

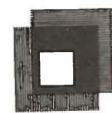
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media message

Fall Edition 1974, Volume 4 Number 1

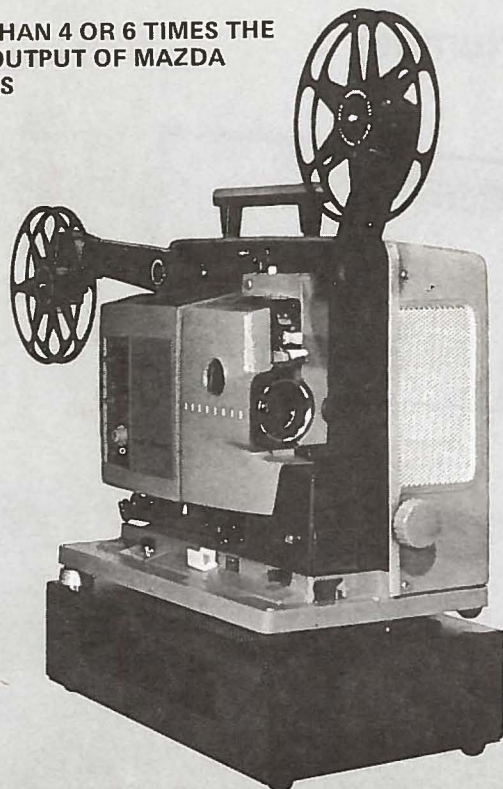
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L'ASSOCIATION des MEDIA et de la TECHNOLOGIE en EDUCATION au CANADA
ASSOCIATION for MEDIA and TECHNOLOGY in EDUCATION in CANADA

media message

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audio-visual media in the university library:

AN INTEGRATED APPROACH TO INFORMATION STORAGE AND RETRIEVAL

by John B. Black, Associate Librarian
and Bernard Katz, Senior Catalogue Librarian.

"If I were founding a university - - and I say it with all the seriousness of which I am capable - - I would found first a smoking room; then when I had a little more money in hand I would found a dormitory; then after that, or more probably with it, a decent reading room and a library. After that, if I still had money over, that I couldn't use, I would hire a professor and get some textbooks."

(Stephen Leacock, "Oxford as I see it.")

Traditionally, university libraries have been print oriented with books and journals being their stock in trade. While public libraries and the "resource centres" of many public schools, high schools and even community colleges have integrated all communications media into their operations, this has not generally been true of Canadian university libraries. The latter have tended to avoid acquiring audio-visual materials or else have placed them in separate collections isolated within the library system. Furthermore, many university librarians have

tended to cling to the traditional "bookman" image that has so strongly and for so long been associated with university teaching, learning and research.

The primary objective of a university library should be the provision of the highest possible level of service to its academic community. Realization of this objective necessitates making all types of information and information sources fully accessible regardless of their form: print, microform, manuscript, audio or video recording, film, slide-tape set, or machine readable data base. From an operational point of view it certainly would be easier for the library to concentrate on the more traditional media, but this would do a great disservice to the user and eventually to the long-term interest of the library system and indeed, to the university itself.

An integrated approach to the handling of information storage and retrieval has been developed over a period of time at the University of Guelph. The original design specifications for the McLaughlin Library building, drawn up in the mid-1960's, were not based on the expectation that the library would become extensively involved in "non-print" media. Future reliance on the heavy use of microforms and even computer terminals was anticipated, but extensive use of audio-visual materials in support of the academic program was not provided for. Apart from a limited recreational and course related audio tape listening area and the provision of "hot" study carrels, no specific plans were included for the utilization of audio-visual materials. However, the basic flexibility of the McLaughlin Library design has permitted the accommodation of a wide variety of non-print materials without requiring extensive changes in the building. Facilities for individual and group use of video tape materials, film viewing, slide-tape presentation and computer terminals have been added readily over the past two years.

This gradual but fully realized integration of audio-visual and other non-print materials into the University of Guelph Library System has been facilitated by excellent cooperation from the University of Guelph Audio-Visual Services. In general terms, Audio-Visual Services, under the direction of Dr. G.A.B. Moore, provides production facilities and advice, equipment, and technical support while the Library provides the storage and retrieval facilities for audio-visual materials. The same principles of cooperation have applied in the area of machine readable data bases, with the Institute of Computer Science, under Dr. K. Okashimo, providing computer

facilities and access programming for machine readable files purchased and catalogued as part of the Library collection.

Full integration of non-print media means that information held in these forms must be treated in the same manner as traditional library materials in terms of acquisition, cataloguing and user access. Audio-visual materials may be requested in the same fashion as books or other traditional library resources and are subject to the same procedures. During the 1973-74 fiscal year approximately \$9,500 worth of film, \$1,200 in video tape, and \$1,000 worth of audio recordings and slide-tape sets were purchased by the Library at the request of various academic departments.

Audio-visual materials are fully catalogued and this information is integrated both into the Library's manual and machine readable author/title and subject catalogues. Thus, a user searching for a particular subject or under a certain author may well find relevant material in printed form or in any of the audio-visual media. (See examples.) This applies equally to special interest catalogues and bibliographies created by the Library for specific departments or individuals using the computer. In this way the library can provide its users with integrated computer produced lists, or bibliographies of print and non-print holdings in any subject area, as well as all-subject lists in specific media. These bibliographies, created from users' "interest profiles", can be regularly supplemented as new materials are added to the Library's collection.

A recent project initiated under the auspices of the Council of Ontario Universities holds the potential for a significant breakthrough. Six university libraries in Ontario and two in Quebec are cooperating in a trial system that will share bibliographical data and reduce the cost of cataloguing. An important product of the system is the creation of a machine readable union file of library materials held by the libraries involved. If the project proves a success, it will enable users to find information in all media held in the major research libraries of Ontario and Quebec. It could even be the basis for a national system.

Film has been a well established instructional tool for many years. In the summer of 1973, the film booking operation and the film collection operated by Audio-Visual Services were transferred to the McLaughlin Library. Since then, this collection has been added to the Library catalogue and a number of additional films previously acquired by individual

departments have been placed in this central collection where they are accessible to the whole University community. New films now are regularly being purchased at the request of academic departments such as Drama, Psychology, Food Science, Land Resource Sciences, Zoology, and Botany and Genetics.

Video tape recordings are increasingly being used as an educational medium. Working copies of programs produced or recorded by Audio-Visual Services now form part of the Library's holdings. A growing collection of purchased video tapes is also being developed and now totals more than 250 tapes. Many of these purchased video tapes are materials distributed by the Ontario Educational Communications Authority, but materials from a number of other sources and countries are also being added.

The Library's collection of audio recordings, both tape and disc, includes more than 2,500 titles. A major part of this collection consists of classical, folk and a variety of popular music, but increasing amounts of spoken word and documentary material in a wide range of disciplines is being added. In addition, the Library has been acquiring slide-synchronized tape packages at the request of several academic departments.

Extensive microform holdings (mainly microfilm and microfiche) have successfully supplemented the Library's collection of printed materials for some time. As a relatively new university, many important manuscripts and printed works from earlier ages are now available to us only in microform, due to prohibitive costs and/or scarcity. Recent innovations include colour fiche, and improved viewing and reproduction facilities. The use of microforms will increase in importance (especially with senior undergraduates and graduates) as information continually expands, space stabilizes, and finances contract relative to costs and availability.

Some special facilities are required to provide access to all of these materials. Indeed, after acquisition and cataloguing, integration of user access is the final, and perhaps most difficult goal to achieve when seeking a total approach to information storage and retrieval.

In the McLaughlin Library, what was originally designed as an audio tape listening area has now become a group film and video tape viewing room capable of accommodating up to 65 persons. There is also a smaller

room available in the same area that will accommodate 20 listeners to audio materials. Audio and video recordings are held as part of the Library's reserve collection. Two video tape play back units, three slide-tape units, 18 audio tape recorders, and 10 portable audio cassette players for individual use (or two, or three persons') are located immediately adjacent to the Reserve Desk. In addition, four slide-tape units are located in the only branch library in the System.

Films from the collection or from off-campus sources may be booked through the Library's film booking office for use elsewhere in the University. Audio-Visual Services will provide a projector (and projectionist if required) and this service may be requested at the time a film is booked. Video tapes held in the collection may be drawn by Audio-Visual Services at the request of a faculty member for showing to classes in other areas of the campus where video tape play-back equipment is available.

The Library's subject divisions each have a number of microform viewing machines located near their respective Reader Service Desks. There are a total of 45 microform readers and 10 reader/printers in the Library System. Some of these are quite portable and may be booked into an individual library study or a group study room. Microfilms are integrated with printed materials, while microcards and fiche are kept in special cabinets near the viewing equipment. Reproductions on paper are readily available and arrangements may be made through Audio-Visual Services for overheads, etc.

Audio-visual and other non-print materials are valuable information resources in the process of teaching, learning, and research. A library system that allows full access and use in an integrated manner will help promote these media across the university and educate the community in their advantages as information resources. The University of Guelph Library System aims to develop the use of its collection to the fullest extent



possible. It exists to be used and not merely to be stored away, and it is in the best interest of the whole university community that it be used as extensively and effectively as possible.

SUBJECT CARDS

LANDSCAPE GARDENING. M-FILM SB 436 G6 CODI, DONALD HARRY. ROOT ENVIRONMENTS FOR LANDSCAPE PLANTINGS IN URBAN AREAS. URBANA, ILL., 1967. IV, 100 L. ILLUS. THESIS (M.L.A.) - UNIVERSITY OF ILLINOIS	MICROFILM
LANDSCAPE GARDENING. SB 473 B43 BERNATZKY, ALOYS. GARTEN FÜR UNS; IHRE ANLAGE UND GESTALTUNG. (GÜTERSLOH) BERTELSMANN RATGEBERVERLAG (1968) 206 P. ILLUS. (PART COL.). PLANS.	BOOK
LANDSCAPE GARDENING. FILM BASIC TECHNIQUE FOR HOME LANDSCAPING (MOTION PICTURE) U.S. DEPT. OF AGRICULTURE IN COOP- ERATION WITH THE AMERICAN ASSOCIATION OF NURSERYMEN, 1958. MADE BY SUN-DIAL FILMS. 12 MIN. SD. COLOR. 16 MM. SUMMARY: SHOWS THE BASIC TECHNIQUES FOR HOME LANDSCAPING SUCH AS: SYMMETRY AND BALANCE, PLANT AND GARDEN SPACES, AND THE SEE NEXT CARD	MOVIE

AUTHOR CARDS

LAING, RONALD DAVID, 1927 - VIDEOTAPE BF 311 R36 R.D. LAING AT THE UNIVERSITY OF GUELPH (VIDEOTAPE) UNIVERSITY OF GUELPH AUDIO VISUAL SERVICES, 1974. 3 REELS. 120 MIN. B&W. 1/2 IN.	VIDEOTAPE
PHONODISC HN 18 C634 1967 DL 4 LAING, RONALD DAVID. THE OBVIOUS (BY) RONALD LAING. (PHONODISC. LIBERATION RECORDS) DL 4. (1968) 25. 12 IN. 33 1/3 RPM. (CONGRESS ON THE DIALECTICS OF LIBERATION, LONDON, 1967. (PROCEEDINGS) DL 4)	RECORD
PHONOTAPE HM 132 L32 PT. 2 LAING, RONALD DAVID. THE ILLUSION OF ACHIEVEMENT. (PHONOTAPE) BIG SUR RECORDINGS 1182. C1971. 1 REEL. 5 IN. 3 3/4 IPS. (HIS SANITY, MADNESS, BLOWOUT CENTER (PHONOTAPE) PT.2) TITLE FROM CONTAINER. RECORDED MARCH 25, 1967 AT THE ESALFN INSTITUTE. DURATION: 60 MIN. PLASTIC. DUAL TRACK. SUMMARY: LAING RELATES SCHIZOPHRENIA (THE VOYAGE BACKWARD OF SEE NEXT CARD	AUDIOTAPE

instructional development: where from, where to?

Donald S. Campbell, Ed.D.

Many educators believe (or would like to believe) that education is becoming more systematic and scientific in its approach to its responsibilities than in the past. There are, of course, other educators, both real and self-proclaimed, who oppose this shift. There are the die-hard reactionaries who are threatened by change they will not or cannot understand and will inflict on their listeners a swansong about those good old days. And there are the naive "humanists" who will say, "Further technology will only further dehumanize our society." Overlooked, it seems, is the fact that technology is created and used by people and what is created and used is a reflection of people's value systems. If we want technology to work for humaneness, we should be developing a technology of education which will facilitate those values in our students. But this critic is caught in his own catch 22 — he is unwilling to manipulate anyone's behaviour, which is of course what we do when we teach.

If the anti-technologists lose the battle, what might be an outcome of this current trend toward a more systematic and scientific approach to education and instruction? One outcome will be a growing number of professionals for whom teaching will be as much science as art. Their expertise will be acquired by learning and applying a generalizable body of knowledge from the behavioural and communications sciences, as opposed to acquisition dependent on emulation, apprenticeship, trial-and-error, and token teacher training. These teachers will concentrate their efforts on the process of instruction with an understanding of the learning process in groups and individual students. In short, they may practice what is coming to be called "instructional development". It might be noted here that this activity is not the same as

curriculum design. The latter, given a traditional view of curriculum, is concerned with decisions regarding content and *what* ought to be taught. Instructional development is concerned with process decisions and *how* to effectively facilitate learning.

More specifically, then, what is instructional development or ID?

1. ID IS AN APPROACH TO EDUCATION SUBSUMED UNDER EDUCATIONAL TECHNOLOGY

Since the 1940's, the collaborative efforts of communications specialists, learning psychologists, and educators are providing an emerging body of knowledge which can be characterized as a technology of education. This technology is the result of a deliberate effort to apply the scientific method to the understanding of the teaching-learning process. The results of this inquiry are providing teachers with empirically derived tools and skills to complement, and to some extent replace, intuitive judgment. These tools and skills provide the basis for instructional development activities. A technology of education is not to be confused with the use of the products of technology in education, often referred to as audio-visual education or educational media. The latter represents one aspect of the design of learning environments; that is, the interface between learner and stored information.

Figure 1 attempts to show the interrelationships among Educational Technology, Development and Media.

EDUCATIONAL TECHNOLOGY

(Purpose: to provide a knowledge base for the development of effective, efficient and replicable learning environments)

INSTRUCTIONAL DEVELOPMENT

Function: Application of knowledge of teaching-learning process to instructional problems, with emphasis on the development, management and evaluation of specified learning environments

EDUCATIONAL MEDIA

Function: Application of products of communications technology to teaching-learning process with emphasis on systems for the design, storage, retrieval and management of information

1. THE INTERRELATIONSHIP OF EDUCATIONAL TECHNOLOGY, DEVELOPMENT AND MEDIA
2. ID ATTEMPTS TO DEVELOP FORMS OF INSTRUCTION THAT ARE APPLICABLE AND HAVE A HIGH PROBABILITY THAT THE DESIRED OUTCOMES OF INSTRUCTION WILL, IN FACT, OCCUR.

In the past (and currently), the teaching process has often been characterized by individual trial and error and uncertainty of outcomes. This stage of development has been compared to agriculture or medicine before systematic and scientific methods were applied. These areas have now reached the point where replication of certain actions will result in similar results and with high probability. That is, introducing A, B and C into the environment will result in Z most of the time. Instructional Development seeks similar replicability and certainty in the teaching-learning process. Whereas in most schools we allow student achievement to vary, and hold constant such aspects of the teaching environment as time, methods, place, grouping; ID seeks to hold achievement relatively constant (and high) while developing an environment in which these latter aspects can vary, thus accommodating individual differences among students.

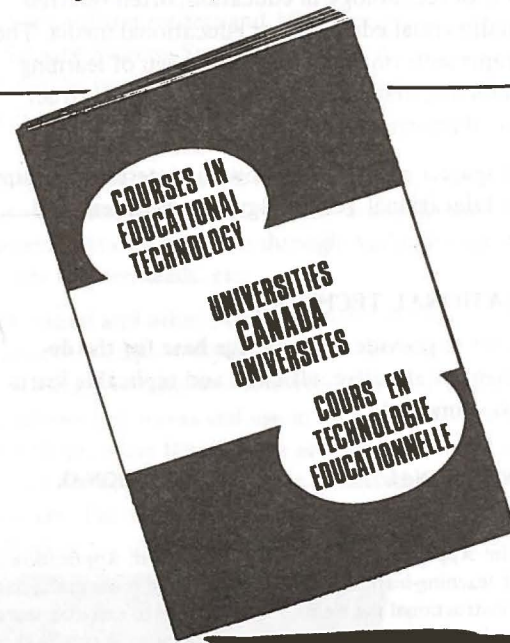
3. ID APPLIES RATIONAL AND SYSTEMATIC APPROACHES TO SOLVING INSTRUCTIONAL PROBLEMS.

Like all applied sciences, Instructional Development emphasizes rational and systematic approaches to problem solving. We want to be able to apply our relevant knowledge to the design and management of effective (certain and

replicable) learning environments and to the assessment of the outcomes. The instructional developer ought to be able to: 1) define instructional problems, taking into account school and community needs, curriculum decisions, student characteristics, and available resources; 2) develop learning environments based on strategies derived from desired goals and objectives; and 3) evaluate the process and results of the instruction with sufficient sensitivity that deficiencies in the instructional process can be identified and corrected.

4. ID MAKES THE TEACHER ACCOUNTABLE FOR HIS OR HER PROFESSIONAL RESPONSIBILITY.

Instructional Development says that the professional responsibility of the teacher is to facilitate learning — to create effective learning environments — for all persons with whom they are charged. Society should not expect less from its professionals, especially if they are supported by the largest share of tax revenue.



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never mind about the ball, let's get on with the game!

by
Alan Robertson, Director
Department of Communications Media
The University of Calgary

Earlier this year the University of Calgary held a two-day conference entitled "Toward Instructional Excellence" and when I was asked to talk about the role of educational technology and innovations in learning, I experienced the same kind of excitement that I had some thirty years ago when I played my first game of college rugby football. On that occasion, as I recall, I considered myself to be well prepared for the task: I was in reasonably good physical condition, I had spent a fair amount of time absorbing the theory of the game and I had devoted considerable energies to the practice sessions until I was tolerably sure I knew what to do with the ball. The crucial test of course occurred during the first five minutes of the game. As a front row forward I was schooled in the art of gaining possession in the line outs, shoving hard in the scrum and combining my efforts with the rest of the pack during those glorious moments when the ball was taken at a rush with the feet. I was a little surprised and somewhat unprepared when quite suddenly I found the ball in my hands. This is how I felt when the invitation to present a paper was quickly followed with a request for a title. One of the useful skills I acquired from playing rugby was to think on my feet. The result is the tongue-in-cheek heading to this article. Readers will readily understand that the title I chose represented merely a conditioned reflex, an attempt on my part to get moving in the general direction of the goal line. The object of this particular game as I understood it was to discuss excellence in university teaching and also to say something about educational innovation. As I thought further about the topic for

discussion and the composition of the audience I was to address (about a hundred members of the academic faculty), I decided to refine the title and to talk about learning by design and the role of the university teacher. Because of the nature of my work at the university you might have expected me to concentrate my attentions upon the hardware of educational technology or perhaps to present a dazzling and spectacular audio-visual presentation. To do this, however, would in my estimation have been a tactical error and I therefore devoted my time to some thoughts on the role of the university teacher in relation to the learning process. The text that follows is an almost verbatim transcript of my address, and I offer it with some diffidence to those readers of the *Media Message* who are involved in applications of educational media within the context of higher education. The views are necessarily my own, although I have borrowed from the philosophies and viewpoints of those writers I have acknowledged where it seems appropriate.

Although I referred to the *role* of the university teacher in the singular, I am of course aware that there are many roles that faculty members are called upon to play and I have chosen to dwell on three which seem to be pertinent to higher education. First, the teacher as performer/artist; second, the teacher as esthetician; and third, the teacher as a resource person. In practice, of course, these three roles are not separate and I have made no attempt to deal with them serially but rather chosen to treat them as three strands of the same theme.

Ernst Hans Gombrich, professor of the history of the classical tradition at London University, wrote in his book *MEDITATIONS ON A HOBBY HORSE* "Art is not just the expression of the age: It is the work of people who have to find approval if they want to live." I think that statement is particularly apposite to the deliberations of this conference. The university has to find approval if it wants to live.

The role of the teacher as artist should be subject to the ethical demands of education. It is the teacher's duty to bring to fruition the desires and needs of his students, to encourage and assist the student in entering full professional status and in removing the obstacles and barriers presented to the newcomer in any activities which bear no relation to the quality of his work. And especially it is the duty of the teacher to listen to what the student has to offer.

Of course it is more than listening. There are many ways of obtaining feedback. But this sensitivity, this openness to communication from the learner is a rare

quality and needs to be continually cultivated. Going back to the performer/artist analogy, a good actor is always conscious of what he is doing on stage within the setting of the play and the confines of his characterization. But I suspect that even proponents of the method school of acting (the mumble, grunt and scratch school as someone so unkindly put it) even they, I suspect, have a small part of their being set aside watching themselves and watching the reaction from the audience and from the other actors. Of course, I am not saying that many teachers do not do this, I am merely saying that I think we should be more aware of this kind of performing activity.

Another responsibility of the artist/performer is to tackle the art of discovery, the art of invention and the art of direct awareness. In Jerome Bruner's book *ON KNOWING: ESSAYS FOR THE LEFT HAND*, he talks about the effort of knowing. He says "*Perhaps it consists of departing from the habitual and literal ways of looking, hearing and understanding in order to resolve the ambiguity that is a feature of works of art.*" It is one of the prime responsibilities of the teacher to resolve ambiguity.

A little digression here is necessary to discuss some terms which describe methods of communication. Robert Lewis Shayon, television critic for the *SATURDAY REVIEW*, was reviewing the television special "*The Rise and Fall of the Third Reich.*" He was lamenting the producer's inability to reproduce the style and drama of great moments of suspense and irony and he suggested that they had failed to understand the difference between digital and analogic communication. He noted with regret that there was, during the entire three hour production, only one brief sequence which displayed an example of analogic thinking. It was in some footage filmed in November 1942 as the tide of victory was turning against the German people. The Nazi elite were shown listening to a performance of Beethoven's Ninth Symphony. The Berlin Concert Hall was packed with dress uniforms swelling to the triumphal hymn of joy, peace and brotherhood. And then the scene cut abruptly to a square in Stalingrad where some ninety thousand Nazi troops are being paraded in defeat. The stirring sounds of Beethoven's music continue but it is undercut by the contradictory close-ups of the dispirited and defeated German soldiers caught in the shame of surrender. As Shayon pointed out, the ironic tension illuminated the fusion in a symbolic pattern of the Third Reich's Rise and Fall — the whole story. Well, apart from being an example of the potential of television, which many of you I know will agree is rarely

exploited, his article uses the terms *digital* and *analogic* to describe method of communication, the first involving naming and counting and the second using ways of thinking which sense relationships. These terms of course are strangely familiar if not themselves analogous with those coined by other theorists in the philosophy of learning. We are all familiar with the deductive and intuitive methods of reasoning. McLuhan talks of the *lineal* and the *mosaic* approaches to the learning experience. Bruner speaks of *predictive effectiveness* and *metaphoric effectiveness*; predictive effectiveness, he says, comes through the slow accretion of knowledge and metaphoric effectiveness is the result of the connecting of diverse experiences by the mediation of symbol and metaphor and image.

Analogue, mosaic and metaphor — what have these three in common? How do they differ from digital, lineal and predictive modes of awareness? In a word, involvement. Each of us brings an accumulated wealth of his own unique experience to relate to any new experience. It is the extent to which we can equate past experiences to the new one, the degree to which we can thrill to the joy of association that determines whether or not we are able to become involved in the personal act of discovery or as Bruner says "in the effort of knowing."

It seems clear from what I've just said that one of the tasks of the teacher then, is to involve the student in the *creative act of intuitive association*.

This creative enterprise is what Bruner calls "an act that produces effective surprise." He goes on to say that effective surprise produces the shock of recognition and further proposes that all forms of effective surprise grow out of combinatorial activity, a placing of things in a new perspective.

Now to return to the theme of the teacher as performer/artist, perhaps this "effort of knowing" that Bruner was talking about can be achieved in our environment by steering the student towards this effective surprise, this shock of recognition, by a devious path, by not stating the obvious but by subjecting him to a combination of sights and sounds which compels him to leap over several sequential thought processes to make hitherto unseen connections. We might well adopt the Shakespearean approach "though indirect yet indirection thereby grows direct." Isn't this what the art of teaching is all about, the ability to contrive the learning situation so that the learner not only makes the necessary discoveries for himself but also experiences this shock of recognition

which comes to fill the gaps in his experience? To continue the Shakespearean metaphor, what I'm suggesting is that we should be aware of the stock in trade of the Elizabethan writers who used rhetorical patterns to lend clarity and force to the expression of their ideas. I realize that rhetoric is almost a dirty word nowadays, but what I am suggesting is that we use sounds and images to express the figures of rhetoric, such as repetition, parallelism and balanced contrast.

When I speak of rhetoric I am not only referring to the written and spoken art of discourse. The role of the esthetician/humanist/teacher is to know the language of images. To know what happens when we juxtapose words with pictures. Yes, you can talk with visual images, but be aware of ambiguity for you can be as ambiguous with pictures as you are with the spoken word. Of course, all of this is not new, the creative person has a sharpened need to communicate and he recognizes that the written and spoken languages are but two of the media of communication. The artist/performer/aesthetician is as well, a teacher of experiences, a communications system, a resource bank, a living statement of the possibility of vision.

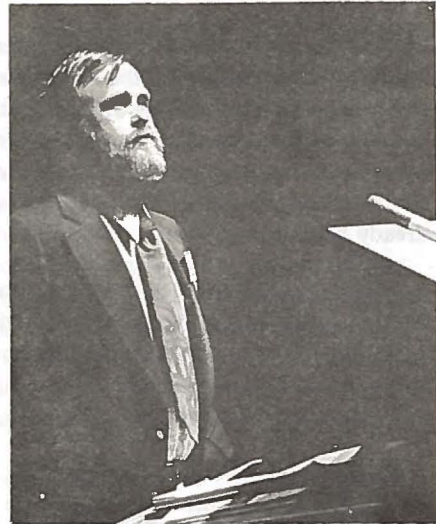
I see that I am rapidly approaching the end of my allotted space and I have not said anything about innovation or excellence. Or have I? I have deliberately refrained from stressing the words 'media' and 'technology' although as you are well aware there are many faculty members who have made or are making exciting uses of the newer technologies. The pity of it all is that most of these departures from the traditional approach to teaching go unnoticed, even by faculty members' own departmental colleagues.

I hope that this paper perhaps may serve to stimulate an ongoing dialogue and I welcome response from readers who may wish to continue the discussion through the medium of the *MEDIA MESSAGE* and, hopefully, at *AMTEC '75* in Calgary next June. We are all in danger of succumbing to the comfortable environment that is the university. The environment which often seeks to persuade us that all is well with our world. It is not out of place to suggest that while everything is not all wrong with university teaching neither is it all right. I began by writing about learning by design and the roles of the university teacher. I said that we have to be more aware of the effects of our teaching. I suggested that innovation does not mean throwing out two thousand years of scholastic tradition and replacing it with

technology. But, I am also suggesting that we ought not to be unnecessarily protective or overly suspicious of the impact of technology on higher education. It would be futile for instance to dismiss the effects of media on learning for our students arrive at university with a lifetime of such learning experiences already behind them.

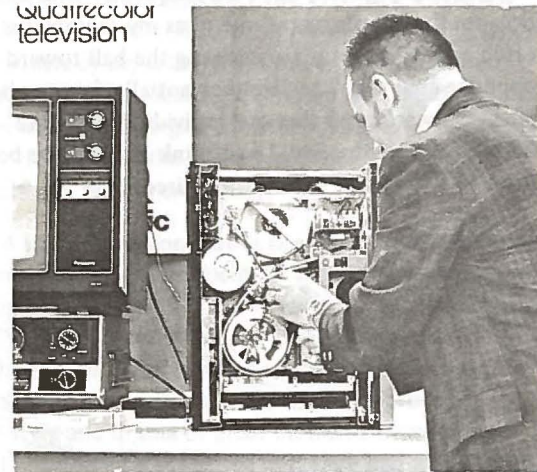
Whenever I am involved in the learning process, whether formally or informally, I sometimes wonder if learning has to be the bitter and humourless experience that it often is. I wonder, too, if we are really concerned enough about the learner.

It takes me back to my starting point — the rugby game. During the five years I have been at the Calgary campus I have had many encounters and enjoyed many games, but I am frequently confused because the people who I regard as my teammates often appear intent upon carrying the ball toward the opposite goal line. I realize that not all of us can be pushy forwards and that our individual styles are bound to be distinctive. I just think it would be better if we were all going in the same direction.



"..Bless us for now.."

Quatrecolor television



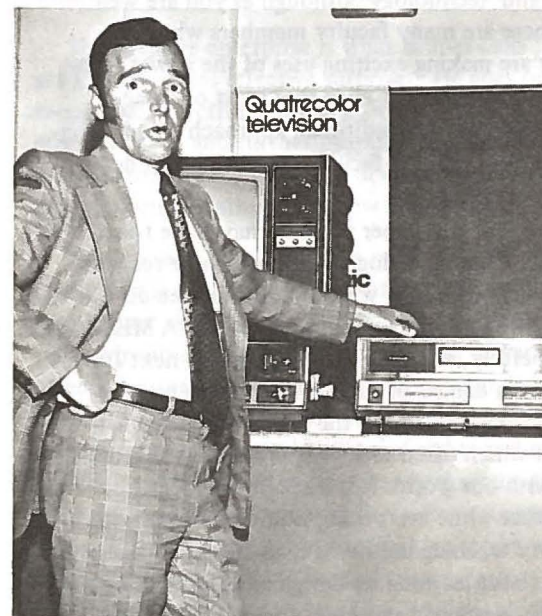
"..these *#* things all stick"



"..now let's see, what was that again, two loafs of bread.."



"listen to this guy.. and it's only 9:30.."



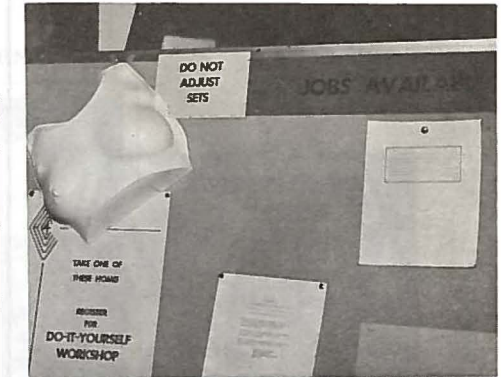
"..now this little gadget.."



"..now this is the destruct button.."



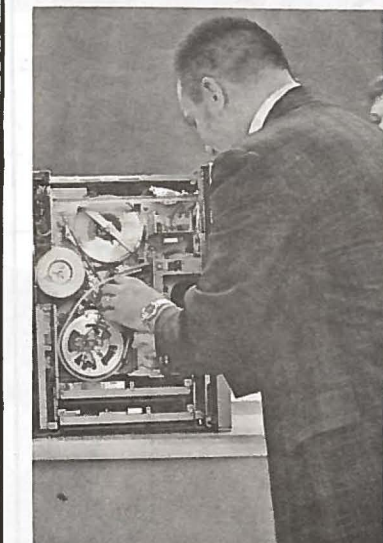
"..sometimes I have this feeling.. like a big hand is.."



"... set of...."



"..now which one of you put it on the bulletin board.."



".. the @*#*# thing is still stuck.."





"...in Toronto, boy.. are they big.."



" that's right ..bar.. B..A..R.."



"..Ho, ho, ho, . . . this is very interesting.."



"Is there anyone named Walker here...?"



"..a very reflective group..."



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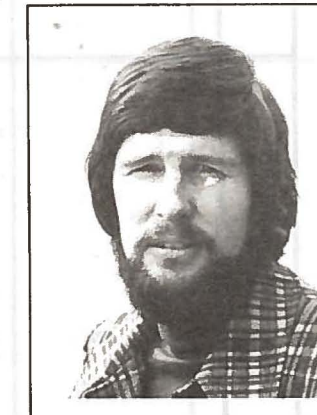


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COMMITTEES/SUB-COM./ TASK FORCES	CHAIRMAN	MEMBERS	OBJECTIVES TASKS
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Publications Committee	Mr. Gordon Jarrell Co-ordinator A-V Services Scarborough Board of Education Scarborough, Ontario	Mr. Grant Stephenson Mr. Arthur Knowles Mr. Glen Garden Dr. Richard Lewis Mr. Tony Hiscoke (Board Rep.)	1. To recommend to the board policies suitable to guide a publications program. 2. To acquire sufficient advertising funds to make MEDIA MESSAGE, our association publication, financially solvent.
Program Committee	Dr. G.A.B. Moore Director A-V Services University of Guelph Guelph, Ontario (519) 824-4120	Mr. Barry Black Dr. Fred Branscombe (Board Rep.)	1. To report to the board with a priority list of activities for the 1975-76 year.
Conference Advisory Committee	Mr. Tom Colbens A-V Consultant Instructional Media Centre Edmonton Public Schools 10070 - 107A Avenue Edmonton, Alberta T5H 0Z8 (403) 429-5621 Duncan McArthur Hall Queen's University Kingston, Ontario	Mr. Mal Binks Mr. Denis Warburton Ms. Lois Vail Mr. Wayne Blair Dr. Ken Bowers Ms. Sally Lawrence Mr. Allan Robertson	1. To review and revise existing C.E.C. conference guidelines and report to the board in June 1975. 2. To conduct an election and to record and report to the membership on the results of that election.
Archivist Committee	Mr. Ian Hose 14 Willowbank Blvd. Toronto 12, Ont. Mr. Gordon Jarrell Scarborough Board of Education Scarborough, Ontario		1. To identify those individuals whose service to the Media Community in Canada warrants the commendation of this association.
Media Personnel Classification Task Force	Co-Chairmen - Mr. Doug Toghani, Director Media Centre Univ. of Toronto 121 St. George St. Toronto, M5S 1A1	Mr. Bruce McLean Mr. Gar Fizzari	1. To review the need for a Media Personnel classification system and to report to the board with recommendations by June 1975.
National Committee Media Standard Project (a joint project of A.M.T.E.C. & C.S.L.A.)	Co-Chairmen - Dr. F.R. Branscombe (AMTEC) Co-ordinator of A.V. Education North York Board of Education 3174 Bathurst St. North York, Ont. Mr. Harry Newsom (CSLA) School of Library Science Univ. of Alberta Edmonton, Alberta	A.M.T.E.C. - Mr. Gordon Jarrell (Ont.) Dr. Ken Bowers (Alberta) Mr. Gordon MacLean (N.B.) Mr. Robt. Wylie (Ont.) C.S.L.A. - Ms. Margaret Scott (Ont.) Miss A.L. Florence (Manitoba) Mrs. Florence Willson (B.C.) Mr. Larry Moore (Ontario) And a host of Prov. consultants and sub-committee members	1. To combine previous C.S.L.A. and E.M.A.C. Media Standards Guidelines into a single revised, and up-dated publication. (target date for publication, summer 1975).
A.M.T.E.C. "Council" Task Force	Mr. Tony Hiscoke Mr. Glen Garden		1. To identify and contact those provincial and national associations suitable for representation on the A.M.T.E.C. Council scheduled to meet for the first time, June 1975 in Calgary. 2. To recommend to the board a breakdown of interests professional within the association suitable for DIVISIONAL status.
Canadian Education Communication Conference Program Committee, 1975 (a sub-com. of the Conference Advisory Committee)	Co-chairpersons - Ms. Sally Lawrence & Mr. Allan Robertson Dept. of Communications Media The University of Calgary Calgary, Alberta T2N 1N4	Sub-Committee Chairmen - AWARDS - Mr. D. Cormack PRODUCTION - Mr. J. Philpot SERVICES - Mr. B. Thornborough EXHIBITS - Mr. R.E. Silvertsen EVALUATION - Mr. R.E. Miller FINANCE - Mr. Barry Eshpeter HOSPITALITY - Mr. John Stoeber MESSAGE CENTRE - Mr. Moe Sinotte EXTERNAL PUBLICITY - Mrs. Dorothy Patterson INTERNAL PUBLICITY - Mrs. Hazel Sangster REGISTRATION - Mr. Garry Smith STUDY TRIPS - Mr. Dick Van de Geer	1. To organize and manage the 1975 C.E.C.C. in Calgary, Alberta.

guided- design

by
Robert A. Stager

DESIGN PROJECT 1

Introduction

John Newton, an engineer Peace Corps volunteer, and five other Peace Corps members have just settled into their seats on a jet plane for a nonstop flight overseas. In six hours, their plane will land in Port City. There they will be met by Charles Wales, the man who wrote the enclosed letter. This letter describes John's Peace Corps assignment. Although John is going to do the field work on this project alone, the five men on the plane will help him perform the design work.

During the next two weeks, each of you in this class will play the role of John Newton, the project leader. The five students who work with you will act as the other members of the Peace Corps team who help John plan.

Good luck, we hope your project is a success.

INSTRUCTION 1.1 — THE PROBLEM

Read the enclosed letter. Then form a six-man discussion group and prepare a written list of questions about the project. While you work, have *one* man in your group read Feedback 1.1

PEACE CORPS

Port City Office

TO: John Newton
SUBJECT: Overseas Assignment
FROM: Charles Wales, Peace Corps Supervisor

Because you are an engineer, you have been assigned to help the people in a small, primitive, isolated village deep in the rain forest develop their housing.

The village is located on the south shore of a very large lake, about 15 feet above the water's surface. To the west, the lake empties over a 200 foot waterfall to a river below. Fifty yards south of the village is jungle-forest which ends 200 yards later in a steep cliff. The edge of the cliff is 20 feet below the village. The river is 100 yards from the base of the cliff.

The people of the village farm the area to the east of their straw huts. They cook their food over open fires in clay pots, which they themselves make, using materials found at the base of the cliff. The clay is carried to the village in baskets over a difficult two-mile long path up the side of the cliff.

Several years earlier a missionary helped the people of this village build a permanent, brick meeting house. They made the bricks themselves, using clay from the base of the cliff. The people were very pleased with this permanent building and would like their dwellings made of the same material. However, carrying all the clay for the meeting house took the villagers one and one-half years. It took this long to build the house because the path to the top of the cliff is so difficult to climb, during the rainy season the path is impassable, and even in good weather the path is dangerous. In fact, one villager was badly injured during the earlier project when he fell off the path.

The 13-day trip to the village is by Jeep followed by dugout canoe. A man from the village will be your guide. Your plans must be completed and approved within two weeks so you can begin your journey before the start of the rainy season.

A small library of books and facilities for any experimental work you may decide to do are available in the local university. In fact, during your stay here in Port City, you will be housed in a university dormitory. Although you will do all the field work for this project alone, the five workers who travelled to Port City with you will be available for two weeks to help you plan the project.

Please turn your completed plans in to me as soon as possible. If I can be of help, do not hesitate to call on me.

What you have just read is a short sample*, the start of a Guided-Design project written for use in a first-year engineering design course. The project continues instruction by instruction as students are involved in the development of decision-making skills and the learning of both technical and non-technical principles and concepts.

The vehicle for learning is the role of John Newton as he sets out to solve the problems of the natives in the primitive isolated village.

At its simplest, Guided-Design is solely an application of a powerful motivator-need. Or as McKeachie suggests,

The ideal class would begin with a problem which is so meaningful that the students are always just a step ahead of the teacher in approaching a solution.¹

But as we examine Guided-Design in detail we will find that it is an even more complex educational systems design which makes use of numerous educational principles and techniques in the satisfying of specific course goals. This article is concerned with such a detailed examination as we reconstruct the decisions which led to the development of the Guided-Design system. Although historically this systems design grew out of a need to develop a first-year course in engineering, experience has shown that Guided-Design has applications well beyond first-year courses and technical disciplines such as engineering. Consequently, the reconstruction which follows has been stripped of its original first-year engineering context and generalized.

*Reproduced from A PEACE CORPS ASSIGNMENT TO DEVELOP BETTER NATIVE HOUSING with permission of R.A. Stager and C.E. Wales, copyrighted 1972.

WHERE TO START

There are at least three ways of creating a course:

1. Choose a textbook and write a syllabus based on it. This is a common approach. No decision is needed in the method of instruction; lectures will most likely be used to explain and complement the text.
2. Choose the primary teaching technique and build the course around it.

This is the approach which has fostered the single-minded adoption of television or of computer assisted instruction. Conceivably a course might even be built around the overhead projector.

3. Specify the intellectual goals to be achieved and design the course accordingly.

This last approach is the only one that makes sense to one who believes in the logical application of the decision-making (design) process. The other two approaches represent short-cutting or even reversal of the process.

DECISION-MAKING

The design of an educational system or course is not unlike the design of any other complex operation; it requires a high level of professional ability, a background of appropriate educational and psychological principles and the ability to make decisions. The design process can be expected to follow an iterative pattern including steps such as the following:

- *Gather Information
1. Identify the Problem
 2. State the Basic Objective or Goal
 3. State the Constraints
 4. Generate Possible Solutions
 5. Analysis
 6. Synthesis
 7. Evaluate the Solution
 8. Report the Results and Make Recommendations
 9. Implement the Decision
 10. Check the Results

*Gather information is listed separately because it may occur with *each* of the other steps in the decision-making process.

These are the steps to apply to an educational systems design. In this manner the results of available research and thinking are translated into an improved educational process.

IDENTIFY THE PROBLEM

What more than anything else characterizes a university? The belief in reason — the belief that men and women, through fact and logic, can reach better understandings about the meaning of life and, by working together, can help create a better life for all mankind.

That's really what a university is all about. And I welcome you to another year in the pursuit of reason and the pursuit of rational responses to the problems that confront us all.²

This is commonly expressed view of the educational system. Whether it is a true picture is subject to much debate. On one hand we can point with pride to the high quality of the people who have graduated. Our leaders, our professionals, our philosophers can point almost universally to some institution of higher learning which started them on their way. But on the other hand we read and hear statements such as the following:

Because of the simplicity of teaching and evaluating knowledge, it is frequently emphasized as an educational objective out of all proportion to its usefulness or its relevance for the development of the individual.³

There is undoubtedly some gap between what is thought to occur and what in fact does occur in a university. The problem is to identify this gap more fully and to take steps to close it.

Nor do we lack suggestions on what education should provide. We hear from John Gardner that

Education at its best will develop the individual's inner resources to the point where he can learn (and will want to learn) on his own. It will equip him to cope with unforeseen challenges and to survive as a versatile individual in an unpredictable world. Individuals so educated will keep the society itself flexible, adaptive and innovative.⁴

IDENTIFY THE PROBLEM

What more than anything else characterizes a university? The belief in reason — the belief that men and women, through fact and logic, can reach better understandings about the meaning of life and, by working together, can help create a better life for all mankind.

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Because of the simplicity of teaching and evaluating knowledge, it is frequently emphasized as an educational objective out of all proportion to its usefulness or its relevance for the development of the individual.³

Referring to a similar "ideal" individual the psychologist Maslow finds only 5% of the population become "self-actualized" (ie. independent, adaptive, creative) in spite of the opportunities our educational system offers. Yet Maslow states that the potential for developing self-actualized people is 100%^{5,6}. The difference between the 5% and the 100% might represent the gap we must close.

If self-actualization is accepted as the direction to go then Maslow and the hierarchy of needs must be studied to gain more insight into the problem.

7. Self-actualization: The need to be an independent, adaptive, creative, decision-maker
6. Sensitivity-Sensibility: The need to respond to intellectual or emotional events, values, beauty, people, art
5. Knowledge: The need for facts, concepts, principles, methods
4. Respect: The need for esteem, approval, self-respect, dignity
3. Belonging: The need for a family or group, acceptance, love, friendship
2. Safety: The need for security, protection, freedom
1. Self preservation: The need for air, water, food, comfort

The significance of this hierarchy is that each need must be satisfied and continue to be satisfied before an individual can move upward to the next need. The most fundamental need "self-preservation" has been satisfied by nature and the new technology for those in large portions of the world. These people are capable of moving up to safety and if this next need is satisfied they can progress further up the ladder.

At various levels our formal education system comes into play in either a positive or negative manner. An earlier quote affirms that the need for "Knowledge" is provided for by the education system. But at a lower level the use of threats (and even physical punishment) in the educational process tends to keep people from satisfying the need for safety and thereby reaching the need for knowledge. Commonly used testing-grading policies also threaten both a student's safety and respect. Thus in many ways the educational system blocks the achieving of its own goals. If our concern is Self-actualization then we must set out to help the students satisfy all seven needs. Though our focus will be on satisfying the needs for Knowledge, Sensitivity-Sensibility and Self-Actualization by necessity we must also see to the satisfaction of the more basic needs.

STATE THE GOAL

The decision has been made to develop an educational system which will have as its focus the satisfaction of the needs for Knowledge, Sensitivity-Sensibility and Self-Actualization. In fact, let us adopt these three needs as our system goals and then attempt to express them in a manner such that they can be operationalized. To do this we must identify the specific skills and abilities to be developed in satisfying these needs, that is skills which can be taught and tested for. The following list of Intellectual Operations, developed from ideas presented in Bloom's Taxonomy of Educational Objectives,³ can form the basis for operationalizing the three goals.

INTELLECTUAL OPERATIONS

A. INTELLECTUAL SITUATIONS

1. Single-Answer Problem, Convergent Thinking
2. Open-Ended Problem, Divergent Thinking, Decision-Making

B. INTELLECTUAL MODES

1. Analyze
2. Synthesize
3. Evaluate

C. INTELLECTUAL ABILITIES

1. Recall
2. Manipulate
3. Translate
4. Interpret
5. Predict
6. Choose

The result is the goals listed below. As you might expect, goals 2 and 3 still involve subjective decisions. But these decisions constitute the missing elements in education, the elements which are not taught because they are hard to teach.

The educational system should provide experiences which make it possible for each student to learn and demonstrate that:

GOAL 1 — KNOWLEDGE

He can recall, manipulate, translate, interpret, predict and choose appropriate facts, concepts and principles as he solves single-answer problems.

GOALS 2 — SENSITIVITY-SENSIBILITY

He has the capacity to respond to intellectual or emotional events; he has developed and can make use of his own value system.

GOAL 3 — SELF-ACTUALIZATION

He can work both independently and as part of a team to solve open-ended problems creatively and humanely. In addition, he can learn by himself, think for himself, think logically, gather, organize and use the information he learned to make decisions, communicate ideas, and use decision-making process including analysis, synthesis and evaluation.

CONSTRAINTS

Our design is shaped by the following constraints.

1. STUDENT CONSTRAINTS

The mental, physical, and affective characteristics of the students who participate in the program.

2. ADMINISTRATIVE CONSTRAINTS

The time, money, and help available for design work and the attitude of both the administration and the faculty toward education efforts.

3. OPERATING CONSTRAINTS

The number of students who will take this program, the space and material available, and the time available for transmission, interaction, practice and testing.

4. THEORETICAL CONSTRAINTS

The research or theoretical principles that apply to the teaching-learning process.

These constraints will serve as references by which we can judge possible solutions and eventual success.

POSSIBLE SOLUTIONS

The teaching-learning activities from which to construct a system are limitless. Those to be considered include those listed below under three categories Transmission, Interaction and Practice Teaching.

TEACHING-LEARNING ACTIVITIES

Transmission	Interaction	Practice/Testing
Live lecture	Discussion	Homework
Recordings	Recitation	Experimenting
Slides	Case Studies	Reporting
TV, movies	Simulation	Solving problems
Demonstration	Internship	Independent study
Textbook	Tutoring	
Programmed Instruction		

In attempting to match these activities with the three goals certain general conclusions can be drawn. One conclusion is that Goal 1, Knowledge can be achieved in many ways: by class work, self-study, recitation, etc. However, goals 2 and 3, Sensitivity-Sensibility and Self-Actualization, will require teacher-student or student-student interaction in the solution of open-ended problems.

ANALYSIS

When we consider one of the operating constraints, the time available, we have no choice but to achieve Goal 1 outside of class. Only then can most of the class time be made available for interaction, i.e. discussion. This discussion with or under the supervision of a teacher, will be a pre-requisite to the achievement of Goals 2 and 3. However, the availability of good self-study materials for Goal 1 will be an operating constraint on the design.

The theoretical constraint is also important in developing the system. The list of Psychological Principles below, drawn from psychological research on education allows the selection of appropriate Teaching-Learning Activities.

PSYCHOLOGICAL PRINCIPLES

1. *Guide* the student as he learns to perform a given task: Model, supervise, prompt, provide objectives and organizers, relate to real work, help him evaluate his own performance.
2. Provide for *Practice*: Keep him active, pace his work, vary the context.
3. *Evaluate, Give Feedback and Reinforce* the correct action.
4. *Motivate*: Encourage, show the value of the desired performance.
5. *Individualize* so each student can learn at his own pace, in his own way.

This list leads to the decision to use programmed instruction as a self-study aid. Normal textbooks, unless supplemented by study guides and in-class help just will not do at this point. There will come a time in later courses, after the student has developed his own learning system that textbooks, handbooks and the professional literature can become the major aids to learning.

But programmed-instruction by itself does not constitute a self-study system. Consequently, such a technique is embedded within a personalized system of instruction including mastery testing. The mastery concept is a moral necessity since the intent of the total system is to satisfy specific student needs and goals,

not just to judge the degree of success or failure of each student. As well, the multiple testing involved in the mastery concept will do much to lessen the tension which can threaten students at the safety level.

As decided earlier, discussion will be the major classroom technique to be used in achieving goals 2 and 3. That this choice is appropriate is reinforced by examination of this technique in light of the Psychological Principles. All the principles can be adhered to in teacher-student and student-student discussion of open-ended problems.

For example, discussion can be used to demonstrate, model and provide for practice with the decision-making process. Within a discussion both the teacher and the students can provide evaluation and feedback to each other. If proper interaction and reinforcement techniques are used, discussion can also provide a great deal of motivation. In addition, discussion provides a setting in which an individual student's questions can be answered.

The choice of discussion to achieve goals 2 and 3 is further reinforced by McKeachie who summarizes pertinent research in the following manner:

But the research indicates the superiority of discussion over lecture in developing problem-solving skills and probably in affecting motivation and attitudes...the teacher makes the most difference in the most fundamental objectives of higher education — the higher level cognitive and affective goals...the more highly one values outcomes going beyond knowledge acquisition, the more likely that methods involving a considerable amount of student group participation and responsibility will be preferred.¹

However, a traditional teacher-led discussion still has limitations. The problem is not the teacher's failure to model the decision-making process, but rather that he does it with too much sophistication. Because of his previous experience and familiarity with the process he solves problems by combining steps, skipping steps, rearranging steps, integrating steps and automatically recycling through steps. He might fail to verbalize some of the steps he takes, such as identifying the real problem, and fail to state key constraints. The student who is trying to learn by this process then has two problems — the design problem given him and the problem of figuring out what the teacher is doing. At best he can learn only part of the model being demonstrated. In

addition, this form of discussion has a significant weakness. Once the words have been said and the action has been completed, it is gone, and the student only has his memory to reconstruct what has occurred.

Another factor that affects the use of discussion is class size. What does one do when the class has five, fifteen or even fifty-students — when the teacher cannot talk to each student and provide the individualized help required. How can you help each student learn the steps in decision-making when you cannot interact with each of them? Perhaps the answer lies in another teaching-learning aid, the written word.

Now written materials often lack the flexibility needed to coach individual students who have individual problems. It takes a human being to do that. However, printed material does provide a way to communicate "slow-motion" reasoning to the student so he can study, think about and learn each step in the decision-making process. But what form should this written material take? Should it be a chronological narrative of the teacher's solution to a problem? This would be equivalent to the lecture-modelling process and though it has some good points, in particular, the fact that the student can study and restudy at his convenience, it has many drawbacks. One major drawback is the lack of student participation. In a story or the equivalent lecture, the student is not required to do the thinking, he simply has a vicarious experience. And such an experience will not satisfy many of the psychological principles. But a programmed form of decision-making which makes a Socratic tutor out of both printed matter and the students themselves may provide the answer. Students can work in small discussion groups to solve meaningful open-ended problems which require them to think logically, gather information, communicate ideas and use each of the decision-making steps. A series of printed "Instruction and Feedback" pages will guide them through the solution of each problem. Discussion will take place between members of the group and when necessary with the instructor. The printed matter frees the instructor so he can individualize his interaction with each student, guide him, evaluate his efforts, provide reinforcement, feedback and encouragement. The instructor is now perceived as a consultant standing beside the student as he attacks a problem rather than as an intermediary through which all knowledge must flow.

The pattern of decision-making steps is the same as used here starting with Recognizing the Problem and ending with the Reporting and Implementation steps. The students will try to agree on a group answer before they compare their decision with that in the printed

model. This discussion provides the setting for a consideration of both the cognitive and affective factors which influence each step in the decision-making process.

To this programmed form of decision-making we give the name "Guided-Design"^{7,8}.

SYNTHESIS

At this point considerable iteration is necessary before a completed system can be detailed. For instance the question of out-of-class help to students arises, a learning centre is proposed and built into the system. The components of the final design are presented in the figure below.

THE OPERATING COMPONENTS OF THE SYSTEM

PLACE	GOAL 1	GOALS 2 and 3
Class	Limited discussion of the subject matter, as required. Student led checking of homework. Discovery experiments or laboratory work.	Usually small group discussion of open-ended, Guided Design problems. The instructor circulates through the class from group to group and is available on demand
	Primary testing for this goal may be done in class	Class discussion and oral presentations by groups Primary testing for these goals may be done in class using individual design tests
Learning Centre	Basic instruction via audio-tutorial materials. Experiments or laboratory work. Self-instruction plus individualized assistance on subject matter problems.	Study and discussion of pertinent reference material Primary testing or re-testing could take place here too.
	Primary testing or re-testing may be done in the centre.	
Home-work	Basic instruction via programmed instruction and other aids such as a text, and reference books. Problem solving techniques taught through branched programmed instruction. Solution of single-answer problems and self-instruction quizzes.	Review of project materials, study of references, preparation of reports

But there is considerable interaction between the three goals not evident in the above figure. A further description of the system is necessary to spell out this relationship and is given below.

GOAL 1 - KNOWLEDGE

Each open-ended problem establishes a need for a unit of subject matter, which each student is expected to master outside of class. As a result, the facts, concepts and principles the student is expected to learn are treated as information required for the decision-making process. This organization should establish a pattern which will serve the student after he leaves school — where continued independent learning is a prerequisite to success. The student is expected to gather this information from self-study materials, from the library, or through experimental work. While the student is learning to be independent, some class time may be required to check on his progress, examine his homework for errors, provide help, and give examinations. However, even during this period, most of the class time can be free for decision-making activities.

GOALS 2 AND 3 - SENSITIVITY-SENSIBILITY AND SELF-ACTUALIZATION

To provide the interaction practice required to develop value judgments and decision-making skills, particularly for the beginning student, the discussion of open-ended problems takes place in small groups of 4 to 7 people. The problems chosen for this work are relevant and interdisciplinary so they require the students to make decisions in a realistic setting. An understanding of the subject matter learned by self-study is necessary to make these decisions. Led by the Guided Design instructions the students do the thinking, they make the value judgments, they play the role of the self-actualized decision-maker. In the process, the students learn to work as part of a team and develop skills in communicating, presenting, defending and criticizing ideas.

EVALUATION

Evaluation occurs in two ways for Guided Design, as for any system. One mode is internal, that is the students attempt to satisfy the goals of a course through assignments, reports, and tests and thereby provide the critical feedback by which the instructors can make corrections in the course. Since the Guided Design system makes extensive use of

written materials the reasons for student failure to perform a particular task can be traced to a weakness or ambiguity in a specific Guided Design instruction or programmed instruction frame. The weakness, thus identified, can be corrected until success is achieved. Future students using the properly corrected material will not fail.

The second mode of evaluation is external. Guided Design was first developed in 1969 and implemented on a large scale in 1970 in a first year engineering course. Two other systems began operating in 1971; thus there has been insufficient time for external, objective evaluations. However, one experiment performed on a one-semester Guided-Design course did show increased Locus of Control and decreased Manifest Anxiety? An evaluation of the operating system performed by an educational psychologist from Purdue University was also reported in the literature.¹⁰ Further studies are in progress in order to determine the long term effect of this system on student behaviour.

CONCLUSION

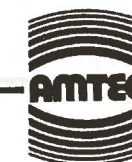
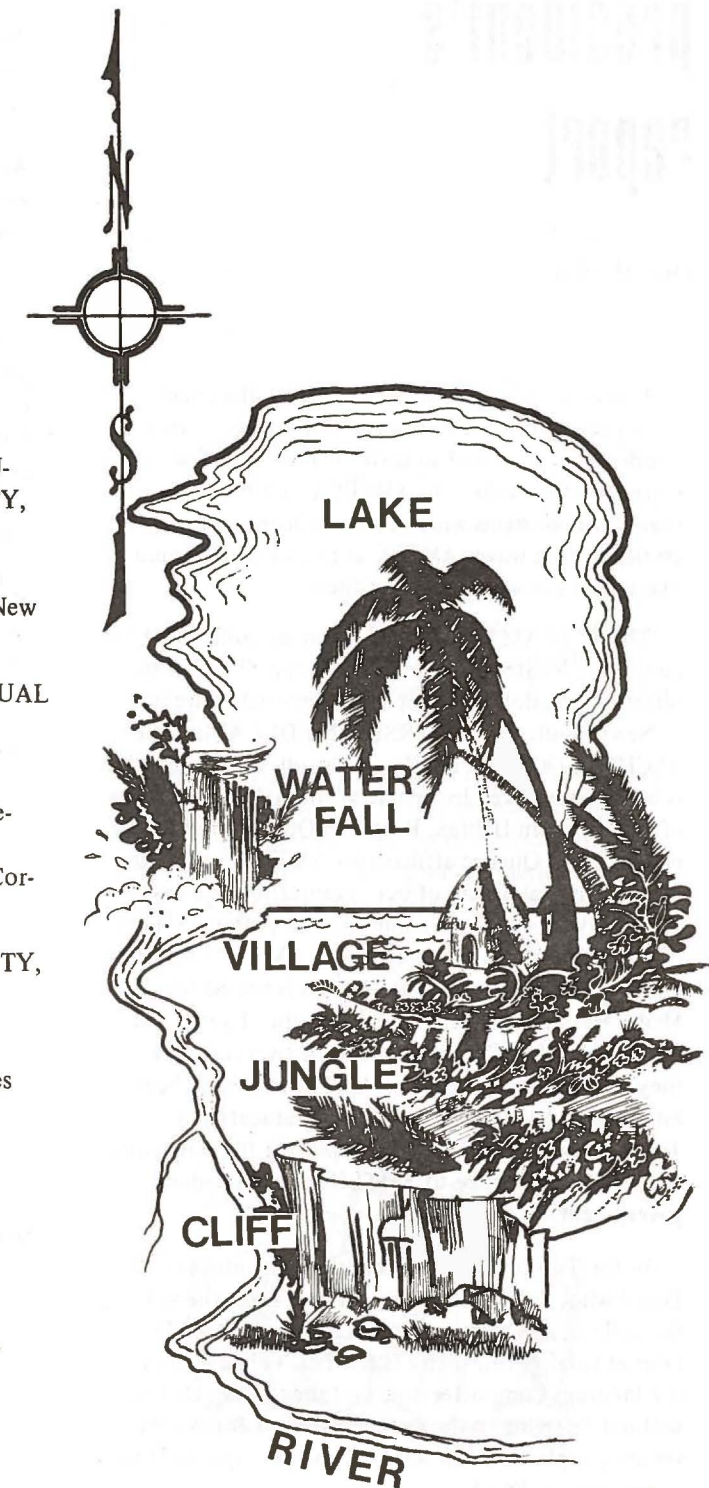
In this article we have spent considerably more time presenting the development of Guided-Design than to describing the operation of a Guided Design system. Why? For two reasons.

First the final design described here should be thought of as only one variation of many which will satisfy the stated goals of the system. Programmed instruction may be replaced by video or computer instruction as the vehicle for self-study. The design groups may take other forms, smaller, larger, permanent, transient. And numerous changes are inevitable if the system is to keep up with the student as he progresses. The programmed Guided Design problems must give way to simulating Case-Studies and eventually real world apprenticeships. The self-study materials cannot be pre-packaged, pre-digested and pre-programmed forever. The library, experts in the field and clients have the knowledge for the taking once the student has reached this plateau of self-study. However, the goals Knowledge, Sensitivity-Sensibility and Self-Actualization will still be operational whatever the level and context.

The second reason is that the application of the decision-making process to an educational systems design has value in itself. This application is something anyone can and should consider when presented with the task of designing a new course or curriculum. This is not to say that the decision-making process and educational systems design are easy; they are not. But the hard work and numerous trials and errors necessary cannot but provide a better design in the long term.

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president's report

Dick Morton

It involves a lot of words on paper — the constitution and bylaws, the minutes of meetings, correspondence, reports and so forth. It involves a few material possessions — in AMTEC's case there are practically no items which could be listed as capital assets. So that leaves AMTEC as people and I would like to tell you about some of these.

The 'C' in AMTEC stands for Canada and AMTEC people are located all over this country. Our first publication was done by people at Memorial University in Newfoundland — COURSES IN EDUCATIONAL TECHNOLOGY and a follow-up study and publication is being undertaken by people at the Atlantic Institute of Education in Halifax. People in Quebec are looking not only at a Quebec affiliate for AMTEC but at the whole bilingual nature of our organization. At Queen's University, Lorra Hines maintains our present AMTEC office and as executive secretary IS AMTEC to many hundreds of people. Also at Queen's is the editor of Media Message and also in Kingston the chairman of our Membership Committee. Up the river in Ottawa they are very much aware of AMTEC. We have been establishing liaison with the federal Educational Technology Program and also exploring the possibility of financial assistance to AMTEC from the federal government.

In the Toronto area we have three members of our Board who, interestingly enough, represent the school, the college, and the commercial aspects of AMTEC. Over at Guelph University is AMTEC's chairman of the Program Committee and we cannot leave Ontario without referring to the deep impression Brock University people made on AMTEC and perhaps, AMTEC's impression on Brock.

Out west there is a lot of AMTEC activity particularly in Alberta. Twenty or thirty people in Calgary are already hard at work at next June's conference. In Edmonton there are two members of the AMTEC Board, including the President.

Of course, this accounts for only a fraction of those of you who carry a card saying that you are a member. An organization cannot do without its dedicated staff — our "half-time" executive secretary works way beyond what we have any right to expect. An organization needs executive people and we have very good ones — voluntary, dedicated, hard-working — and without them of course there would be no AMTEC.

But if AMTEC is to be an organization with potential, prestige and power to make a difference when it comes to the role of media and technology in education in Canada it must have among its members those who can develop new ideas in the field, those who do research, those who are academics and those who are the practioners in every aspect of education. We need to have members from industry and every level of government. We must also attract members from those professions — principally teaching — who have a special interest in the application of technology.

AMTEC has the potential to perform at least three basic functions in Canada:

1. to bring together into a single national organization those who professionally have a direct interest in media and technology in education,
2. to provide an umbrella for groups of professionals with special interests within the field, and
3. to provide a means of relating provincial and regional organizations to one another so that they may be mutually helpful.

So while there are many AMTEC people already working all across Canada there is room for more.



book review

EDUCATIONAL TECHNOLOGY, TOWARD DEMYSTIFICATION, by Margaret Gillett. Scarborough, Ontario: Prentice-Hall, 1973.

Reviewed by Richard Lewis, Ph.D.
Research Associate,
Atlantic Institute of Education.

This Canadian referenced text provides a look at media in the current educational environment. Although it is extremely interesting reading, the book fails in its announced objective, "to demystify technology". Despite the attempts to define educational technology jargon, Margaret Gillett's book never comes to grips with the technical pros and cons of instructional machines. This is a serious fault for a text geared to the teacher or future teacher. The chapter "Modern Media", should be a keystone in the author's evaluation of modern media. Instead it provides only a surface glance and a historical view of educational machines.

The text does, however, give the reader an excellent introduction to the meaning of the term educational technology. It extends educational technology beyond the rigid bounds of machinery into the areas of learning theory, educational psychology, history and even architecture. It relates media to different theories including behaviorism, the Montessori method and the Gestalt school of psychology. In the architecture section Gillett explains that the school itself is "the biggest medium" of all. Desks, lighting, spatial relationships and even color are discussed as instrumental in forming the learning medium.

Margaret Gillett's humanistic background is most evident in the preliminary investigation of media usage. She traces the development of education through its oral-ancient stage into the book and electronic era. This chapter continually emphasizes the importance of educational environment on the student with its references

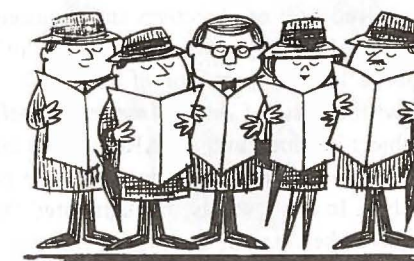
to past and current teaching practices. It should, however be more sharply focused so that readers can more easily relate the ancient tablets of Sumer to current concerns.

In discussing the learner, EDUCATIONAL TECHNOLOGY, TOWARD DEMYSTIFICATION deals with the central issue that children must be involved with media and that their teachers may have to change their attitudes to suit the children's involvement. The author emphasizes that perhaps children should be able to use books and printed materials.

The teacher's role is considered integral in determining the use or misuse of educational technology. Gillett criticizes media education in teacher training but fails to suggest programs for improvement.

The final chapter provides an excellent review of some of the educational technology activities in Canada. It also deals with innovations such as computer assisted instruction, and a variable speech control mechanism. The chapter also sounds a warning that the effects of technology should be assessed before the consequences occur.

Most of this text provides an excellent reference to educational technology. In this reviewer's opinion, the book is too philosophical for an introductory text unless it is complemented by a more practical work containing suggestions on integrating media into the teaching process.



news clips

EDUCATIONAL MEDIA PERSONNEL CLASSIFICATION SERIES FOR ONTARIO

A recent project of the Ontario Universities Media Directors should be found useful to administrators of Media Services operations across Canada. The above publication contains a personnel classification series of media staff in educational institutions. Originally prepared as a comparative salary project, the intent in publishing these series is to provide a guideline for administrators involved with wage and salary decisions. Copies are available as long as they last by writing to either: Mr. David Bennett, Director, Instructional Media Centre, Brock University, St. Catharines, Ontario, L2S 3A1 or Mr. L. Douglas Todgham, Director, Media Centre, University of Toronto, 121 St. George Street, Toronto, Ontario, M5S 1A1.

ONTARIO UNIVERSITY MEDIA – LIBRARIAN ADMINISTRATORS GATHER TO DISCUSS U OF T REPORT

In early October media and library representatives from Ontario Universities gathered in Toronto to discuss a report prepared by Ann Woodsworth for University of Toronto's library. In their search for a viable information retrieval system for media software at the University of Toronto, a consultant and a committee evolved a set of objectives and requirements which, due to network complaints, developed a fairly traditional approach to the provision of bibliographical access. Along with the use of *Anglo-American Cataloguing Rules*, L.C. subject headings and a MARC compatible format, it was recommended that an intermediate synonym file be established. In other words, an augmented "C reference" file was to be created, that would translate an on-line query to a proper L.C. heading in the file. By using universally accepted cataloguing rules and machine readable format, the University of Toronto hopes to encourage development of a provincial, and perhaps a national, network for media and resources. The meeting served to open the lines of communication between the university, community college and O.E.C.A. people involved with designing systems for media access.

CANADIAN INFORMATION PROCESSING SOCIETY/L'ASSOCIATION CANADIENNE DE L'INFORMATIQUE

In our ever widening quest to become familiar with media/technology organizations in Canada I wish to introduce you to another association. This national association is broken down into regional sub-organizations, some of which are very active. Additional information on this organization will be passed on to you when it is received.

DATUM-ET HANDBOOK GOES OUT FOR REVIEW

The national centre for educational statistics in United States has contracted out to the Association for Educational Communications and Technology the preparation of an educational technology handbook. When completed the handbook will be used to facilitate data collection. "It will offer a definition of educational technology; a model of the field; corresponding classification scheme that lists major areas of the field and selected related terms; and definitions for the term in a classification scheme and for other selected terms." The first draft of the handbook is prepared and is being made available to the educational technology community for review at a number of meetings throughout the United States during October and November. The critiques will be the basis for final revisions of the handbook. Anyone who wishes to attend these meetings should contact Datum-Et, AECT, 1201 16th Street North West, Washington, D.C. 20036.

FEDERAL WORKING COMMITTEE ON AUDIOVISUAL SYSTEMS IN EDUCATION HOLDS "A.V. STATISTICS" MEETING

On October 25th a meeting was held in Toronto to discuss established methods and resources required to formulate an effective statistical data base for audio visual equipment and systems in Canada. The one-day meeting was sponsored by the Federal Working Committee on Audio Visual Systems in Education set up by the Educational Technology Branch of the Department of Communications.

The committee at this stage is made up exclusively of representatives from various federal government departments. A number of people were invited to attend the session. Mr. Tom Hope, publisher of *The Hope Reports* gave a brief report on how his Rochester

based company gathers data for his quarterly and annual reports on aspects of the A.V. Media industry in the U.S. Ms. Margaret Gayfer, formerly with McLean-Hunter Publications, described the problems she encountered in collecting and reporting on the A.V. field in Canada for the now defunct *School Progress* magazine. Representatives from Statistics Canada commented on their previous data-collecting exercises: *INSTRUCTIONAL MEDIA IN UNIVERSITIES IN ONTARIO, 1972: INSTRUCTIONAL MEDIA IN UNIVERSITIES OF THE ATLANTIC PROVINCES, 1972: MOTION PICTURE PRODUCTION 1972.*

Representatives of the National AudioVisual Association, Mr. Jack Rutherford and Mr. Tony Cook, provided a business input while A.M.T.E.C. was represented by President Richard Morton, Mr. Gord Jarrel and Mr. Fred Johnston. There seemed to be some consensus at the conclusion of the meeting that the committee would have to determine who needed the data and for what purpose. This would determine the nature of the data to be collected. The needs of the commercial field seemed obvious, the interests of other fields, such as education were not so apparent.

The British Open University has been receiving so many requests for information and assistance from Universities and governments interested in establishing open learning systems, that they have set up a consulting service to these governments and agencies. A booklet about the services is now available and can be obtained from the Director, Open University Consultancy Service, The Open University, Walton Hall, Milton, Keynes, MK7 6AA, England.

A NEW ASSOCIATION: ASSOCIATION FOR MULTI-IMAGES

This new association has just been formed and now is affiliated with the Association for Educational Communications and Technology. AMI is currently negotiating for affiliation with the National Audio Visual Association.

The officers of AMI are: Carl Beckman, President, University of Maryland; Robert Wiseman, Vice President, Eastern Illinois University and Roger Gorden, Secretary-Treasurer, Temple University.

Membership in AMI is comprised of producers and teachers of multi-image in both education and industry, students and other persons interested in multi-image. Interested persons may join for \$10.00 per year, students for \$5.00 and businesses for \$25.00. Persons holding

membership in AECT are given the opportunity to join AMI for \$8.50 and students for \$3.50.

AMI hopes to foster the growth of multi-images production throughout education and industry. The association will publish several newsletters per year for its members reporting on new productions, research, workshops, meetings, application of multi-image, production of equipment by various multi-image companies and new developments in the field of multi-image.

Persons interested in membership may send their dues to:

AECT-1201 Sixteenth Street, N.W.
Washington, D.C. 20036
(Make checks payable to AECT/AMI)

For further information contact Carl Beckman, College of Library and Information Services, University of Maryland, College Park, Maryland 20742.



new resources

IFTC NEWSLETTER

The IFTC Newsletter published by the International Film and Television Council (International Council for Film and Television and All Other Audio Visual Media of Communications (IFTC)) in collaboration with UNESCO. It is designed to provide concise information of international interests on activity concerned with the audio visual media and communications. The correspondence should be addressed to the Editor, IFTC Newsletter, IFTC, UNESCO, 1 rue Miollis - 75732 Paris Cedex 15.

This is the first issue of this newsletter.

FILM CANADIANA PART I

The Canadian Film Institute yearbook of Canadian Cinema of 1973-74.

and

FILM CANADIANA PART II

Television supplement - The Canadian Film Institute yearbook of Canadian Cinema of 1973-74. Both of these publications are bilingual and available from the Canadian Film Institute in Ottawa.

ONTARIO UNIVERSITIES PROGRAM FOR INSTRUCTIONAL DEVELOPMENT NEWSLETTER

Last year the Joint Committee on Instructional Development of the committee on University Affairs and the Council of Ontario Universities jointly approved and set up an Ontario University program for instructional development with Harold M. Good from Queen's University as the first Director. The second issue of the newsletter provides interesting information on guidelines for evaluating instructional development proposals as well as the conditions under which awards are made. Of interest also is a list of instructional development projects presently in operation in Ontario Universities.

THE MEDIA CENTRE IN THE SECONDARY SCHOOLS

Kathleen M. Snow & Philomena Hauck,
McLellan Stewart Ltd., Toronto, 1973.

INSTRUCTIONAL TECHNOLOGY: BASIC SKILLS

Donald L. Nicholas & Joe N. Crow, University Stores Inc., P.O. Box 7756, Austin, Texas 78712.

This paper-cover manual is divided into two sections, one dealing with the operations of basic instructional machines and a second involved with production processes: lettering, dry mounting, laminations, colour lift, thermal transparency and diazo transparency production, spirit masters, thermal spirit masters.

ANOTHER PERIODICAL: FILM MAKERS NEWSLETTER

This periodical contains articles having to do with commercial film production. It is a monthly publication by Suncraft International Inc., 41 Union Square West, New York, N.Y. 10003. Subscription rate in Canada is \$10.00 per year.

CINEMEDIA is a Toronto Company which has recently produced an information folio on a number of new sound filmstrips and filmloops especially produced for Canadian schools. For information write Cinemedia Ltd., P.O. Box 332, Agincourt, Ontario.

A RESOURCE FOR THE ACTIVE COMMUNITY, CANADIAN RADIO TELEVISION COMMISSION

In the forward by Pierre Juneau, Chairman, Canadian Radio-Television Commission, the purpose of this publication is stated, "the CRTC distributes this publication as a step toward allowing all such groups to share the thought, awareness, and experiences of others. It is hoped that the articles will increase understanding in ways which broadcasting can be used as a resource for the community." The publication contains 16 articles covering a wide range of experiences and ideas relating to public broadcasting. The publication was developed by the Broadcast Programs and Research Branches of the Canadian Radio Television Commission and is distributed through Information Canada.

A QUARTERLY NEWSLETTER OPENLINE

This quarterly is published cooperatively by the Open University and the British Broadcasting Corporation largely for its overseas followers. As no price appears on the newsletter, it is to be assumed that it is free. For information contact Information Services, The Open University, Walton Hall, Milton Keynes MK7 6AA.



coming events

October 18 - 19

Annual conference of the Audio Visual Council of Alberta, New Education Complex, University of Alberta, Edmonton, Alberta.

October 20 - 22

New Developments In Audio Visual Systems, IGC Conference Centre, Castle Hill, Ipswich, Mass. This conference is presented by the Institute for Graphic Communication and for information contact Richard D. Murray, Conference Director, Institute for Graphic Communication, 375 Commonwealth Avenue, Boston, Mass. 02115.

November 6 - 8

6th Annual Audio Tutorial Congress Conference, Holiday Inn - Golden Gateway, San Francisco, California. The theme for this conference is Individualized Instruction and queries can be directed to Dr. John R. Hinton, Cabrillo College, 6500 Soquel Drive, Aptos, California 95003.

November 9

Association of Cinema Laboratories Conference, Four Seasons Sheraton Hotel, Toronto, Canada.

November 10 - 15

Society of Motion Picture and Television Engineers Conference, Four Seasons Sheraton Hotel, Toronto, Canada.

November 17 - 20

National Association of Educational Broadcasters 50th Annual Convention, Las Vegas Hilton Convention Centre, Las Vegas, Nevada.

April 3 - 17, 1975

AECT National Convention, Dallas, Texas

June 15 - 18, 1975

AMTEC '75 5th Canadian Educational Communications Conference, Calgary, Alberta.

from the secretary

Hi! Hello!

This will be a short, but very important note about your membership dues - don't panic, they are not going up!

The AMTEC Board met on Oct. 25 and 26 and decided that the major problem facing the Association at the present is our membership - i.e., the lack of membership. So the Board eliminated the policy of asking members to pay for the fiscal year, April to March, and substituted an "evergreen" membership year in hopes that people waiting to join AMTEC in the spring of 1975 would just go ahead and join now. Because the budget of the Association depends heavily on membership - and believe me (the one who keeps the books), our budget is very tight.

The "evergreen" policy which is retroactive to April 1974, works like any other subscription - your membership will expire a year from when your dues are paid. So those of you who paid in April will be invoiced for renewal on April 1, 1975. Those of you who paid in October will be invoiced for renewal on October 1, 1975. I will *not* send out new membership cards, but those of you who paid in September or October of this year will be invoiced in September of October 1975 - don't worry about your card having the April/March year on it. I'll be setting up a rotating file and you won't be invoiced too early. If you have any question, please don't hesitate to write me.

The Board voted in another policy relating to membership fees and the MEDIA MESSAGE. Retroactive to April, 25% of your membership fee is to be a subscription fee to the MEDIA MESSAGE. The other 75% pays my salary (a most worthy cause!), the telephone bills, typewriter rental, office postage, an advance to the annual conference, etc.

I think that's all at the moment - and since most of you won't be hearing from me until January, I wish you all a Happy Winter and I hope you are looking forward to it with greater anticipation than my southern bones and thin blood are!

THIS SPACE IS RESERVED
FOR
ADVERTISEMENTS

Why not write to
The Editor and inquire
about our rates.

AMTEC '75

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

Partnerships in Learning

5th CANADIAN EDUCATIONAL
COMMUNICATIONS CONFERENCE

JUNE 15th to 18th 1975
calgary alberta

PAPERS AND PRESENTATIONS

Is there a paper or presentation on a particular topic that you would like to see included in AMTEC '75 . . . better still, that you would like to submit? Contact: Mrs. S.N. Lawrence/Mr. L.A. Robertson, Conference Coordinators, Department of Communications Media, The University of Calgary, Calgary, Alberta. T2N 1N4.

5th CANADIAN EDUCATIONAL COMMUNICATIONS CONFERENCE AMTEC '75
JUNE 15th to 18th!

AWARDS

External publicity for internal productions . . . recognition for original Canadian, educational media presentations. Categories and entrance requirements will be published in the January/February newsletter. For further information, contact the Awards Chairman: Mr. David Cormack, ACCESS Television South, Calgary Health Sciences Centre, 1611 - 29th Street, N.W., Calgary, Alberta. T2N 4J8.

MONDAY JUNE 16

"MAN AND METHODS" - a look at some alternate methods available, and how to make them effective. Guest Luncheon speaker is Christopher Sarson, former Television Producer of ZOOM, now Executive Producer (Television) with the Educational Development Center in Massachusetts, working on a new educational series entitled "MATHOPHOBIA".

TUESDAY JUNE 17

"MAN AND MACHINES" - a wide range of exhibits, technical papers and 'hands on' workshops to explore the latest advances in technology, and their applications. Guest Luncheon speaker is P. Kenneth Komoski, Executive Director of EPIE (Educational Products Information Exchange Institute), particularly concerned with learner verification of mediated instruction.

WEDNESDAY JUNE 18

"PEOPLE AND PERSPECTIVES" - a reminder . . . our prime responsibility is to the learner. Discussions and seminars on the reasons for, and results of media technology in education.

REGISTRATION

Full details of Registration costs and the Registration Form will be mailed to you in the January/February newsletter. For further information, contact the Registration Chairman: Mr. Garry Smith, ACCESS Television South, Calgary Health Sciences Centre, 1611 - 29th Street, N.W., Calgary, Alberta. T2N 4J8.

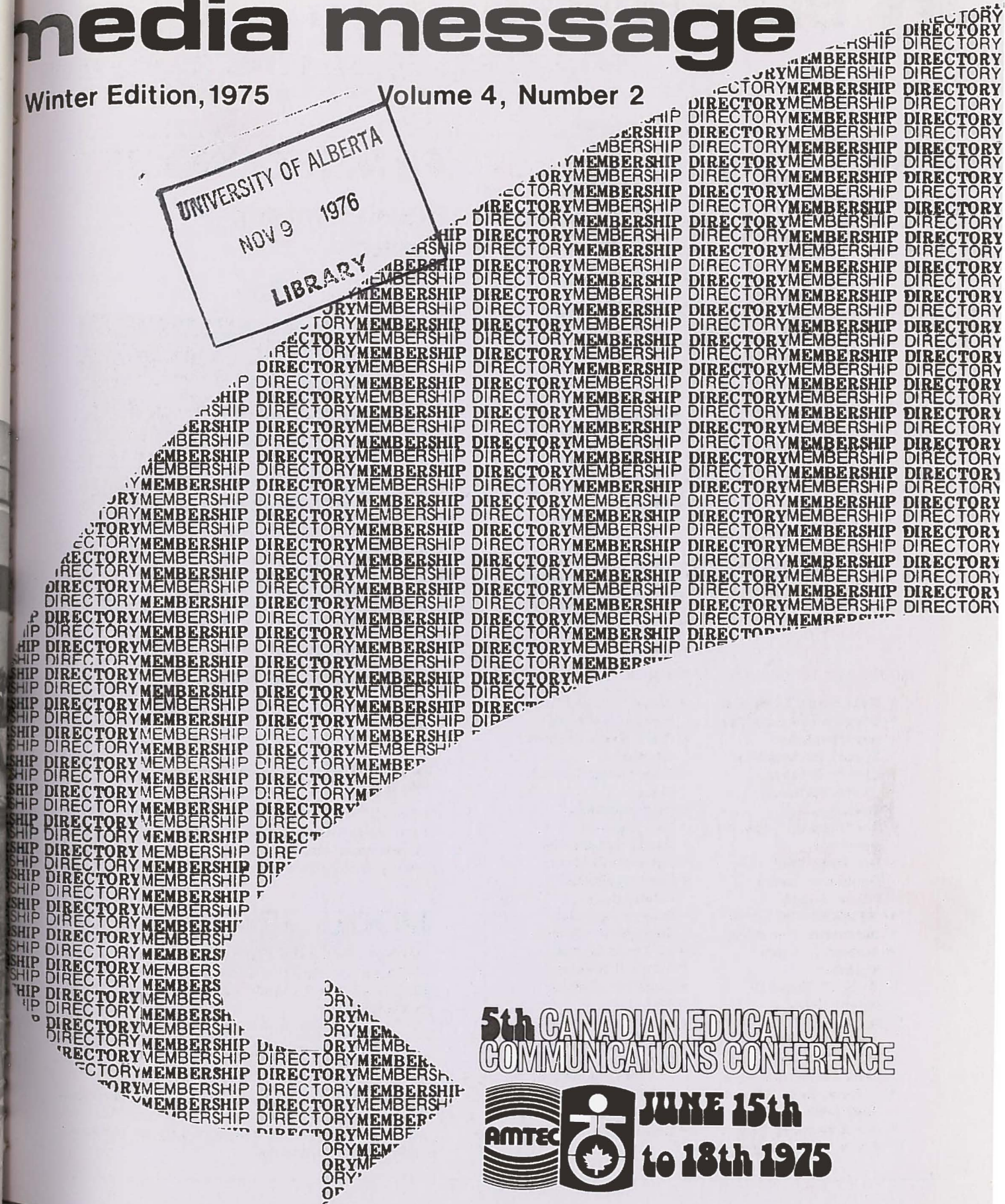


media message

Winter Edition, 1975

Volume 4, Number 2

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FOURTH ANNUAL CANADIAN
EDUCATIONAL COMMUNICATIONS CONFERENCE
BROCK UNIVERSITY, ST. CATHARINES, ONTARIO

5th CANADIAN EDUCATIONAL
COMMUNICATIONS CONFERENCE



JUNE 15th
to 18th 1975

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