

Richard F. Lewis

Serafini, Shirley and Andrieu, Michel *The information revolution and its implications for Canada*, Hull, Quebec: Canadian Government Publishing Centre, 1981, 113 pages, \$4.95.

As professionals in the field of communication, we will have to learn more about the field of information, storage and retrieval. The book, written by people at the Communications Economics branch of the Department of Communications in Ottawa, places considerable emphasis on the economic impact of the information revolution. It considers the economic ramifications of the information revolution on a wide range of areas in Canadian society; but implications unrelated to economics are given only minimal coverage.

This book does not give in-depth coverage on why the information revolution is occurring. Although the subject is mentioned, the reader would be wise to consult *Gutenberg 2* by Godfrey and Parkhill (Porcupic Press, 1979) for detailed information. It does, however, contain an excellent chapter on the implications of the information revolution. It also suggests an information plan for Canada. In this review, I would like to deal with the impact of the information revolution on Canadian sovereignty, on the individual, and on the Canadian economy. I would also like to briefly describe the proposed plan for dealing with the effects of the information revolution on Canada.

One principle is repeated frequently in the book: the information revolution is unavoidable, but by planning and concerted action, Canada can realize economic and social benefits and can avoid undesirable effects.

Sovereignty

Canada has been trying to assert its sovereignty in a number of ways, including the development of Canadian learning materials and television content regulations. The authors of this work suggest that the advances in technology will make Canadian sovereignty more difficult to maintain. Improved telecommunications techniques will increase public access to U.S. television programs, thus decreasing viewing of Canadian materials. In data processing, improved digital transmission techniques mean that Canada could find itself using U.S. central computers for data processing. This means that databanks could be based in the United States under American legal regulations rather than in Canada. The expansion of

videotex may mean that U.S. software producers could flood the Canadian market making Canadian content less desirable.

How realistic are the authors' perspectives? Canadians now watch more U.S. television than Canadian. In addition there is evidence to suggest that Canadians prefer to watch U.S. television. This point naturally raises the question of whether the global village created by the information revolution will leave room for any single country's culture.

In terms of data processing, we can be reasonably sure that the forecast will be accurate, because of the increasing trend to centralization. Centralized databanks demand much financial backing thus indicating the United States as a site. In the field of videotex, the adoption of the Telidon standard by the U.S. indicates that Canadians could be overwhelmed by American-made Telidon pages. As a result, we could have the latest Canadian technology educating with an American brain.

Effects on the Individual

The individual Canadian is likely to be affected by the changes in a number of ways: threats to privacy and artificially imposed isolation. Increased interconnection of databanks and sharing of information on individuals may mean that a person's records will be accessible to a wide range of users with many interests.

Electronic surveillance of workers using electronic devices such as cash registers could also become a problem. Systems used to control sales and inventory could easily be modified to monitor individuals. Safeguards regarding storage and access to information will have to be developed to avoid invasion of privacy.

People in our society could become electronic hermits, connected to the outside world only through their Telidon terminals. They could learn through distance education, shop through catalogues, write using text processors, and bank through electronic funds transfer systems without ever leaving home. Although this scenario may be appealing for Canadians in February, the implications for social interaction are grave.

The book places too little emphasis on privacy and individual rights. The title leads one to believe that the implications of the information revolution will receive attention. However, it stresses the economic and merely scratches the surface of the personal and social implications.

Effects on the Economy

Most of the book focusses on the effect of the information revolution on the economy. Its effects on workers, design, engineering and production is presented in some detail. Specifically, the information worker will see changes in job tasks and output. Increased productivity will mean that fewer but more highly trained professionals are needed to perform the same tasks. Reduced employ-

ment could be counterbalanced by increased demand for information. The authors suggest that increased leisure time may increase the desire for educational materials thus stabilizing the demand for information workers.

One chapter deals with the experience of Japan, Sweden, the United Kingdom, the United States and France in dealing with the information revolution. Each country's production techniques are analyzed and estimates are made on the economic impact of the information revolution. Production of information machines, data processing equipment, information electronics and software are discussed. The authors consider Canada with its advanced technology in satellite communication, cable television and switching and transmission techniques could take a leadership role in transferring technology to other countries.

The topic of economics is the strength of this book. The reader seeking information on the implications of the information revolution on Canadian business will certainly find a great deal of useful information here.

Action Needed

The book calls for action from government and private sources to develop an information plan for Canada. Critical to the whole process is the application and diffusion of information technology throughout every sector of the economy. People will have to use more of the potential of information technology in every phase of their lives from learning to employment and use of leisure time. Diffusion to every sector of the economy will mean increased employment in design, engineering and production areas of information technology and will also allow for the development of expertise useful in exporting technology. The authors suggest that Canada should encourage applications for information technology in areas where Canada has a competitive advantage. New information-producing companies should be nurtured and protected. Workers will need to be retrained while civil liberties are protected.

In the proposed plan of action the authors assume that Canada should adopt the new information technologies because of the potential benefits. However, the economic benefits may mean that a number of undesirable effects on the individual and on the society will result.

Professionals in a variety of fields, especially those of us in communications may need to challenge the assumptions made by the authors. We will need to ensure that civil liberties are protected. We will need to ensure that decisions in the field of communications will benefit individual Canadians and not just established shareholders in business and industry.

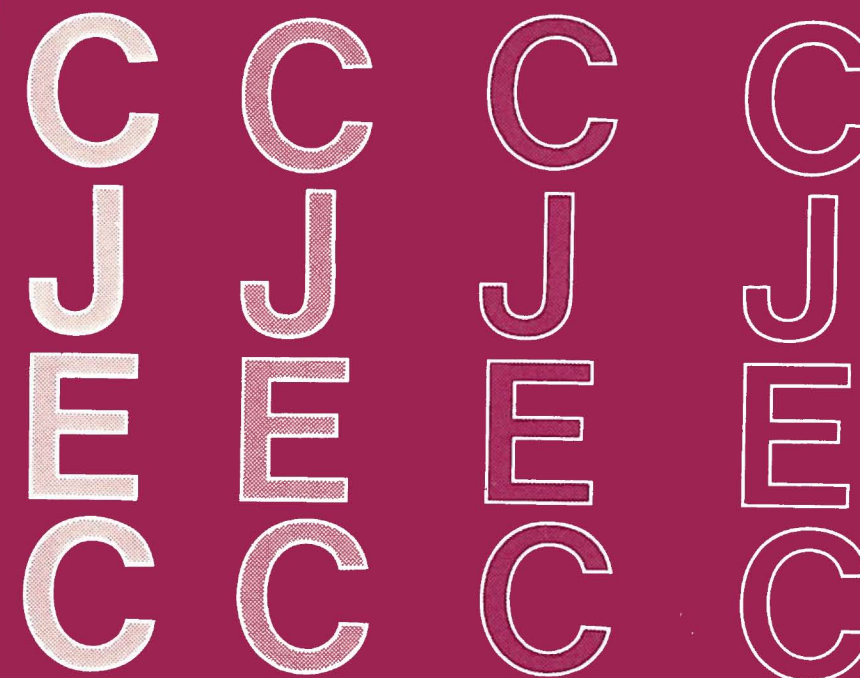
The book is well worth its purchase price. We need to know more about the issues raised by the information revolution. Only through knowledge can we deal intelligently and effectively with the inevitable changes in society.

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Towards a Definition of Educational Technology

Denis Hlynka

What is educational technology? The question is simple; the answer surprisingly complex. There are two contributing factors which make a simple definition difficult: the variety of synonymous terminology for identical concepts; and at least two distinct mainstream definitions for the field.

This short paper will examine the following questions:

1. Why is the definitional issue important?
2. What are the other terms used for the field?
3. What are the two basic definitions of educational technology?
4. Is there a solution to the media terminology maze?

Definition Important?

It is almost paradoxical that a group of professionals in the broader field of communication have a basic problem in communicating what they are about. Yet such appears to be the case.

The following illustration should serve to put the problem in perspective. Consider three books, reasonably well known in the field, all with similar titles. They are *Instructional Technology: Its nature and use* (1979); *Proceedings of the Canadian symposium on instructional technology* (1980); and *Educational technology in curriculum development* (1974). The titles would suggest that the books are at least related in content. They're not. The first deals with the general field of educational media. Topics include the non-print media: film, television, photography, graphics, programmed instruction, and the like. The second title focuses upon one specific type of educational media, namely computer applications to education. Yet the broader "Instructional Technology" term was selected, but without the equivalently broad coverage. The third title does not deal with any kind of media hardware, whether electronic, or otherwise. Indeed the preface states:

Educational Technology is not to be confused with electronic gadgetry. . . Even if the sockets were to be filled in and the secret of electricity lost forever, we should still need

educational technology.

(Rowntree, 1974, p. 1)
The focus of this book, one quickly perceives, is the application to curriculum of a systems engineering philosophy . . . define, develop, evaluate, disseminate.

Yet another recent book has used the term educational technology to refer specifically to the high technology of satellites, dial access, videotext and the like. And, one last example: B.F. Skinner's *The technology of teaching* (1968) deals with none of these, but rather presents an expansion of Skinner's behavioristic philosophy.

Does it really matter? Obviously it does. It matters when authors and professionals take identical terms to have disparate meanings. It matters when such usage is regular. And it matters when those authors and writers assume that the readers' definition of the concept is identical to their own.

In short, the current literature is perpetrating confusion.

Terminology

If on the one hand educational technology seems to have many implicit meanings, too, unfortunately are there many terms representing the field. Here are a handful:

audiovisual education
audiovisual communication
audiovisual technology
educational media
educational technology
instructional technology
educational communications and technology
instructional development and technology
instructional development
instructional design
instructional media
and, (my favourite!)
educational media communications and technology.

But surely, you say, these terms have clearly different meanings. Unfortunately the best one can say is that for some individuals, these terms are indeed conceptually different. But for other individuals, many

of the terms are conceptually synonymous.

The simplest distinction is a historical one. The term audiovisual was predominantly used in the 1930's and 40's. But educational media gradually became the preferred term in the 50's as it became obvious that the audiovisual designation narrowed "media" to only audio and visual varieties. As more systematic bases for media were explored, the term educational technology became the preferred designation.

Thus the Department of Audiovisual Instruction (DAVI) became the Association of Educational Communication and Technology (AECT); the Educational Media Association of Canada (EMAC) became the Association for Media and Technology in Education in Canada (AMTEC); and texts which went through more than one edition were characterized by significant title changes. Illustrative of these is the Haney & Ulmer text *Educational media and the teacher* (1970) which in the second 1975 edition became *Educational communications and technology: An introduction for teachers*. Or, from Wittich and Schuller, the 1962 *Audiovisual materials: Their nature and use*, became *Instructional technology: Its nature and use* in 1973.

Basic meaning

The problem becomes simpler when one realizes that two distinct views of educational technology have developed. Saettler (1968) has suggested that these views can be more carefully distinguished as the physical science view and the behavioral science view.

The physical science view is a hardware approach. This view sees educational technology as primarily concerned with media, with audiovisual aids, with machines. The aim of the physical science view is to increase the impact of teaching . . . to improve instructional efficiency.

The behavioral science view takes a different starting point, reaches a different conclusion. In this view, technology is defined as the practical application of science. Thus educational technology is the practical appli-

cation to education of the laws, rules, and heuristics of educational psychology and educational communications, and general systems theory to education. In this view, media are not a necessary component. Yet to the extent that media play an integral role in the teaching/learning process, the role of media is more central and often more justifiable than in the physical science view. The aim of the behavioral science view is to increase the impact on learning — to improve instructional effectiveness.

Salomon (1974) summarizes the dichotomy succinctly:

Since the AV movement has yielded little in terms of consistent findings or conceptual guidelines, more attention has been given recently to instructional technology in either one of two senses. It has become either the application of tools, or, the application of learning theory. . . the alleged underlying basic science of education. . . to the problems of media. (p. 383)

The recent literature of the field is characterized by a general acceptance of these two views of educational technology, with some attempt by theorists to explore alternatives. Davies (1971) uses the dichotomy as the basis of his now classic text *The management of learning*, then expands into a trichotomy with educational technology-3 grounded in systems and management theory. Other classification attempts, for example David Mitchell (1979), have suggested a five-fold division of educational technology. These he labels as:

- ET-1 Educational psycho-technology
- ET-2 Educational information and communications technology
- ET-3 Educational management technology
- ET-4 Educational systems technology
- ET-5 Educational planning technology.

While useful, the classification does become somewhat unwieldy.

Finally, the work of the definitional committee of the Association for Educational Communications and Technology (AECT),

the major professional organization in North America which focuses exclusively on educational technology, is essential reading. The AECT definition however, is a difficult one, which cannot easily be stated in a few words. Rather, an entire book was deemed necessary to examine, explore and probe the concept as a field, a theoretic construct, and as a profession.

Nevertheless, the key to the AECT definition appears to be the relationship among:

1. the learner
2. the learning resources
3. the educational development functions
4. the educational management functions

The "complete" and "official" AECT definition reads as follows:

Educational technology is a complex, integrated process involving people, procedures, ideas, devices and organization, for analyzing problems, and devising, implementing, evaluating and managing solutions to those problems, involved in all aspects of human learning. In educational technology, the solutions to problems take the form of all the Learning Resources that are designed and/or selected and/or utilized to bring about learning; they are identified as Messages, People, Materials, Devices, Techniques, and Settings. The processes for analyzing problems, and devising, implementing and evaluating these solutions are identified by the Educational Development Functions of Research-Theory, Design, Production, Evaluation-Selection, Logistics, and Utilization. The processes of directing or coordinating one or more of these functions are identified by the Educational Management Functions of Organization Management and Personnel Management. The relationships among these elements are shown by the Domain of Educational Technology Model. Educational technology is often confused with "technology in education" and "instructional technology." (p. 153)

The definition thus presented has without doubt been carefully and logically considered. Unfortunately, it has one major

problem in that it does not communicate to the layman. It does not adequately tell others what we are all about.

Solution?

There is indeed a solution to the problem. That solution, however, lies NOT in arbitrarily selecting one of the definitions and stipulating that this shall henceforth be THE definition. Nor is attempting a composite definition which covers every possible contingency especially helpful.

Rather the solution must be centered in an honest attempt by all of us to communicate our own definitional foci and constraints at all times to all our audiences. It is our responsibility to stipulate clearly the definition under which we are currently operating.

Further, and simultaneous to the above, we must continually monitor the field outside of our own personal domain to keep abreast of current directions and trends.

For a final word we turn to J. Gass, the director of the Center for Educational Research and Innovation, from a report published in 1971 by the OECD under the title *Educational technology: The design and implementation of learning systems*. His comment at once shows the complimentary and integrative possibility between the physical science and behavioral science views, and at the same time, projects the possibilities for the future:

The simple lesson . . . is that there is no technological miracle in education. Neither the television camera, nor the computer, nor programmed learning can provide "instant" education. . . Educational technology is not a bag of mechanical tricks, but the organized design and implementation of learning systems taking advantage of, but not expecting miracles from modern communications methods, visual aids, classroom organization and teaching methods.

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Memorial University's ETV Centre Goes Public

Duane B. Starcher

Welcome to PLAYBACK. From now until 10:30 this evening we will show the television programs that you request. Phone 737-7999 and ask to see any of the 1,000 titles now in our library. Your selection will be shown when you want to see it. If you don't yet have your copy of our PLAYBACK catalogue, give your name and address to be included on our mailing list. It will be sent to you without charge.

Our telephone number again — 737-7999. This is your opportunity to program our channel.

The PLAYBACK service began in November, 1978 with a collection of about 100 titles and perhaps 15 per cent of the cable-franchised area actually connected.

On March 27, 1979, we gave a small prize for the first 1,000 PLAYBACKS shown.

On March 31, 1980, we passed the 5,000 mark. (By the way, these figures are for actual PLAYBACKS and don't include the many requests turned away for being fully booked.)

On April 2, 1981 a young boy home sick from school called us and became the receiver of our 10,000th PLAYBACK, only two years and four months from the beginning of the service.

Service Ends

On May 7, 1981, because Memorial University received a budget allotment from the Newfoundland Provincial Government between \$8-9 million less than it requested, PLAYBACK was suspended. The service had been a huge success, fully booked every day. It had grown from an initial collection of 100 titles into a resource of 1,000 titles and was the mainstay of Memorial University Television, ETV's public channel. It gave the public a reactive form of television, and the university a screen presence of over fifty hours a week, plus prime-time scheduled programming each evening. PLAYBACK was our trademark. Unfortunately, it was also the only portion of the budget, short of releasing staff members, where any real savings could be made.

An exciting experiment in resource-model television, reactive to public demand and a successful application of cable television to education has been abandoned for want of

funds to run it. This paper will examine the operating model plus describe a plan to extend Memorial University Television island-wide by microwave. Lastly it will speculate on the future in serving the province by satellite distribution, two directions we were working on and had indeed prototyped before the financial ax fell.

" . . . we had no illusions that we could recapitulate the history of public television as it had developed out of the universities in the United States."

ETV, the Centre and Newfoundland

When we began to encourage the University to activate a public channel via cable, the ETV Centre already had a successful decade behind it, producing credit courses for videotape distribution throughout the province and providing many media services in television, engineering and photography to the entire university. Suffice it to say that we have been extremely busy in distance education, on-campus production, experimentation in telemedicine, teleconferencing, satellites and other hardware projects. We have solid technical and human core in place on which to build.

As has come even clearer lately, Newfoundland is not a wealthy society and while it has adequately supported its growing university for most of the last fifteen years, Memorial has always operated most of its programs at the borderline of standards accepted as minimal by institutions of similar size in the rest of North America. So, we had no illusions that we could recapitulate the history of public television as it had developed out of the universities in the United States. The American educational broadcasting was built in the mid-1950's upon the television production centres of the wealthier universities, centres that sprang from departments of speech, drama, journalism and the fine arts. By contrast, Memorial, even today, has no departments of speech, drama, journalism or fine arts. Unlike the post-war boom years of the 1950's, our own

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The students captured in the opening frames of CLOSE HARMONY sing a song of life, and their refrain rings out clearly, "God would like us to be joyful!" These fourth and fifth graders 1979-1980 class of Friends School in Brooklyn, New York, have ample reason to be happy. They are members of an "intergenerational" chorus comprised of "youngsters" from nine to ninety, and their story is truly an inspiring one. Arlene Symons, originator and director of the group, first conceived the idea for such a chorus from her separate experiences as a teacher and as a group worker in senior citizens' centers. She brought the two disparate groups together in concert and parent Nigel Noble recorded the entire process on film.

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Duane B. Starcher is Director of Educational Television at Memorial University at St. John's, Newfoundland.

enrollment peaks passed through the university about five years ago, so such an undertaking as MUN-TV has to be justified on cultural grounds rather than in response to clear-cut, concrete instructional problems apparent to the general public, as were the educational pressures in the 1960's.

Specific Restrictions

What did we know before we started? We realized that we could never afford even to consider an open broadcast mode of signal delivery. And, we also knew that we could never provide a television signal to a signal home in the city if the university had to bear the capital costs of the delivery system. We would have been forever restricted to distributing credit courses via videotape to borrowed rooms in schools and community centres; we would thus be bound to produce programs primarily in aid of the prescribed, formal purposes of institutions. They would be teacher-loaded, not student-centered or "in the public interest," let alone a cultural force in our province.

"We realized that we could never afford even to consider an open broadcast mode of signal delivery."

A Cable Channel

Even in our most optimistic deliberations, we realized the obstinacy of the obvious obstacles in our path. So, we considered the problem and re-defined those limitations as virtues. Our vehicle into the home was through Avalon Cablevision Limited, the first cable enterprise in St. John's, selling two United States signals imported by microwave from Maine via Nova Scotia. We requested a channel for the university, independent of the company's legal obligation to provide a government educational channel; our channel was cheerfully granted as a condition of their license.

Cable and Telephone Playback

We felt it highly unlikely that anyone able to pay \$25.00 for a cable hook-up and \$9.51 per month would not have at least one telephone in the house. With these two elements, cable from the university reaching into the homes and viewers' telephones reaching out, we introduced PLAYBACK, a service through which anyone could call us and ask for the replay of any program in our collection. We began with less than a hundred titles from which to choose, but have built that now to over 1,000. Between November, 1978 and April, 1981, we responded to 10,000 individual requests from viewers and turned away uncounted thousands more. PLAYBACK was fully booked nearly every working day, every evening and all day Saturday.

Building the Collection

So, instead of taking the traditional approach to public broadcasting, we concentrated on building a collection from many resources of free films, low-cost film and television programs, spiced with a few "biggies," expensive leaders to attract notice among the "competition," the commercial channels. No matter what titles eventually ended up in our collection, we committed ourselves to a reactive service and retained only 12 hours in prime time out of each 60-hour week which we programmed, in the traditional mold of the broadcaster, to keep our own interest and professionalism high. And, we concentrated our own production effort to create local programming intended to supply a basic core of intelligent productions both about the university and about topics on which expertise at Memorial could shed some light.

Looking Back

In retrospect, these strategies were not merely successful, they proved to be our salvation. We had assessed our weaknesses and transformed them into virtues. We became useful to our viewers in that we were seen to be providing a service; we were responsible in that we could react to viewers' needs; we were creating a resource, a collection more permanent and accessible than any other form of television in our viewers' experience. And, we were avoiding near certain failure

by not attempting to mimic traditional operations for which we were not equipped, staffed or experienced. While we were not always undertaking production tasks that we individually might have liked, still we maintained an operation of which we could be proud and which was seen to be of professional standard, tailored to the realities of our environment.

"...we introduced PLAYBACK, a service through which anyone could call us and ask for the replay of any program in our collection."

Reaching Out

Only new money could take us beyond St. John's out where our presence was even more important than in the city. Obviously, we were always concentrating on the "television" prefix in television; we wanted to extend our service province-wide. We had spent the last two years trying to find the physical and financial means to deliver our signal upstream, that is, from east to west. This was done on a demonstration basis, delivering a week's programming and live coverage of a major oil conference province-wide, but the money to support a fulltime network has obviously not yet come through. Our intention was someday to serve, by microwave, the towns of Gander, Grand Fall, Deer Lake, Stephenville, Corner Brook and Port Aux Basques, all of which have commercial cable systems in place. These particular towns are served by cable companies and all are on the Terra Nova Tel microwave route, but the tariff charges inhibit our establishment on the network. The distribution technology is available, waiting for us to activate it. Some other towns on the island also have cable services, but are off the main microwave spine. These, and all sites in Labrador would have to be served later, probably by satellite.

Problems and Solutions

As I began by reporting the demise of the PLAYBACK service for want of funds, I'd like now to talk about some of the problems of operating such a service and discuss some of the solutions we were coming to terms with before PLAYBACK had to be suspended.

PLAYBACK Met Needs

PLAYBACK had the tremendous advantage of allowing MUN-TV to display many hours of programs from a rather small collection of titles. To have scheduled 10,000 programs in two and a half years in the traditional manner would have bankrupted us even sooner. Through PLAYBACK, we were seen to be in operation by those who flipped channels in search of programs; we were offering a service to individuals; and we were becoming known to viewers who would also consider watching our scheduled, prime-time programs at night.

"We faced exactly the opposite problem of a commercial entrepreneur — we didn't dare be too popular..."

Popular Titles

What was beginning to distress us was the very popularity of some of our titles. There are only so many times that one wants to telecast programs such as "Cars that Crash and Burn," (108 times) "Small Cars and Crashes" (83 times) and "Crashes that Need Not Kill" (56 times). They were well-done programs, but the kids requested them mostly for the slow-motion sequences of death and destruction. Even some of our own productions became a bit embarrassing, some that I produced myself. They were done with our Folklore Department and were about "Newfoundland Country Music Pioneers." The program on Jimmy Linegar was played 173

times and the one on Wilf Doyle 94 times — and this was before Conception Harbour, Wilf Doyle's home town, was connected to cable! It began to seem as if everytime we looked at our channel it either had a car crash or a hillbilly on it — not really your standard image of a university television service.

Limiting Programs

We early took the steps of limiting any program to two plays a week. This helped for a while. Then we bought "All You Need is Love" from TVOntario, thirteen hours of pop music, so theoretically we could have had 26 hours of such music each week. We limited these titles to once each week. And, some other titles caused a bit of trouble. Several programs from Wayne State discussed the evolution of the horror film. This was not particularly disturbing until a parent pointed out that one scene from an old film showed children killing their parents — and then eating them. This, and a few other titles of a sensitive nature were restricted to playing after 9:00 p.m., that is, well after supper.

"...we concentrated our own production effort to create local programming..."

Free Films

As we had collected many titles from sources of free films, we also on occasion had to ignore the imbedded commercial messages about the companies that sponsored the films. On the other hand, most free programs did contain much good information and excellent visual material. Beggars could not always be choosers, nor did we want to become censoring gatekeepers any more than was inevitable by the nature of the task.

Changes

So, what changes would we have made if PLAYBACK had not been suspended? I can't say for sure, but a number of ideas were being considered. First, we considered opening a second channel in the mid-band

(soon to be activated by Avalon Cablevision) and relegating the most popular shows to the new channel. This would have cleared MUN-TV itself for a better controlled, better balanced form of access television. We also considered cutting the catalogue of some of the titles that had been played to death, but as new subscribers were constantly being added, we hated to remove the most popular titles only for the reason that they were popular. We faced exactly the opposite problem of a commercial entrepreneur — we didn't dare be too popular, especially when displaying material that was not representative of the image the university wished to portray before the public.

Another option, and one with much merit, as it would have also saved us a great deal of money in catalogues and postage, was changing the requestable titles each week — restricting PLAYBACK to fifteen or twenty titles, but not limiting the number of plays of any of those titles. Notices could have been run on our information display system, as well as printed in the newspapers and TV guides sold in the city. In other words, we could have incorporated the information about PLAYBACK into normal procedures for listing scheduled programs.

As we have no idea when or if PLAYBACK can be restored, we don't have to face these decisions yet. Perhaps you will have other ideas to suggest that will be of use when the time comes to reintroduce the service.

Summary

This, then, is what we have been doing before our public for the last two and a half years. The public channel has been a spur to us all in the range and quality of our productions and has helped us bring into Newfoundland some of your own best productions. We combined scheduled and access modes and laid the groundwork for our inevitable extension to the other cities with cable services. We were well on our way.

We are still on our way, but the destination is now less clear. Our 1981-82 season will be exciting, but not reactive. We will schedule our own programs and promote them in the traditional manner and hope for better times next year.

Integration and Inference: Two Visual Literary Skills

Bill Winn

It is reassuring when what is predicted from psychological theory is actually seen to occur in the classroom. In recent years, I have been involved in research into visual learning and thinking which has allowed me to draw some conclusions about the kinds of processing skills a person must master in order to be visually literate. At the same time, I have had the opportunity to work with teachers and their students in the areas of viewing, visual literacy, and television. This article discusses two cognitive processes that appear to be fundamental to visual literacy in general and to television viewing, and which are also interesting because they do not function consistently in children of different ages. In other words, these processes illustrate ways in which visual skills are linked to children's general cognitive development. I call these skills "Integration" and "Inference".

Integration is a mental process by means of which the viewer interprets the elements within a picture as belonging together. In a picture of a house, for example, the doors, windows, chimney and roof are perceived as all belonging to one object. They are integrated by the viewer to form a single concept "house" rather than being seen as a collection of single isolated concepts. Inference is a process that leads the viewer to a meaning of the picture beyond the obvious concept it represents. For example, if the house is a large one, surrounded by trees, with a Rolls in the driveway, the viewer might well infer that the owner is wealthy. Or if the picture includes a barn and a tractor, the viewer would infer that the owner is a farmer. Often, of course, inference and integration are not easily separable. When we look at a snapshot of people all posing for the camera, we tend to integrate them into a single group, whom we then infer know each other, possibly being members of the same family. Here it is difficult to tell what is integration and what is inference. Nor is making the distinction particularly productive. However, psychological research suggests that they are separate processes, and observing children suggests that they do develop to some degree independent of each other.

The implication of this for visual literacy is that younger children do not possess fully developed skills for integrating information in pictures, and for drawing inferences from them. They develop these skills as they grow older, and should be given opportunities in visual literacy programs for learning and applying them. Although a child's cognitive

development cannot be significantly accelerated, these skills do not necessarily develop as fully as they might on their own, meaning that instruction in their use is important.

While not formally documented in any way, I have collected numerous examples of the development of integration and inference skills from observing children directly or on videotape. The following "scenarios" are taken from these observations.

Groups of grade three children are doing a picture interpretation exercise using pictures from magazines. One group, working with the teacher, is studying a photograph in National Geographic showing a man in a smock and turban ferrying three cows across a lake on a raft. There are snow-capped mountains in the background. The teacher is attempting to have the children make inferences about the picture, and asks: "Could this picture

...these processes illustrate ways in which visual skills are linked to children's general cognitive development."

have been taken in Alberta?" "Yes," comes the reply. "Why?" "Because in Alberta there are lakes, boats, cows, men and mountains." The instructor then asks the children to look more carefully at the man in the boat. After some discussion, the group agrees that he is not from Alberta, and certainly not wearing the clothes that Alberta cowboys wear. "So," asks the instructor, "could the picture have been taken in Alberta?" "Yes," the children persist, "because in Alberta there are lakes, boats, mountains, cows and people."

By adult standards, these children have misinterpreted the picture. You can detect some obvious adult logic in the thread of the teacher's probing and questioning. "Is the man from Alberta? If not, then the picture was probably not taken in Alberta." That, however, is adult logic. The children's reasoning is influenced by their lack of integration of the elements in the picture. They do not see that the context is very likely related to the man in the picture. Though in this sense incomplete, the reasoning system that leads them to conclude that the

picture could have been taken in Alberta is just as logical and sound as an adult's reasoning system. It is different, relying on associative processes involving familiar experiences. But it is just as good a system as that of the instructor. To think of it as inferior is unjustified and, on the face of it, terribly patronizing.

"The children's reasoning is influenced by their lack of integration of the elements in the picture."

A seven-year-old girl is looking at a study print depicting a little boy sitting in a dentist's chair. The dentist is showing him some x-rays. "What are these?" asks her mother, pointing to the x-rays. The girl hesitates. "X-rays of other people's teeth or of his teeth?" she asks.

This child is clearly in a transitional stage, and is hesitant and unsure in integrating the elements in the picture. An eleven-year-old, as an adult would, looked at the same picture and stated right off that the dentist was showing the boy x-rays of his teeth. However, the girl does not make this association, and fails to integrate the two elements. Again, though, she is not "wrong". They could be x-rays of someone else's teeth. But as a result of experience with dentists, adults make the integration, while she does not.

Similar developmental trends and differences from adult logic are evident when children are asked to draw inferences from pictures. It has generally been observed that children tend to pay attention to the literal content of the picture, and often have difficulty drawing inferences that require more abstract and (again) adult reasoning.

A group of grade six students is studying advertisements in a magazine. The page is open at an advertisement for Buick cars. A Buick is parked on a deserted beach. The sun is setting. A man and a woman, in the middle distance, are walking hand-in-hand away from us. To the left is a cottage among some trees, with a light burning on the porch. The children have figured out that the car and the cottage belong to the couple, who are obviously boyfriend and girlfriend, and probably married. They also know, from earlier discussion about commercials, that the purpose of the picture is to sell Buicks. The teacher asks, "Why did the person who made this advertisement take a picture of the car on the beach by the cottage?" The children have difficulty answering this. After a while, one of them suggests, "The people must have got

to the beach somehow. They probably drove there in the car."

Here, the child is making an inference. However, the teacher was clearly probing for something more subtle (and adult). Again, the child was not wrong. But since the object of the exercise was to sensitise the children to certain of the techniques of advertising, the teacher was hoping for inferences to do with the status of the people on the beach, their romantic attachment to each other, and so on. "The kind of people who own Buicks own cottages by the sea, are young, romantic, successful and attractive." This is something an adult tends to infer, but a child does not.

"... visual skills do not necessarily develop naturally to their fullest potential."

These examples illustrate the point that both for integration and inference-drawing, younger children think differently from adults. But since television programs and commercials, even those aimed at children, are made by adults, thinking like adults, portions of the intended message are likely to be overlooked or interpreted differently than the way they were intended to be. Some might argue that this is a good thing, providing children with a natural defense mechanism against the more subtle and insidious techniques of television advertising. But to leave it at that defeats the whole purpose of education in visual literacy. Children are best served if they are given the opportunity to develop and apply cognitive skills that will lead them to interpret visual messages as they were intended to be interpreted, so that they can also develop judgmental skills that will lead to an accurate and valid appraisal of the messages that they have interpreted. A large portion of the effort in educating children to be visually literate must therefore go to training in integration and inferencing.

It was stated earlier that cognitive development cannot be greatly accelerated. It should therefore not be the aim of visual literacy programs to speed up development. However, visual skills do not necessarily develop naturally to their fullest potential. They need to be taught, just as reading skills do. So when children have reached the appropriate level of cognitive "readiness", they can begin to learn the syntax of visual messages that require developed integration and inferencing skills to be understood. The

best way I have found to help children develop these skills is by no means original, so I will just mention, and not analyze the method in any depth.

To begin with, the method is inductive. From their examination of pictures, whether still or moving, children are encouraged to derive general principles of visual design by means of which visual communicators get people to integrate elements in pictures in particular ways, and to draw particular inferences. These are gathered from the children, and tabulated on the blackboard (or elsewhere) for the children to refer to as they study more pictures. In this way, most design principles are identified as a result of a group effort. We start looking at slides as a whole class. Then we break up into small groups for the study of magazine pictures (frequently advertisements). We then move on to looking at television commercials as a whole class.

When doing these activities, care is taken to make sure that all the important aspects of visual design are illustrated. Pictures have to be selected to include some that use grouping and layout to get the message across (to develop integration skills). Others should illustrate how inferences are drawn from such things as camera angle (psychological dominance), color (warm or cold feelings), facial expressions (mood), cultural symbols (wedding rings, styles of dress), stereotypes (the "ideal" family with two children, one of each sex), youth, beauty, and material things (society's ideals), and so on. You will be amazed at how readily children catch on to many of these, and how quickly they begin to make quite subtle interpretations.

The foregoing has not dealt specifically with television. This is because the development of integration and inferencing skills are in large part precursors to critical television viewing. I have found it easier to work with children using still pictures than with television, because often the discussions I have with them and their teachers require constant reference to a single picture. However, once the children are capable of integrating the elements of pictures and of drawing inferences from them, they will be well equipped to do the same with television. On the other hand, without ability in these two skills, they risk misinterpreting the intentions of the adults who have produced what they are viewing. This can only be to their detriment, preventing them from developing the ability to critique what they see in terms of their own needs and values.

Educational Cable TV in Alberta

Catherine E. Gordey

In Alberta, over 150 hours of educational programming are broadcast over educational cable channels each week. However, each educational cable system is not on the same programming schedule. Each system is an independent organization, a consortium, playing programs of direct interest to its local public.

Programs can range from "People in Power" produced by Canadian Cable Systems, to the Esso Resources series, "The Newcomers," in both English and French; or from a college's photography series to "Car Owners' Maintenance Guide" produced by ACCESS, Alberta's provincial agency producing educational programs. Programs are chosen or produced by an educational cable consortium to answer the needs of the local community. The background of educational cable consortia began with the formation of the Canadian Radio and Television Commission (CRTC) fourteen years ago.

Nationally

In 1967, the Broadcasting Act established the CRTC and recommended that "facilities should be provided within the Canadian broadcasting system for educational broadcasting." In 1970, this recommendation was strengthened to state that every cable company would designate one channel for educational broadcasting to be under the jurisdiction of a provincial government authority. At this time, the definition of "educational programming" was established.

Educational programming is programming designed

to provide learning opportunities for the acquisition or improvement of knowledge, or for enrichment, and subject to supervision by the provincial authority;

and programming providing information on courses of instruction

or broadcasting of special events.

Two years later, another federal direction, P.C.1972-15 clarified that this one education channel should be licensed through a provincial authority or licensed to an independent corporation. This allowance for an independent corporation was for the benefit of Ontario Education Communication Authority (OECA) which already had established an independent corporation producing and broadcasting educational programming.

Provincially

In Alberta on August 1, 1970, in response

to the CRTC ruling for an educational channel in each cable company, a ministerial order established the Alberta Educational Communications Authority (AECA) to be responsible for overseeing transmission, production and policies in regards to educational communications. The authority consists of the minister of education, the minister of advanced education and manpower, and the associate minister of telephones, with an executive committee made up of the deputy ministers of these three departments and an executive director. The role of the authority is to administer the Alberta Educational Communications Corporation Act; identify educational needs; establish priorities to be met by ACCESS through the acquisitions and production of both educational programs and other materials; designate all educational television channels in the province; and offer consultative service on technical and other problems related to the use of communications technology.

It is the belief of the AECA that "decisions with respect to the use of cable for educational purposes should be made by such local authorities within the geographical area covered by the cable system or systems licensed to serve that area". (Morton, 1977) Therefore, the authority designates all educational channels in the province and expects that each consortium will establish the organizational and administrative framework which best suits its own need. Besides designating cable consortia as the education programmers to use the channel, the AECA role in regard to cable programming is to:

1. supervise and assess by any appropriate means the programs and materials transmitted by the consortia;
2. monitor and set guidelines for ACCESS, the major distributor of educational programming in the province.

"... a ministerial order established the Alberta Educational Communications Authority (AERA) to be responsible for overseeing transmission, production, and policies in regards to educational communications."

What is a Consortium?

The authority may recognize in each cable

geographic area a consortium of educational institutions and agencies organized for the purpose of using cable for educational purposes with the cooperation of the cable system owner or operator. All educational institution within a cable licenced area governed under the jurisdiction of the minister of education or the minister of advanced education and manpower are entitled to become participants (i.e., full members) in a consortium. Agencies such as Alberta Alcoholism and Drug Abuse Commission (AADAC) or community associations interested in furthering their educational programs may become non-voting members.

Educational Institution Initiates

Interest to form an educational cable consortium usually originates in a local educational institution which then contacts all other educational institutions operating in the area to solicit membership. The membership would prepare a memorandum of agreement outlining membership, governance, revenues, programming, operation and the term of the agreement. Once prepared, this memorandum is submitted to the AECA for its information.

Membership structures and fees are unique to each consortium. In general, only those institutions governed under the ministers of education can be voting, or full members of the cable consortium, so that control is always within the hands of the education institutions. School districts, community and regional colleges, institutes of technology, and universities usually form the base of the

"... the authority designates all educational channels in the province and expects that each consortium will establish the organizational and administrative framework which best suits its own need."

consortium. Areas not served by a local university are still within the jurisdiction of Athabasca University and may also be served by Educational Consortia whose aim it is to deliver higher education opportunities to these areas. Further education councils are also likely members for the cable consortia.

Other institutions, organizations and groups may be granted associate memberships by the board. Within the current operating consortia, associate memberships are held by such agencies as the Red Cross, teachers', and trustees' associations, and government agencies like Alberta Alcoholism and Drug Abuse Commission (AADAC).

Fees are determined by revenues required by the channel and on the amount of use made by each member as well as its ability to contribute.

Donations are welcome from any source, and several consortia have become or are in the process of becoming incorporated as a society under the Societies Act so that donations can be tax deductible. No funding to date has been given to the consortia by the provincial government, although a request has been made and is being considered.

Board of Directors

Representatives from each educational institution committed financially to educational cablecasting form a board of directors for the consortium. The board has the authority to appoint an agent board to manage the logistics of the cable operation.

Table 1
Alberta Consortia

	MEMBERSHIP	STAFF	HEAD END/STUDIO	PROGRAMMING (March 1981)
cetc Calgary	1 School Board 1 College 1 Institute 2 Universities	1 Co-ordinator 2 Part-time Operators	SAIT/access to SAIT studio	57 hr/wk
eecc Edmonton	2 School Boards 1 College 2 Universities 4 Others	1/4 Manager 2 Operators	Warehouse/access to School Board studio in the same building	72 hr/wk
fmcec Fort McMurray	3 School Boards 1 College 1 University 1 Other	IN TRANSITION STAGE		
gpcec Grande Prairie	1 School Board 1 College 1 University	1 Co-ordinator/Operator 1 Part-time Operator	Junior High School/ new studio in school	24 hr/wk
spec St. Paul	4 School Boards	1 Co-ordinator 2 Programmers 1 Student Operator 1 Part-time Secretary	Regional High School/ own studio in school	6 hr/wk
ycet Edson	1 School Board	1 Part-time School Technician	High School/new studio in school	occasional

Catherine E. Gordey is an Associate Director of the Alberta Educational Communications Authority in Edmonton.

Agent Board

The agent board is accountable for any operations of the consortium that the board of directors deems necessary, for example:

1. installing and maintaining head end equipment,
2. providing the necessary physical facilities,
3. looking after finances,
4. providing and supervising the necessary staff.

Program Coordinator

The board of the consortium usually designates an educator to act as program coordinator. This person may work alone or, as some consortia have done, may organize program committees to be responsible for evaluating and answering program needs.

Animateur

Another possible employee of a cable consortium is an animateur, operator, or liaison officer to organize, supervise and coordinate the activities of the consortium. This person is able to have a broad perspective over the whole operation and be the contact person with outside agencies and the public.

Programming

Once the AECA grants the educational cable channel to a cable consortium, the consortium sends program logs each month to the AECA as a way of informing the AECA of program content and general operation of the channel. Following guidelines developed by the CRTC, AECA recommends procedures for completing the logs.

Each year using these program logs, the AECA prepares a study which includes a description of each operating consortium in terms of membership, staff, intended audience, and details of programming describing

"This individualization of consortia and the emphasis on local needs guarantees that educational television is specifically designed to fulfill unique educational needs within a given geographic area."

daily broadcast times, average weekly broadcasting hours, the number of programs broadcast and the percentages of local, ACCESS and other programming and of Canadian content.

Alberta Consortia

At present, cable coverage in Alberta is approximately 70 percent with a prediction for 1985 that cable will be available in 85 percent of the province. Currently within the province, there are six operating educational cable consortia: Calgary, Edmonton, Edson, Fort McMurray, Grande Prairie and St. Paul; and at least three more in the formative stages in Drumheller, Lacombe, and Vegreville. See Table 1 for a synopsis of membership, staff, head end and studio facilities, and average programming hours per week during March, 1981.

Programming

Aside from being an alternative to commercial television, each consortium tries to:

1. distribute educational and instructional programs to a large number of people within the community that is linked by cable;
2. relate all programming to local needs and interest;
3. provide educational institutions and organizations with a means of communicating with the general public (for example, board meetings, an address by the superintendent, information about courses offered by institutions);
4. provide direct and convenient access to instructional and informational program material; and
5. provide assistance for efficient and effective learning through the visual medium of television.

This individualization of consortia and the emphasis on local needs guarantees that educational television is specifically designed to fulfill unique educational needs within a given geographic area. While having the capability of reaching a wide audience, educational cable consortia can and should

"At present, cable coverage in Alberta is approximately 70 percent with a prediction for 1985 that cable will be available in 85 percent of the province."

afford the luxury of appealing to a narrow audience for a variety of programs. Programs assigned to meet specific and unique local needs are insurance towards interesting, satisfying and maintaining a local audience.

Programs range from politics to car maintenance, and sources vary from commercial enterprises like Esso Resources to local school boards. Local productions are encouraged because of their ability to react immediately to local and regional interests and needs. Programming from ACCESS (the provincial production agency) varies from worldwide appeal like "Science International" to more Canadian-specific materials which relate directly to curricula. Community colleges and institutes of technology offer several popular programs. The Southern Alberta Institute of Technology (SAIT) has a basic photography course that has been shared with other consortia. Grant MacEwan Community College offers a course for library technicians which has been broadcast by northern consortia, where this type of course is not available through the regional colleges. Athabasca University, which is the only university with a provincial mandate and thus is a member of each of the consortia, offers the video part of some of its courses over cable. If cable is not received in the home, students can go to a local college or school to view the programs.

With the participation and resources of local educational institutions, including community schools, educational consortia, and Further Education Councils, it is possible to program a new channel at least 10 hours per week and develop it over a few years into a 30 to 40 hours week. This year's study of the educational cable consortia, based on the four consortia operating in March, 1981, indicates worthwhile efforts in local programming. The cable consortium in Grande Prairie has achieved great success in the form of three busy phone lines during the daily hour-long production, "Our Place After School". A fourth telephone line was added near the end of the 1980-1981 programming year in an attempt to keep up with the demand. The study reports that Edmonton's educational cable consortium continues to increase its local programming, and its school board members take advantage of the communications opportunity to inform their rate payers of school board activities. The report recommends that more opportunities be sought to exploit the potential to deal with "hot" issues of interest to education in the communities served by cable.

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Community Communication: Parent Education Radio Program

Wanda Young

Davis and Baran (1981) credited Lazarsfeld with the development of administrative research in communication, through the establishment of marketing research and audience analysis. In this study audience analysis was applied in a survey of Canadian radio stations to determine whether a particular need of audiences was being met by the stations.

The main topic of concern was parent education. Bronfenbrenner (1978) stated that the groups most in need of parent education were those who do not yet have children, those who no longer have children, and those who will never have children. In explaining his thesis, Bronfenbrenner indicated that North American civilization required a social policy and social practices that would give status and approval to parenthood. Bronfenbrenner recommended media programming about the family, showing where children are, what they are doing, and who cares for them. The conditions of the children and their caretakers should be exposed. Bronfenbrenner's recommendations were for television, but such programming could be applied to radio as well. Programs could be designed for adolescents, the elderly and single persons, the audiences that Bronfenbrenner recommended.

Teenage audiences represent a group who do not yet have children. Adolescents do have unwanted pregnancies (Alan Guttmacher Institute, 1976). Buck (1971) found that 98 percent of teenagers listen to radio, spending two hours per day (Dominick, 1974).

A group who no longer have children are the elderly. Foster (1970) and Robbins (1971) noted that the elderly used radio extensively and were loyal listeners.

The adult listening audience might assist in establishing status for parenthood. Mendelsohn (1971) observed that radio plays an important part in the everyday life of many persons. In Canada, 98.4 percent of all households have one or more radios (Segal, 1980).

The purpose of this study was to survey Canadian radio stations for programming about the family and parent education. The questions of interest were:

Which Canadian radio stations offered

programs in parent education?

Who prepared the programs?

What kinds of program were produced?

How were the programs evaluated?

Background of the Study

In a study of parenting education resources in the province of Saskatchewan (Health Promotion Directorate, 1979), it was recommended that radio programs dealing with parent education be scripted. The advisory board and station manager of CJUS, the University of Saskatchewan FM radio station, asked for suggestions for educational radio programs. A series on parent education was prepared and funding was obtained from the Health Promotion Directorate to start the project in 1980.

For this study, parent education was defined as the preparation of parents and prospective parents for child care and development, and the improvement of family living. Such areas as nutrition, management of resources, environment, and relationships were of particular concern.

The improvement of family living was an objective of many of the parent education programs reported by Crooke and Glover (1977) in a history of the subject. Breivagel and Parker (1980) pointed out that families have been neglected and need help. Developing countries may be more advanced in radio programming to help families (Clearinghouse on Development Communication, 1980). In North America, media programs often conflict with the parental values of no violence, sexual restraint, lifetime monogamy, and planning for the future (Le Masters, 1970). Schramm (1974) defined communication as an orientation to a set of informational signs about content that would reduce uncertainty. The Simon Fraser University Telecommunications Research Group (1978) observed that it was a purpose of programming to promote social change and development, catering to special interests such as those of parents. Whatever media or methods were used to communicate parent education concepts, evaluation was needed as to the effectiveness of the program in meeting the established objectives (Dubanoski and Tanabe, 1980; Crooke and Glover, 1977).

Procedures

The Questionnaire

A questionnaire was designed including questions about the content objectives of parent education programs, the kinds of parent education programs, and the form of evaluation used for the programs.

The questionnaire was tested in two ways. A group of students and faculty members were asked to comment on the clarity of the questions. Then, the questionnaire was tested during interviews with representatives of the five radio stations in Saskatoon.

The Sample

Listings of radio stations in the *Canadian Almanac*, names of community colleges and government departments who arranged for radio programs, constituted the sample. Questionnaires were mailed to 673 subjects.

Data Analysis

Because the questions were open ended and because some subjects included advertising brochures and program plans, content

analysis with notation of the frequency of concepts about parent education was used to analyze the data.

"A questionnaire was designed including questions about the content, objectives, producers of parent education programs, and evaluation used."

Findings

Questionnaires were returned by 190 (28.19 percent) of the sample. This number included 43 (6.38 percent) radio stations, community colleges, and government departments, offering some type of program about parent education. Of these 29 (4.31 percent) were broadcasts by radio stations.

The frequency of parent education offerings in the provinces of Canada is shown in Table 1. Ontario, with ten stations, and British Columbia with eight stations offered parent education most frequently. Alberta and Nova Scotia had three radio stations of-

fering programs. The Northwest Territories had two radio stations dealing with parenting. Quebec, Manitoba, and Saskatchewan had one station each. New Brunswick, Newfoundland, Prince Edward Island, and the Yukon station replying did not offer any parent education related services on radio. There were fourteen responses from government departments and community colleges.

Sixteen stations offering parent education programs reported more than 5,000 listeners each.

"Sixteen stations offering parent education programs reported more than 5,000 listeners."

Kinds of Programs

The greatest use made of radio was to advertise programs about parent education as shown in Table 2. Next in popularity were public affairs programs which included documentary information about families and parenting. Open-line shows and public service programs used parent education to the same extent. News stories about family con-

ditions were next in popularity. Interviews and guest experts were used by a few stations and an equal number had weekly counsellor services on family problems.

Other formats mentioned by individual respondents included: citizen access, conference tapes, editorial comments, Year of the Child Programs, answers to questions sent to a post box, family planning information provided by the health unit, religious broadcasts, food programs, information for parents about the work of the schools in the community, a series on society and the family, national programs carried on the local station, morning programs, home programs, community forum, and a rolling magazine format.

Objectives of the Programs

The objectives of the parent education programs offered were related to increasing information dissemination rather than education. Such statements as the following were typical:

To provide prenatal information for expectant parents.

To cover a wide range of topics aimed at persons in the child-bearing age.

To provide a series to examine early childhood and puberty problems and to discuss methods for handling such problems.

To speak about family related topics and various health issues.

To explain specific diets and food preparation.

To permit an exchange of views about the family in the world we live in.

To help parents gain confidence in determining priorities and making decisions about their families.

To reflect research about child care and the family.

To provide free time to publicize events such as parent education programs (public service announcements).

To reach a larger audience with information about the well being of children, parents and families.

To focus attention on the complexities of everyday interaction and communication.

These objectives related to the Canadian Radio and Television Corporation's (1975) desire that stations meet the needs of the community. Some objectives were addressed specifically to parents. Others were general and supported Bronfenbrenner's (1978) recommendation that programming be designed to improve policy about children and parenting.

Personnel Producing Programs

The persons producing the parent education programs were described as those with university training or job experience in parenting. Former educators were popular, as were family life counselors, public health nurses, and social workers. Some professionals were invited for specific programs. These included doctors, psychologists, clerics,

nutritionists, and home economists. Commitment to parent education and experience in group work were important characteristics for those chosen to broadcast about parent education.

"Commitment to parent education and experience in group work were important characteristics for those chosen to broadcast about parent education."

Evaluation

Twenty respondents indicated some kind of evaluation was used. Some invited feedback responses to each program. Others used an independent rating system. Surveys and assessments were made of listeners at yearly or bi-yearly intervals. Letters about programs were filed. If 25 to 30 were received the program was considered satisfactory. The number of calls on an open line show indicated the popularity of the topic.

Conclusions

There were limitations to this study. Random sampling was not used, but it would be suitable for a follow-up study in which stations that did not respond, those who did have programs, and those who replied but did not have programs are compared to determine any interest in the production of

Table I

Questionnaire: Frequency

Province	Distributed		Returned		Returned	
	n	%	n	%	n	%
Radio Stations						
Alberta	48	7.1	9	1.3	3	0.4
British Columbia	86	12.8	20	3.0	8	1.2
Manitoba	25	3.7	9	1.3	1	0.1
New Brunswick	17	2.5	12	1.8	0	0
Newfoundland	29	4.3	5	0.7	0	0
Northwest Territories	8	1.2	2	0.3	2	0.3
Nova Scotia	25	3.7	6	0.9	3	0.4
Ontario	132	19.6	40	5.9	10	1.5
Prince Edward Island	4	0.6	3	0.4	3	0.4
Quebec	101	15.0	32	4.8	1	0.1
Saskatchewan	23	3.4	21	3.1	1	0.1
Yukon	2	0.3	2	0.3	0	0
Community Colleges	121	17.9	-	-	7	1.0
Government Departments	52	7.7	-	-	7	1.0
Total	673	100.0	161	23.9	43	6.4

Table 1

Kinds of Programs

Format	Frequency	Percent	
		Yes	Respondents
		n	n
		43	190
Advertising	22	51.2	11.6
Public affairs	8	18.6	4.2
Openline	6	13.9	3.2
Public service	6	13.9	3.2
News stories	5	11.6	2.6
Interviews	4	9.3	2.1
Weekly counselor series	3	6.9	1.6
Guest experts	3	6.9	1.6

parent education programs created as a result of the 1980 survey.

The responses are sparse, indicating a paucity of parent education programs in Canada. A recommendation for increased programming in parent education could be made for all provinces.

Producers of parent education broadcast material are advised to utilize short "spot" programs. Open-line shows on controversial issues in family living and parent education is another recommended format. Long programs in a series format would be suitable for educational radio stations.

Professional training for parent educators should include training in writing radio scripts and presenting them. The opportunity to answer questions on open-line shows, and to present short, informative, and interesting talks should be provided in the course work of parent educators. If a campus radio station is not available, simulation exercises could be undertaken using tape recorders. Sponsors might be found for sessions on commercial radio stations.

In the future, electronic technology will make it possible to use the home as a learning center by providing contact with centers of education (Toffler, 1980; Williams, 1979). Family members will continue to interact within the family system and advanced radio technology will provide the opportunity to interact with community centers to obtain stimulation and education as well as relaxation. A suitable topic for education would be parent education concerned with values, the improvement of communication within the family unit and society, the health, nutrition and lifestyle of family members. Parent education is a topic that may require the privacy and bonds afforded by radio (McLuhan, 1971).

This study has shown that a few radio stations in Canada are meeting the vital needs for parent education. There is room for additional programming. Parent educators should be trained to work on radio, and to influence sound policies about families.

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In my Opinion

Illiteracy and the New Technology

Charles Ungerleider

If you are reading this article, you enjoy a right that is denied to approximately 800 million adults: literacy. Although the figure 800 million adult illiterates is staggering, the number is almost certain to increase in spite of the massive efforts nations are making to eradicate illiteracy.

"The people of the South who still suffer from the burden of the old illiteracy are under-represented among those with access to and understanding of the new communications technologies."

The combination of advanced telecommunications technologies and the advent of pay television has created the conditions for reversing the worldwide trend toward universal literacy which began with the invention of moveable type. Prior to the invention of movable type, people's lives were circumscribed by the boundaries of their local communities. Their patterns of interaction were confined to those with whom they could have face-to-face relations, eliminating contact with people removed by time and distance. Those who were literate could control the transmission of information in a way which enabled them to exercise power over those who were not literate.

The invention of movable type and the spread of literacy to large numbers of people diminished the power of the few literate people who previously held a monopoly on reading and writing. Those who learned to read were able to examine the ideas of the church

and government. In reaction, church and government made censorship laws in an attempt to maintain control over what people thought and what they believed. These attempts to control information and ideas only slowed the changes which literacy had brought.

The invention of moveable type in 1454 eventually led to a more equitable distribution of knowledge than had prevailed until that time. Nevertheless, after more than five centuries, there are still 800 million people who are considered illiterate.

The combination of satellite, computer and television technologies has laid the basis for a new form of illiteracy even before the old form has been eradicated. Once confined to the ability to read and write, the definition of literacy has been expanded to include the possession of skills which enable people to take a full and active part in the affairs of their community. As fee-for-service information systems become more widely established, they will enlarge the knowledge gap between those who can afford access to information and those who cannot.

Information transmission, storage and analysis systems are controlled by a relatively small number of people in the developed or Northern countries. The people of the South who still suffer from the burden of the old illiteracy are under-represented among those with access to and understanding of the new communications technologies.

Even in the developed North, the gap between those with the skills for using the new technologies and those without such skills is much wider than the gap between those who are print literate and those who are not. The gap will widen because access to such information systems is becoming more and more a matter of the ability to pay.

It is possible to direct the sophisticated in-

Charles Ungerleider is an Associate Professor in the Department of Social and Educational Studies at the University of British Columbia.

formation technologies toward a narrow audience of highly specialized consumers who can afford the service offered. Narrowcasting is the broadcaster's term for messages aimed at markets made up of relatively few, homogeneous people. The capacity for narrowcasting information services has developed far beyond the point where broadcasters are marketing all-news and all-sports transmissions.

The commercial applications of specialized data transmission services are varied and numerous. Some services will enlarge the knowledge gap between those with access and those without. At the same time, these services pose threats to privacy and, perhaps, even to one's human rights.

One system is capable of targeting populations selected on the basis of their demographic composition. Using census data, vehicle license data, and other information available from public records, a computer can select households which exhibit desirable characteristics. By connecting the computer with telephone dialing equipment, the pre-selected households can be contacted. If someone accepts the call, they can communicate with a pre-recorded tape which is capable of reacting to and storing their verbal message.

As increasingly sophisticated commercial and home applications are developed for information services, the gap between those who know and those who do not will increase. A number of steps can be taken which can diminish some of the inequalities inherent in such systems.

As our society places increasing emphasis upon information transmission, storage and analysis systems schools must see technological literacy as part of their mandate to produce citizens who can read, write, com-

pute and think critically. Schools should direct their energies toward producing a more unified curriculum which reflects the inter-relatedness of knowledge.

"As increasingly sophisticated commercial and home applications are developed for information services, the gap between those who know and those who do not will increase."

Schools approaching the task of unification on knowledge should attempt to reflect two notions among the basic concepts around which their curriculum is constructed. The first notion is: In every society, four systems — the technological, political, economic and social — are interconnected. In other words, the distribution of power, the distribution of goods and services, the way goods and services are created and packaged, and the way people live their lives are interdependent. The second notion is: Changes in one system of activity influence corresponding changes in the other systems. For example, a technological change like the invention of movable type influenced changes in the distribution of power between the state and the citizen, created careers as authors, and altered the way people spoke and thought.

A second way to reduce the gap between those who know and those who do not is to more adequately reflect the capabilities of the new technology in the framework of laws designed to protect privacy and human rights. Our legal system doesn't provide sufficient protection against the abuses of those who would use the new technologies for personal gain at the expense of the public good. At present, people are inadequately protected from revealing information about themselves which can be stored and used for commercial purposes.

Freedom of information is a third area in which steps can be taken to reduce the gap between those who know and those who would like to know. Government is the single largest repository for information. Current legislation essentially makes the government immune to attempts to make the information at its disposal available to individuals with a legitimate right to know. Variations on the themes of national security and executive privilege prevent citizens access to the mass of information collected about them by government agencies.

The new technologies have made something as simple as possessing the skills to live a full and active life in one's community a global issue. Nineteenth century political divisions have not grappled with the problems successfully. The persistence of jurisdictional disputes about broadcast rights, battles among regulatory agencies, and inequities between the North and the South indicates that the solution to the problems created by the new technologies won't be implemented without strong pressure from citizen lobbies and support from supranational bodies such as the United Nations. The technologies that created the global village generated a set of problems which demand solution on a global scale.

NOVA SCOTIA

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AMTEC '81 Media Festival Awards

Six Awards of Excellence were given to various organizations during the Truro conference.

"Challenges of the Eighties," a slide-sound show produced by the Customs and Excise College of Canada, received an Award of Excellence in the government media agency category.

"Peter Pitseolak — Image Maker" received the Award of Excellence in the school system category. This sound-filmstrip was produced by the National Film Board.

A videotape, "Learning the Game," received the Award of Excellence for the Separate and Public School Boards of Saskatoon and the University of Saskatchewan. Another videotape, "Read All About It: EPS16 to the Rescue," won an Award of Excellence for OECA.

"The Public Eye," produced by students at York University, won an Award of Excellence in the student category. Maria Pimental and Rein Suuralik cooperated with York University in producing this show.

"Shift," produced by the University of Saskatchewan won an Award of Excellence in the post-secondary category.

Awards of Merit

Three Awards of Merit were given in the motion picture category. "The Harp Seal" won an award for the University of Guelph. Manitoba Department of Education won an award for "Slide, Flip, Turn." The Construction Safety Association of Ontario won an award for "The Three Point Contact."

Six Awards of Merit were given in the videotape category. "The Cape Breton Adult

Vocational Training Center" received an award for its producers the Cape Breton Adult Vocational Training Center and the Educational Media Services of Nova Scotia. The University of Toronto received an award for "China: The Cultural Revolution — Part II: Convulsion."

"Children's Drawings — Personality via Drawing" won Carleton University one award. "Food, Facts and Fun" received an award for the Alberta Agriculture and the Government of Alberta.

Two other awards were given in this category. "Production Harmonisée: Nickler Le Monde" won one award for the Français Division of OECA. Montreal General Hospital and Medicom at McGill University won an award for "The Miller Multiradius Total Knee System."

Three Awards of Merit were given in the sound-filmstrip category. The Department of Community Affairs, Prince Edward Island won an award for "Piping Plover." The National Film Board (Atlantic) won for "I Just Don't Want to Die: The 1914 Newfoundland Sealing Disaster." Finally Prentice Hall Media received an award for "The Immigrant Experience."

One slide/sound show received an Award of Merit: "A New Tradition" by Concordia University.

For Free

A new list of audiovisual resources on library/information science is available for free from the National Audiovisual Center of the United States Government. This list contains more than 76 films, filmstrips, slide

sets, and multimedia kits for purchase and rental. The materials, produced by more than 23 federal agencies in the United States, include library and archival science, online retrieval, computer basics and more.

New Editor for CJEC

Dr. Dennis Hlynka will assume the editorship of the *Canadian Journal of Educational Communication* on July 1, 1982. Dr. Hlynka is Associate Professor in the Faculty of Education at the University of Manitoba. He holds a Ph.D. degree in Instructional Development and Technology from Michigan State University. He has published articles in many Canadian and international journals.

Dr. Hlynka will edit his first issue (Volume 12, Number 4) during the fall. The deadline for material for that issue will be August 1, 1982.

New Books

Audiovisual is for Women by Joan Nordquist is a current annotated bibliography of audiovisual materials for, about and produced by women in the United States and Canada. It contains materials not listed in earlier audiovisual bibliographies, as well as materials produced since their publication. Listings include 16mm films, videotapes, filmstrips, slides and recordings. A directory of distributors, additional resources and a subject index are included.

For further information: McFarland and Company Inc. Publishers Jefferson, N.C. 28640 U.S.A.

For a free copy contact:

National Audiovisual Center
General Services Administration
Washington, D.C. 20409 U.S.A.

1981 AMTEC Leadership Award Winner Franklin H. Winter

Franklin H. Winter, the 1981 winner of the AMTEC Leadership Award, retired from his position as Dean of Instructional Development for Sheridan College of Applied Arts and Technology in Oakville, Ontario in June 1981. Frank had held this position for 14 years. As Dean of Instructional Development, he had been responsible for all ETV production, Audiovisual Media Services, the numerous Sheridan libraries, microcomputers, teacher training and individualized instruction packages used in the various campuses of the college.

Frank began his educational career in North York where he was both an elementary and secondary teacher, a secondary school vice-principal and an assistant audiovisual coordinator. In preparation for his educational career, Frank graduated first

with a Bachelor's in Physical Education (Honours) and then an honours geography degree.

Over the years, Frank has held many important positions on committees dealing with media and educational technology. They include the Media Committee of the Ontario Library Association, and the Media Committee of the Ontario Home and School Association. He has been president of the Ontario Society for Microcomputers in Education. As well he has represented the Ontario Community Colleges on the TVOntario Program Committee and the TVOntario Nursing Education Committee. He was also appointed to the Community College Presidents' Committee for Professional Development. Frank has also been an active member of ECCO, the Educational Com-

puting Committee of Ontario.

Upon his retirement from Sheridan, Frank began a new career as Vice President of Omnibus Video, a computerized special effects house providing services to the television and film industry. The firm has headquarters in Toronto.

In spite of his many professional activities, Frank spends as much time as possible with his family, enjoying such outdoor activities as canoeing, windsurfing and skiing. His water activities have undoubtedly been the result of a stint in the navy.

Franklin Winter has been a long time member of AMTEC and predecessor organizations. His expertise, enthusiasm, and willingness to share with his fellow media specialists is a shining example to us all.

Micro-computers Teach Truck Driving

In a few years many of Canada's professional truck drivers may have learned many of their driving skills with the aid of a micro-computer. This prediction comes from preliminary results of experimental computer-assisted learning trials at Commercial Safety College in Masstown, Nova Scotia. The CAI experiment at the college is one of only a few such studies conducted in North America to help adults learn practical skills.

The college is recognized as a leading Canadian school for industrial and truck driver skills training and has developed the programming for a micro-computer which is teaching basic 13-speed tractor-trailer shifting.

"The results are encouraging and certainly point to a future trend in skills training," said college president, H.G. Marsh. "So far," he added, "students using the computer to assist their learning have achieved as well as students learning the same skills on a truck. Also, the computer-assisted students find the

instruction interesting and their attitude toward it is very positive."

The computer-assisted training was initiated to help the college find ways of reducing mechanic repair time on training truck transmissions, also to compensate for rising fuel costs, and to assist students with varying learning abilities. Learning basic shifting skills with assistance of a micro-computer may achieve these objectives. As a result, students learn and practice at the micro-computer in conjunction with practical in-truck training.

After introductory classroom work, the students spend about 20 minutes a day at the computer, until they master the skills being taught. Time for the computer-assisted training is taken from the time they would be involved in observing other students on the practice field, therefore not interfering at all with standard training procedures.

The student works at his own speed, interacting with the computer, learning what he

would normally learn in a truck cab. The micro-computer screen sits in front of the student in a classroom driver's seat. It has a 13-speed gearshift, control valve, clutch and fuel pedal all hooked up to the computer. The computer has a horn which sounds if the student selects the wrong gear, comes out of gear without clutching, or accelerates to a too high R.P.M. The computer asks the student questions on the screen. The student responds by shifting gears. When the correct procedure is completed the computer moves on to the next series of questions, asking the student for certain other responses. On completion of the computer exercises, students then move on to actual field trucks. The saving in time and improvement in learning has been achieved as the student has already mastered the complex 13-speed gear shift. The experimental CAI training trial has worked well enough that other skills training applications are being considered in the near future.

AMTEC Leadership Award

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

1. The nominee must have been active in the educational media field for 10 years or more.
2. The nominee may have been active at either local, regional, national or inter-

national level.

3. The award may be presented to one who is active, retired or deceased.
4. Nominations may be made by any member of AMTEC.
5. The nomination must include a brief biographical sketch of the nominee as well as any other information which will be useful to the selection committee in making their decision. This should include the educational background and the reasons why the nominator feels the award should be

made.

Presentation of the award(s) will be made at the AMTEC Annual Conference Awards Function. This will be part of the annual national conference in Winnipeg in June 1982.

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

Malcolm H. Binks,
AMTEC Awards Chairman,
Lincoln County Board of Education,
112 Oakdale Avenue,
St. Catharines, Ontario L2P 3J9

Of Interest

**Feminist Films or Videotapes
Vancouver Women in Focus
Arts and Media Centre
Suite 204-456 West Broadway
Vancouver, B.C.**

Sixty-five films and videotapes are available for purchase or rental from the Vancouver Women in Focus Society. The productions cover such issues as health, nuclear energy, culture and art. A complete catalogue of the media library including rates and information is available.

**Teleconferencing for
Business Communications
March 14-17
Orlando, Florida**

Seminar examines the technology of teleconferencing and the planning necessary to introduce the system. Information on planning strategies, major vendors, motivation

and use.

For further information:
Lorne A. Parker
University of Wisconsin
Radio Hall
Madison, Wisconsin 53706

**University Teaching in the 80's
University of Guelph
May 12-14, 1982**

The environments (physical, human, academic and political) in which we teach are rapidly changing as a result of increasing economic restraint, growing student concern for job training, and escalating professional responsibilities in teaching, research, and administration. The impact of these and other crucial issues on university teaching will be explored in workshops, panels, and seminars.

For further information contact:
Prof. E. McFarland,
Program Chairman,
c/o Office for Educational Practice,

Raithby House, University of Guelph,
Guelph, Ontario N1G 2W1

**Canadian Council of Teachers of
English Conference
University of Saskatchewan
Aug. 15-20, 1982**

"From Seed to Harvest: Looking at Literature" will be the theme for the 15th Annual Conference of the Canadian Council of Teachers of English. Topics to be considered are children's literature, integrating literature with reading, writing and speaking, interpretation of literature, poetry, film and literature, etc.

For further information contact:
Dr. Trevor J. Gambell
Conference Chairman
Department of Curriculum Studies
College of Education
University of Saskatchewan
Saskatoon, Saskatchewan
S7N0W0

AMTEC '82

**Resources in Context
University of Manitoba
Winnipeg, Manitoba
June 6-9, 1982**

Modern communications call us to take a broad view. Today's communicator orchestrates people, facilities, equipment, programs and materials to achieve a pre-determined end in a CONTEXT of many and varied constraints. Today's communicator is not as concerned with hardware and other artifacts of technology as with the basic principles of

communications, of change in systems, of learning and of cost effectiveness.

The AMTEC conference will focus on what is happening in Canada in the field of education, and what is projected for the future.

Ivor Davies, Associate Dean and Professor of Education at the University of Indiana, will be one of the major speakers. Drawing on his extensive military and business experience, Mr. Davies will discuss instructional technology with an emphasis on organizational development and task

analysis. Educated in England, Dr. Davies is the author of *Objectives in Curriculum Design, Instructional Technique* and many other books and monographs.

Thirty-one other speakers are confirmed for additional concurrent sessions at the Winnipeg conference.

Special social events have been planned to celebrate our 25th anniversary and to experience Manitoban hospitality.

Media Festival competitions are planned, and special leadership awards will be presented.

Alberta Invests in Apples

The Honourable David King, Alberta Minister of Education, in a long-awaited (by us computer buffs, at least!) announcement to the Alberta Society for Computers in Education, has ushered in the era of micro-computers in Alberta Education. He has done this by providing government support for "more than 1,000" computer packages now being offered for sale to Alberta's schools at a "substantial reduction from market price" (approximately \$5,000 for the full package). Such a package would consist of:

1. One 48K, Bell and Howell Edumod Apple Computer
 2. One Panasonic, 10 inch, Colour Monitor
 3. One Dual disk drive
 4. One Centronic 739 Printer
 5. Supporting software, such as Visicalc, Apple Pilot, and Apple Plot - Graph
- This particular hardware choice is intended to be a one time only decision and will, presumably, be reviewed prior to further such expenditure. As well, Bell and Howell has guaranteed 12 service centres in Alberta with the intention of providing a three to four day turn around.

Mr. King also made a number of other announcements concerning computers in education:

1. The establishment of an Office of Com-

puter Technology which will include a clearinghouse of computer materials for schools which will search the market for, buy and test computer programs written for schools and will also assist the production and distribution of locally-developed courseware.

2. The preparation (already well-advanced) of a draft Computer Literacy Curriculum to be piloted at the elementary, junior high, and senior high levels in Alberta's schools. Target date is September, 1982.
3. The establishment of a Ministerial Task Force to investigate the implications of technology in education. This board will consist of 12 members, from a "broad base of interest," to recommend on pertinent issues, on the institutional uses of computers, and on establishing educational courseware development and marketing in Alberta.
4. The development of computer orientation and inservice for teachers and administrators.
5. Alberta Education will encourage Alberta's universities and colleges to establish courses on computer education to meet teachers' needs.
6. The minister will be encouraging submissions on educational needs related to computer technology.

AMTEC Membership Records

Guy Leger, Secretary-Treasurer of AMTEC, will supervise the membership records for AMTEC beginning January 1, 1982. Any changes to addresses or renewal information should be sent directly to Mr. Leger.

Gord Jarrell, Coordinator of Learning Materials for the Scarborough Board of Education in Ontario, will initiate a new program when he begins a membership recruitment drive. Mr. Jarrell will personally approach people and agencies in the Toronto area about joining AMTEC.

For further information about the recruitment program, contact:
Mr. Gord Jarrell
AMTEC
P.O. Box 1021, Station B
Willowdale, Ontario
M2K 2T7

For membership changes, contact:
Mr. Guy Leger
AMTEC
P.O. Box 1021, Station B
Willowdale, Ontario
B3K 2T7

Patricia A. Dolan Lewis

Postman, N. *Teaching as a conserving activity*. New York: Delcorte Press, 1979.

Teaching as a conserving activity is a particularly readable book proclaiming a particularly timely philosophy. The author, better known for his co-authorship of *Teaching as a subversive activity*, is now suggesting an educational counterargument. As Neil Postman would state himself, this book would be the "vice versa" of his previous efforts.

For Postman, education is culture centered and defined by time. Today, in an era of technological change and constant innovation, education's role is to conserve tradition, to project the constant amid confusion. If however, the environment were static, then Postman suggests that education would be innovative. For Postman, education acts as a thermostat, triggering opposing forces to counterargue with current belief.

Building on the thermostat theory of education, the book considers the current information environment and proposes some solutions to present and future problems. It is based on the idea that children may learn to face the present by looking at the past.

Postman is intensely concerned with the intellectual and character development of youth. His views on education are not, therefore, specific to a particular curriculum, but refer to the entire education milieu.

Citing Plato as an early educational conservatism, Postman illustrates the need to argue against popular teaching. Plato, it seems, banished poets from the curriculum. Why?

Because Plato, like ourselves, was facing a tremendous change in the information environment. As an educator, Plato argued that poets, the transmitters of the oral tradition, were encouraging people to remain semi-literate. The young became emotionally and subjectively involved in the literature, and seldom had opportunities to critically evaluate it. It was this loss of objectivity to which Plato objected.

Postman moves quickly from Athens to America when he applies his thermostat metaphor to the television environment. He examines school and television side-by-side as contrasting communication systems and as contrasting curriculums. Television, termed the First Curriculum, makes attention subservient to content; whereas school, the Se-

cond Curriculum, makes content subservient to attention. For Postman, this is the fundamental difference between the two systems.

Specific differences between television and school resemble some of Plato's criticisms of the poets. Television's teaching style is emotional, imagistic and narrative. School's teaching style is abstract, cognitive, and expository. School's information is based on levels of complexity, but television's information is totally undifferentiated.

In analyzing the television environment, Postman repeats the research on television's effects, but pictures the impact more starkly. His conclusions make for interesting, if debatable reading.

Television is hostile to privacy because it demands novelty. As a result, television has diminished the prestige of places and occasions for secret-sharing. Television in its controlled exhibitionism has blurred the line between public and private life.

Television has immersed people in a surrogate experience, depriving them of the ability to distinguish reality from media.

These are only two of the criticisms Postman makes in Chapter Four. He concludes with the idea that school, if it refuses to mimic the biases of the electronic curriculum, can be a strong alternative teacher.

Confusing the real with the image is further defined in Postman's explanation of the technical thesis. In this succinctly written chapter, the author explains how methods or procedures can be given a validity apart from their actual meaning. He cites television as a prime upholder of the technical thesis because television rarely deals with a moral dilemma. Instead, television proposes a technical solution to every crisis. "To put it simply, God is not dead. He survives as Technique." (p. 99).

Utopian Thesis

In the Utopian thesis, Postman argues that the school should not get involved in areas which traditionally have been the domain of other institutions: sex education, motivation, ethnic pride, religion, psychotherapy. The thesis explains that transferring a family problem into a curriculum reduces the responsibility of the individual. As a result, school by taking over areas formerly

the responsibility of the church, government, family, medical profession can encourage a belief in victimization and failure. In the long run, such usurpation, will support the theory of individual powerlessness.

Postman's comments on this issue criticize the technicalization of the material through curriculum building. At no point does he argue that informal prayer or counseling is inappropriate in a school. Rather he argues against the process of institutionalizing value systems into manageable teachable component parts.

Alternative Curriculum

In the final sections of *Teaching as a conserving activity*, Postman proposes teaching subjects from an historical perspective; the philosophies of science, history, language and religion would be taught with an emphasis on classical forms. In contrast to this goal, he also proposes a course in media ecology which would transcend psychology and sociology. This course would be concerned with the technologies and techniques of communication. It would consider how information biases people's perceptions, values and attitudes.

Perhaps this is in the most interesting section of the book — the indepth outline of a new alternative curriculum. The remaining information on the classroom itself is of limited value because of the triviality of its subject matter.

The strength of *Teaching as a conserving activity* lies in its ability to analyze the current information environment and propose some startling implications for the educational community. Although written in the United States, the book is not American-centered. Its comments on the state of things apply as easily to Halifax as they do to New York.

Like most philosophies, this one is one-sided and at times, exaggerated. It is this hyperbole which allows the reader to grasp the dynamics of the argument.

Patricia A. Dolan Lewis is a lecturer in the Public Relations Degree Program at Mount St. Vincent University in Halifax.

Adler

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