instruction and expanding to correspondence-based courses with tutorials in 1978, the University of Victoria has steadily diversified its means of course delivery. The Anik-B satellite was used experimentally to deliver both degree and professional development courses. Audio feedback by telephone in that project was an important innovation allowing students to "phone in and talk" to the instructor live on the air. This course delivery model has continued using the facilities of the Knowledge Network. Recently, a different

approach to interaction has been adopted. The major portion of audio interaction between student and instructor occurs off air after the televised programs through the use of teleconferencing.

In addition to this mixed media approach, the University is offering courses based on audio teleconferencing, with extensive print materials as the primary educational technologies involved. As television broadcast time becomes more and more scarce and difficult to schedule, this latter approach has increasing appeal.

In January 1983, given the anticipated need at the University of Victoria and its distance from Vancouver, the decision was made to acquire a 10-port audio teleconferencing bridge. At present, the University is testing a variety of products to determine which is best suited for present and anticipated programming needs. Some technical problems of static on lines, gain control and clipping are still to be solved.

The University's involvement with the informal audio teleconferencing consortium has provided the access to hardware, particularly at the receive sites, and an organizational model which allows for increased and more effective course delivery throughout the province.

The University of Victoria utilized the audio teleconferencing for 11 one-hour sessions in eight separate locations throughout the province during the pilot period of operation.

Despite the initial technical difficulties associated with the testing of various bridging equipment as described above, the results have proved more positive than negative. Comments on the student evaluation forms indicate most were prepared to give teleconferencing a chance and by the end of the courses most felt it was an acceptable, effective way to receive instruction.

In terms of integration with live interactive systems, both off air and on air, the experience has been more uniformly rewarding. Students have reacted positively to holding a "private" conversation off air with the instructor and a variety of fellow students.

In the future, the University of Victoria sees continued and expanded use of audio teleconferencing, when the technical difficulties can be overcome, in the areas of course delivery, practicum seminars in the professional development fields and tutorial support to students.

In addition, the integration of computer conferencing and audio teleconferencing holds exciting possibilities for distant learners in B.C.

University of British Columbia

At the University of British Columbia, the major user of teleconferencing has been the Division of Continuing Education in the Health Sciences. CEHS provides

professional development programs for practicing health professionals such as physicians, dentists, pharmacists, nurses and dietitians.

In March 1983, an interprofessional audio teleconference was held that was jointly sponsored by Continuing Pharmacy Education and Continuing Education in Nutrition and Dietetics. Due to the success of that pilot program, it was decided to offer two separate programs in the spring of 1984. Continuing Pharmacy Education provided a series of lectures that involved 18 different communities in British Columbia. The program included a speaker who lectured from his home base at Washington State University in Spokane, Washington. Continuing Education in Nutrition and Dietetics offered a series of lectures on nutritional biochemistry that had registrants from nine B.C. communities.

Physicians in the province are also starting to enjoy the benefits of audio teleconferencing. In addition to lectures offered through the Royal College of Physicians and Surgeons from Toronto, Continuing Medical Education at UBC is presenting a series of audio teleconferences this spring for family physicians. Plans are underway to tap into a series of live lectures held in Vancouver and to extend them to other communities through audio teleconferencing.

As universities continue to be affected by cutbacks in operational budgets, teleconferencing will play a larger role in distance education programs for many faculties. It will provide more people in the province access to a greater variety of course offerings and educational opportunities.

The equipment and facilities made possible through the consortium have served to introduce many new users to teleconferencing in B.C. at a relatively low cost. This will likely lead to increased activity and new applications on a regional basis within the province.

Results

The results of teleconferencing activities since the inception of the consortium have been encouraging. More hours of teleconferencing were conducted and are being planned now that equipment and facilities are more easily accessible in many communities in British Columbia. Prior to September of 1983, equipment was transferred from community to community as required in a random fashion. This proved to be very expensive and time-consuming on the part of teleconference planners and site coordinators. However, with specific sites and facilities identified (see map), shipping costs were reduced and less time was required to coordinate programs. This led to a greater number of programs being offered by a more diverse group of users.

From September 1982 to August 1983 there were 1,952 student contact hours of programming recorded by registered students of the educational institutions concerned. (Student contact hours = number of hours of programming x number of participants.) From September 1983 to August 1984 this figure will have increased to an estimated 3,537 student contact hours. This does not include the use of teleconferencing as an adjunct to interactive educational television programs offered by the University of Victoria and the University of British Columbia through the facilities of the Knowledge Network. It also does not take into account teleconferencing offered professional institutions such as the Certified General Accountants of B.C., the Continuing Legal Education Society of B.C. and the Corporation of B.C. Land Surveyors.

These groups were able to reach many more of their constituents in the province at a dramatically reduced cost than was possible with traditional methods of instruction such as sending instructors to remote locations.

The results of teleconferencing activities will continue to be monitored by the consortium and will be analyzed periodically to detect trends in usage and application.

Case Studies

Administrative Meeting: A professional association with its nine governing council members living and working in widely separate communities holds monthly meetings at Vancouver that normally require overnight travel for five members. The costs to the association are a minimum of \$1,200 per meeting. Members meet for 8 to 12 hours each meeting. Teleconferencing has been used for some recent meetings and has reduced the costs to less than \$300 for a four hour, five site meeting including one member from Ottawa.

In-Service Training: A Vancouver educational institution offered a lunch time course for "Secretaries Who Supervise". Eight one hour classes involving five sites and ten people were held for a cost of \$1,800. Without teleconferencing, the class could only have been held by bringing the students to a central classroom for a single day at an estimated cost of \$2,425 for travel and accommodation plus an estimated \$950 for value of staff time lost.

Professional Continuing Education: A professional association throughout B.C. regularly conducts updating day-long seminars. A recent Saturday seminar registered 385 students with total fee revenue approximately \$43,000. Teleconferencing charges for ten locations for the 090 to 1630 hour seminar were \$2,122. A cost reduction was made by making all long distance connections before the pre-0800 hour, 50 per cent discount rate

ended. Delivery costs per student were 74¢ per hour.

FUTURE DIRECTIONS

The use of audio teleconferencing as a means of delivering instruction to off-campus postsecondary students is clearly increasing rapidly in British Columbia. Over the next few years, the main users will continue to be institutions having a provincial rather than regional mandate. An important new user group that is expected to appear by 1985 is rural community colleges with widely dispersed student populations. All educational institutions in British Columbia are facing reductions in government operating grants but are expected to provide the same or increased levels of service. Administrators will look to easily implemented educational technology for generating student contact hours and new fee revenue. Programmers will use teleconferencing to replace travelling instructors wherever possible.

During 1984/85, at least one institution plans to hire part-time site coordinators either directly or in conjunction with a

local college or another member of the consortium. The coordinators would be residents of the most commonly used teleconference centers. Their function would be to handle all on-site activities from registration to operation of receive equipment, thereby reducing the chance of technical error, and promoting the use of teleconferencing in their communities.

Experiments are already being conducted in the transfer of data along with voice information. By 1985 some regular use of computers in audio teleconferences should be a reality.

Professional societies will likely increase their use of audio teleconferencing independently of educational institutions, unless the institutions can provide the specialized, short, up-grading courses and seminars that the societies want for their members. There are indications that non-institutional educational use may dominate the schedule and larger users will purchase their own equipment by 1985.

The present, informal consortium structure will continue to exist only as long as scheduling remains flexible, equipment contributors benefit from the sharing, and

diversity in system use remains possible. Any attempts to regulate the consortium activities would likely result in individual equipment owners withdrawing and continuing to operate by renting portable equipment and accessing the public telephone system.

CONCLUSION

Audio teleconferencing can be an important part of educational learning systems for distant students. However, for the maximum cost benefits and accessibility, some form of workable coordination of users and equipment is essential. Informal arrangements for coordination based on communication and trust provide a more workable system, at this time, for British Columbia teleconferencing providers than would a more formal, legalistic arrangement.

This paper was originally prepared for the International Teleconference Symposium, held in Toronto, April 3-5, 1984. Permission to reprint in CJEC has been granted by Teleglobe Canada. □

NOTES FOR THE GUIDANCE OF AUTHORS

The Editor is always pleased to receive for consideration articles on aspects of educational technology, media use and research likely to be of interest to readers. Topics of interest include: computer assisted instruction, learning resources centres, communication, evaluation, instructional design, simulation, gaming, and other aspects of the use of technology in the learning process. Two primary forms of contributions are welcomed: refereed articles, and notes and non-refereed articles. It is important that contributions conform to the notes below.

Notes and Non-Refereed Articles

- Contributions for this category are welcomed from all members. Writers are encouraged to use a familiar, casual style. Jargon should be avoided.
- Contributors to this section surrender to the editor the responsibility of final copy edit. Articles will not be returned for author approval prior to publication.
- Contributions to this section do not require additional notes or references. If these are included they must adhere to the style guidelines for refereed ar-

ticles.

- Include your name, position, institution and mailing address.
- Type contributions on 8 1/2 x 11 paper using a 60 stroke line, and double-spaced. Do not break words at the end of a line.
- Non-refereed articles should be from one to five pages in length. Notes of upcoming events or other news should be one paragraph in length.

Refereed Papers

- Manuscripts should be 5-20 double spaced, typed pages.
- Include an abstract of about 100 to 150 words.
- The author's name, position, institution, and mailing address should be on a separate page.
- Authors should send three copies.
- Contributions are accepted on condition that the material is original and the copyright vests in the Association for Media and Technology in Education in Canada. Contributors must obtain all necessary permissions and pay any fees for the use of materials already subject to copyright.

- Type contributions on 8 1/2 x 11 paper, using a 60-stroke line. Do not break words at the end of a line.
- Main headings** should be centered and typed in upper case. **Secondary headings** should be typed at the left-hand margin, using upper and lower case underlined.
- All tables, diagrams, figures, or photographs should be submitted in camera ready format. Diagrams, tables, and figures should be provided on separate sheets of paper. The position of each item in the text should be indicated as follows:

Table 1 about here.

- References in the text should employ the author/date format (eg: Kowal, 1982). All references should be listed at the end of the paper in alphabetical order. The American Psychological Association Style Manual (2nd edition) should be referred to by all authors to ensure consistent reference style.
- Spelling should conform to the Merriam-Webster **Third New International Dictionary**.

1043
19482
V. 14
3
1985
Educ. M.

Canadian Journal of
Educational Communication
Vol. 14 No. 3
June, 1985
ISSN 0710-4340

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

UNIVERSITY LIBRARY

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