Media Message

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Association for Media and Technology in Education in Canada
L'association des media et de la technologie en education au Canada

PRESIDENT'S MESSAGE • STARLOST • MICROCOMPUTERS AND SHERIDAN COLLEGE • SPECIAL INTEREST GROUPS • TODAY: PHOTOGRAPHY FROM A SMALL PLANE, TOMORROW: THE WORLD (OF MAPS) • HAVE TAPE, NEEDN'T TRAVEL • FURTHER REFLECTIONS • A.V. SOUNDSCAPES

AMTEC

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

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President's Message

by Larry Burt

The time has come for the final president's message of my term in office. It is interesting to look back over this year and see the goals we set for ourselves, and where we stand today. I had hoped to encourage communication between the Executive and the Members. My writing has been an attempt to make the workings of our Association known to each of you. I hope that you are aware of the kinds of tasks that we undertook on our own, and also asked others to undertake for us.

I do not feel that this executive accomplished everything we set out to do, but we did do something. In a sense this has been a year of "tightening up" the operation of AMTEC. What we have done is to formalize and regularize several of the operations. We have established an Editorial Board which will help the editor of Media Message with some "difficult" publishing decisions. We have established a routine and form for funding individual projects that could be of interest to AMTEC Members. We have formalized special interest groups and made a commitment to help each one financially.

We have sent a questionnaire to every member asking for information regarding our conference and project activities. We have instituted an "awards" system which we hope will be used throughout our Association. We have maintained and, I hope, improved our links with the CSLA (Canadian School Library Association). We have mutually agreed on a promotional kit for the joint CSLA/AMTEC publication, *Resource Services for Canadian Schools.* I am sure that there were other problems that we tackled and wrestled into at least temporary submission.

At the time of this writing we still have three large projects unfinished: (a) our history, (b) the conference/festival planning manual, (c) the constitutional revision. There is still some hope that these will be done by conference time. They are major undertakings. If they are not completed this year, the new executive will have to decide whether to finish them or drop them.

There is one more project that is presently underway. We hope to put together an application form for groups who want to sponsor the AMTEC Annual Conference. In doing so we hope to formalize the undertaking and indicate guidelines and AMTEC concerns. I guess this is one more example of the "tightening up" approach of this executive.

One area of concern that has not been handled in a constructive way is the attraction of a large number of Quebec members to AMTEC. As I mentioned previously there is something we can learn from each other. That we have lost some Quebec members and have not attracted others is, to me, a serious mutual loss. Each of us is diminished by the lack of association with the other. I hope that future progress can be made towards encouraging more communication between us and our professional brothers in Quebec.

Before I finish writing I would like to thank you for the opportunity to have been the President of AMTEC. I certainly learned quite a bit about the organization and the people in it. I must say that I have enjoyed the year, and look forward to next year with less formal responsibilities. I would like to take this opportunity to wish Dr. Ken Bowers "good fortune", and pledge my support to him this coming year. I would also like to thank each of the other members of the executive and Board of Directors for their contributions to the operation of AMTEC this year.

See you in Ottawa — in June. ■

Starlost
or
Journey to a Forgotten Paradigm

by Thomas L. Bennett
Resource Teacher, West Parry Sound Board of Education
Parry Sound, Ontario

A long time ago, or so it seems, there lived the practitioners of a dark art form known as Audiovisual Education. This was a world of flashing images and wonderous sounds. It was a time of newness and discovery, of excitement and awe, of trial and error, and the self-assured confidence that the shining discoveries of Man's inventiveness would solve almost all of the problems that faced the bedraggled, chalk-encrusted pedagogues who stood before an unstimulated class of learners. For those pedagogues of the past, the Machine was THE answer. Was it not true that, "In the beginning there was the STIMULUS"? And those lovely machines would provide just that, for no more would students sit enrapted in a boundless gauze of boredom; they would be stimulated. They would be stimulated by the joyous genius of the machine, and learning would come to pass.

However, as we all know, it didn't happen that way and the hopeful pedagogues didn't live happily ever after. For a time, the machines dazzled the learner with their dancing lights and sound, but gradually the romance faded. Educators began to question the effectiveness of the stimulus-oriented learning paradigm. Many felt uncomfortable with machines; they found it difficult to compensate the effort of learning the new procedures of operation with

the difficulty of assessing the attainment of learner objectives. Many simply rebelled against the *concept* of using machines, many were concerned with the soaring costs of such indulgences, and still others rationalized that audiovisuals were merely fun-and-games, and did not significantly contribute to the actual learning experiences of the students.

Hence, a new breed of practitioner appeared in the land, one who professed to take an objective stand in the Educational Media arena. This was the child of Behavioral Psychology, and Skinnerian Theory, and with his coming the concerns of accountability and cost effectiveness found a new champion. He was armed with a battery of theories and yardsticks that could actually *measure* the results of learning. He spoke of Behavioral Objectives and Entry Behavior, Task Descriptions and Analysis, Justifications and (meaningful) Evaluation. To him, the utilization of audiovisuals was not playful stimulus, an end in itself; rather, these technological aids were only stimuli in the sense that they could be skillfully manipulated in order to insure a desired, predesigned response. Thus, the field of Educational Technology became a *tool* of the behavioral-based educators, those that put their faith in a response-oriented paradigm.

Yet, not too many years were to pass before the fickle pendulum of time began a return sweep, and with it a lurking suspicion that Behaviorism was not the panacea we had all hoped for. Charles Hoban summed up this new distrust when he glibbly remarked at the 1973 A.E.C.T. convention ". . .B.O. (Behavioral Objectives) derived directly from B.S. (Behavioral Science), and share with it the virtue of parsimony and the lack of sufficiency."[1]

Thus it was, that Cognitivism became an alternate learning theory which suggested that learning involves changes in the brain or cognitive structure. Grounded in the wisdom of Vygotsky (1965), Bruner (1966), and Gagne (1968), amongst others, the disciples of the Cognitivist school make allowances for Receptive Learning, the reception of knowledge that is simply taken in and may not be acted upon or overly indicated for some time.

In this regard, Arbib (1972) asserts that learning involves changes in the brain, which do not necessarily mean immediate behavioral change. He suggests that the human organism seeks information which is *relevant* to its actions. Such information is often stored, but its perception is oriented toward the future.

However, many among us may simply shrug our shoulders in undisguised ennui: *Good grief, not again! We've been through all that Behaviorism-Cognitivism hassle before and frankly my dear, I don't give an –ism!* Yet in the words of some contemporary song lyricist, "the beat goes on". We've seen the popularity of the Cognitivists replaced by that of the Behaviorists and it's not too surprising to note that there are signs already of a return swing of the metronome. So what's new?

Yet, could it be possible that there is another *star* in the learning firmament? The possibility seems to be undeniable for there are many hushed hints that one such star exists. A number of voices speak of a sighting long ago in that time when audiovisual machinery was just dawning upon the educational horizon. It was a startling paradigm, and only hinted at by the most daring of practitioners. Some leaders in the field of A/V learning materials were bold enough to suggest that STUDENTS could actually run those machines, and perhaps, just *perhaps* those students could design their own learning environment!

Some teachers believed the idea to be heresy, while others refused to talk about it (perhaps from a fear of professional excommunication). There were even some who scorned the idea so much that they simply dismissed its existence and never thought of it again. Thus it was that the idea of student-directed learning was forgotten in the A/V shuffle, or so it seemed.

In fact, it became further forgotten as a result of the stimulus versus response learning paradigms controversy. However, we've arrived at a time in the era of educators, when the two-paradigm controversy hasn't been resolved. What is even more important, we're still having trouble helping children to learn. Perhaps, the time has come for us to resurrect the forgotten paradigm, the one that dares to suggest that students can help teach themselves. It's neither a new concept nor a revolutionary one, but it *is* a forgotten star that should be brought back into focus.

Actually, the task would not be so formidable, especially for those educators who have already subscribed at least in part to the benefits of instructional media. The accessibility and present cost effectiveness of such learning materials as slide/tape, overhead transparencies, 16mm film, filmstrips, and more recently videotape cassette has enhanced the flexibility of teaching strategies as well as provided for a more palatable learning environment for the student. Media is no longer a razzle-dazzle toy, but rather an educational technology whose products have been carefully honed over several decades of refinement. Today, educators need not purchase the first available item on the market to satisfy a teaching need; there are many, and the manufacturers have diligently strived in their competition to produce materials which are extremely well crafted as well as very relevant to existing curricula. In short, these companies have proven that their Madison Avenue hoopla is not merely sound and fury, but (to borrow some of their own jargon) "it's the real thing"! Indeed, the competition has been so keen, that even governments have thrown their hats into the ring. Witness the excellent videotape services of the Ontario Educational Communications Authority (O.E.C.A.). Yet, to pursue a metaphorical journey toward our *forgotten star,* the alternate paradigm, we must now address our attention to the unique properties inherent in such a learning model.

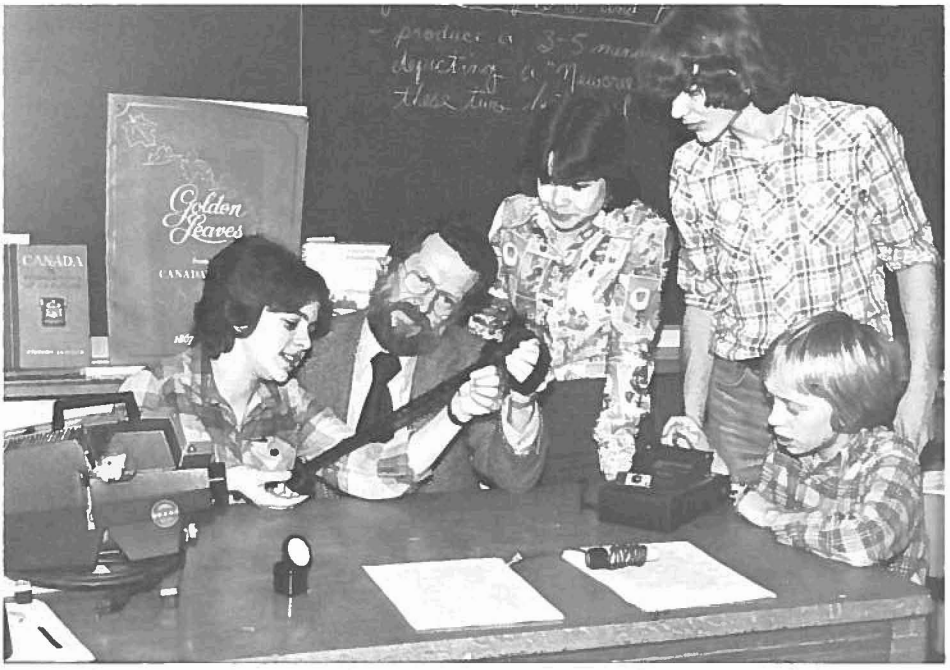
Aside from the controversy of who among us are Behaviorists and who are Cognitivists, we have already postulated that there are a significant number of educators who are utilizing numerous relevant

teaching materials. Hence, we have identified two of the three shining points of light belonging to our new/old star. The remaining point is that property which makes such a star unique: that of the STUDENT. Thus our star is composed of a mixture of the following elements: TEACHER, STUDENT and INSTRUCTIONAL MATERIALS.

This paradigm is one that suggests that these elements should be equally balanced, and solidly embedded in a *common* set of goals and objectives. Such a paradigm has been postulated by James Nord in his Three Legged Stool Model[2], Where he suggests that a learner could quite conceivably share in a learning partnership with the instructor and instructional materials. Nord writes a lucid and captivating article; however, even though it may appear to be plausible as theory, is it actually viable in the real world, the classroom? It is true that students have, in the past, been used as hardware "gophers", capable of acquiring, setting up and even operating film projectors and television sets; but are they really qualified to define a learning situation, let alone develop and impliment one? Do they really *belong* as an equal partner in our educational system?

In the present era, there are a number of basic problems that contribute to a poor learning environment. Of the many, we have been able to identify one that suggests students' purposes or goals of learning are often different from those of their teachers. Often, the instructor supplies more information than the learner requests or even needs. In this regard, Ernest Rothkoff discovered through empirical studies that the role of "information supplier" to students is a need felt more by the instructor than by the students. Further, most teachers lecture with a hope that the students learn; quite often they don't. Hence, when one considers the Three Legged Stool Model, it becomes apparent that some of our problems could be solved through such a partnership. For instance, if the student is a partner, that is to say, if he has an equal *input* into the planning of the learning situation, there will be a greater opportunity for his goals and aspirations to match those of the teacher. In other words, this model under present consideration allows for the student to extrapolate that information which is important to his personally conceived self-development. In addition, he would be in a position to offer suggestions as to the choice of relevant instructional materials as well as be utilized by the teacher to help produce such. In this manner, there exists a greater chance for a significant learning experience to occur.

Further, if instructional materials (which includes all of our audiovisual wizardry) play a more important role, the learning situation can be enhanced. After all, most



learning as we practice it in the classroom is primarily technical; and it is logical to assert that technical learning can be greatly aided by instructional materials. We are no longer presented with a major problem in this regard, as judicious choices may be made by both educators and learners from the myriad of available and relevant options. Subsequently, if the student and the instructional materials play a more significant role, then the teacher will have much more time to act as a Resource Person. In this manner, he will be able to devote more time to personal exchanges with the learners, which not only includes the defining and developing of future learning endeavours, but time to maintain and evaluate present progress.

In summary, this alternate paradigm presents an opportunity for teachers, students and materials to share in a unique educational venture. It provides for three dichotomous exchanges: First, teachers are able to select available materials to support their existing curricula. Conversely, the availability of certain materials may inspire educators to modify or expand their present approaches to courses of study. Second, the learner is able to suggest the use of available materials in his various programmes. Further, he too may be influenced by the mere existence of such, so that he suggests their inclusion in his classroom activities. Third, a new rapport can be developed between teacher and learner as they share in the responsibility of their task. Together, they can define their mutual needs, develop suitable programmes which can fulfill those needs, and finally participate in a joint evaluation of how well they have journeyed toward success.

Perhaps the model of a self-instructing student, supported by an accessible teacher and meaningful instructional materials was never forgotten. Maybe it was simply ignored by the many and quietly employed by the few. Whatever the case for the past may be is not of paramount importance, when we consider the opportunities of the present. For this is a time when we could journey toward a new paradigm. Although it may very well be an old Star in the educational firmament, its glow is warm and its three points of light . . . *teacher, student,* and *instructional materials* . . . are shining brightly in undisguised invitation.

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[1]Hoban, Charles F., "A Current View of the Future of Theory and Research in Educational Communication," *Audiovisual Instruction,* January, 1974, p. 30.

[2]Nord, James R., "Building A Three Legged Stool", Zalatimo, S.D., and Sleeman, P.J., *A Systems Approach to Learning* Meded Projects, Roselle N.J., 1975, pp. 463-85.■

Microcomputers and Sheridan College

by Ted Bangay
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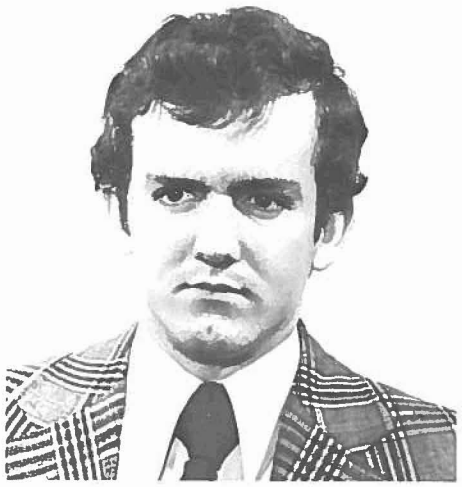

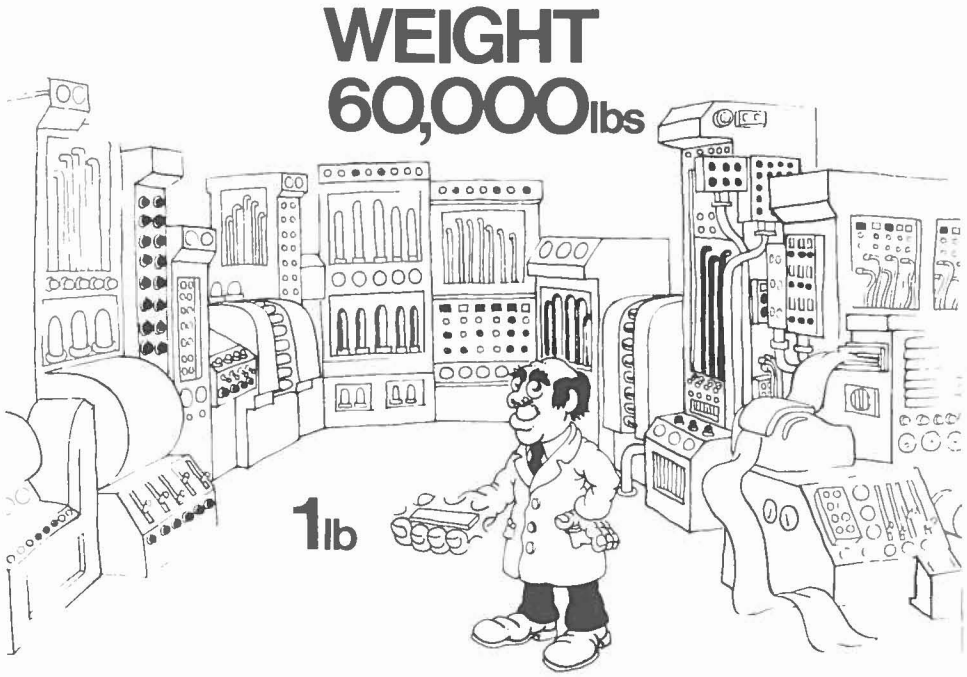

Desk top computers, you say! A computer in every home! Preposterous. Our traditional conception of a computer is the great electric monolith humming busily away in a secret room in the basement. Recent technological developments, however, will do much to change this somewhat ominous image. Microcomputers or computer systems based on the integrated circuit microprocessor, are beginning to revolutionize the field of computing. Microcomputers have shrunk both the size and cost of computers while maintaining a great deal of computer power.

In this article I will discuss what microcomputers are, what they can do, and how Sheridan College in Oakville, Ontario is making use of them.

Evolution of the Computer

In order to understand the significance of microcomputers, it is useful to briefly examine the history of computing devices. The first electronic computer was built in 1943 and was called ENIAC. This machine used vacuum tubes similar to those found in old radios. ENIAC weighed thirty thousand kilograms and, including its power supply, was about thirty meters long. It was configured in a 'U' shape in a room fifteen meters long and ten meters wide. As you probably know, vacuum tubes require substantial current and generate a great deal of heat. ENIAC was fed by one hundred and fifty kilowatts of power and required ten two-horsepower motors to dissipate the heat. (Many of the early vacuum tube computers were water-cooled.) Over eighteen thousand vacuum tubes resided in ENIAC and the output consisted of three thousand neon lights. Although the original estimate for ENIAC's construction was $150,000, the final bill came in at $400,000. We'll see later how ENIAC compares with the Fairchild F8 microprocessor.

The development of the transistor revolutionized computing. Here was a device which could perform all of the functions of the vacuum tube but could do them faster, more reliably, and more cheaply. In addition, the transistor was a fraction of the size of the vacuum tube and required a fraction of its current. With the transistor, large scale manufacturing of computers became feasible.

Transistors, however, represented only the first step in the miniaturization process. The next major development was integrated circuit technology. An integrated circuit is a single device which effectively performs the function of a circuit with several transistors. The circuit is constructed on a silicon wafer using microscopic masking and doping techniques which are beyond the scope of this article. Early versions of integrated circuits contained the equivalent of up to five transistors in one package. The chief advantages of integrated circuits were their compactness, low power consumption, and the relatively low number of connections required. A typical first generation integrated circuit was the flip flop, a circuit which alternates between two stable states upon receipt of input pulses. These early integrated circuits are now known as SSI (small-scale integration).

Integration techniques were gradually refined until it was possible to implement several flip flops, for example, on one chip. A series of flip flops, which is known as a register, constitutes a fundamental building block in computer architecture. In addition to increasing the complexity of circuits, different methods of implementing the circuits were evolved. Primary concerns of these alternate implementations were to increase the speed of operation and density (i.e. the number of transistors per unit area) of the circuits. Integrated circuits of this type contained the equivalent of hundreds of transistors and are known as MSI (medium-scale integration).

LSI (large-scale integration) made its appearance in the late 1960's. These integrated circuits, of which calculator chips are examples, contain the equivalent of up to fifteen thousand transistors. Although such an integrated circuit is housed in a package approximately five centimeters long, the actual circuit is implemented on a slab of silicon barely a centimeter square.

The miniaturization process has been dramatic, but there is no reason to believe that it is complete. Charge-coupled devices (CCD) promise to provide an extremely dense memory implementation when fully developed.

The heart (or brain) of any computer system is the central processing unit (abbreviated CPU). The CPU consists of the Arith-

Personal Electronic Transactor. Unlike the TRS-80 which has its components housed in separate cases, the PET is a complete microcomputer system in a single box. The PET, based on the 6502 microprocessor, uses a fairly powerful BASIC and has tremendous graphic capabilities. The standard version has 8k (eight kilobytes or eight thousand bytes) of RAM which can be expanded to 32k. Like the TRS-80, the PET is an extremely popular microcomputer having a great deal of software available.

The third low-priced microcomputer is the Heathkit H8. This machine is available as a kit or fully assembled. In kit form, the main CPU board is pre-assembled since its construction is rather intricate. The main unit of this microcomputer has a row of switches on the front panel enabling the entry of binary information (machine code). Alternatively a keyboard can be connected to the H8 allowing more conventional communication with the microcomputer.

What can microcomputers be used for? In the home, it is possible to use them for balancing chequebooks, keeping household financial records, calculating automobile expenses and many other applications. In addition, several games programmes (e.g. chess, Startrek) have been written and can provide hours of recreation.

In the business environment, microcomputers are beginning to take a larger slice of the computing pie. Although the three low-priced microcomputers previously mentioned are probably not powerful enough to support small businesses, several of the larger and more sophisticated machines have the ability to access large data files very quickly. This facility is essential for the transactions of a business. In addition to hardware there is considerable business software available. Among the programmes which have been written are accounts payable and receivable, general ledger, payroll, inventory, and word-processing. Aside from minor modifications to suit individual requirements, many of these programmes will run 'off the shelf'.

Computer Assisted Instruction at Sheridan College

It is also possible to use microcomputers as teaching aids. In fact, microcomputers make excellent learning devices because they offer their undivided attention to the student and provide individual instruction. The remainder of this article is devoted to Sheridan College's involvement with microcomputers.

The college's commitment to microcomputers began in the summer of 1978. Initially microcomputers were used to provide a course in remedial mathematics. This service had previously been provided by terminals connected to the computer at Seneca College using the OISE remedial mathematics programme. Although the OISE system is excellent, its use at Sheridan College entailed certain problems: 1) only three terminals were available to service approximately fifty students per year, 2) the line charges associated with the computer connections were an unacceptable ongoing cost, and 3) several students complained about the inflexibility of the programme's structure.

An experiment was conducted using the Commodore PET (the college owned one at the time) to determine the feasibility of implementing a remedial mathematics course to replace the OISE system. When the results proved successful, it was decided to carry out the project. The college purchased almost thirty PETs, and a microcomputer lab containing fifteen machines was established in the library of the Oakville campus. Ten PETs were placed in the Brampton campus library. The Commodore machine was selected over the others for several reasons: 1) the PET has exceptional graphics capabilities, 2) all of the components are housed in one box, facilitating security, and 3) the low price was attractive. On the basis of the yearly costs associated with the OISE system it was estimated that the Oakville microcomputer lab would pay for itself in two years. This benefit, however, is only one of several, as we shall see.

The Micromath Program

Before describing the Micromath course in detail, it is useful to discuss the students who make use of it. The students are enrolled in programmes such as business, community and transportation planning, and computer studies. They are required to complete various mathematics courses related to their programmes. We have found, however, that many of these students lack the basic skills in mathematics which are prerequisite to their regular math courses. In fact, some students experience difficulties with fundamental arithmetic. It is for these students that Micromath is intended. Micromath is intended to raise the students' competency in basic mathematics to a level which allows them to continue into their regular mathematics courses.

The students are channelled into Micromath by various means. The most common method is for the instructor of the regular math course to test his class early in the school year. On the basis of this pretest some of the students are required to complete all or part of the Micromath course. Other instructors monitor the progress of their students through the regular math course. If the student is doing poorly, the instructor may direct him into the Micromath course. Some students voluntarily enter the course, even though they are not required to study mathematics in any of their programmes. These students recognize their own weaknesses and are trying to upgrade their skills in mathematics.

It is important to note that the students do not receive any credit for completion of Micromath although they are required to do considerable work. In addition, only a few students study Micromath and their regular math courses concurrently.

Micromath is structured around eighteen units which are further subdivided into, from three to seven objectives each. In its present form there are a total of ninety-three objectives which cover the topics of greatest importance. These topics range over integer arithmetic, fractions, percents, basic algebra, graphing, and ratios and proportions. These topics were felt to be the most important when the course was designed. However, we expect to receive feedback from our instructors concerning additional topics to be covered. The original course was written by Sieg Hummelbrunner, an instructor at Sheridan College.

There are several resources available to students in Micromath. Each student is required to purchase a text book which contains all of the instructional material and a self-test for each unit. The book is intended to complement the material which is presented on the microcomputer. In addition, the microcomputer lab technician is available for individual attention if the need arises.

Micromath is a drill and practice format computer-assisted instruction course. A typical lesson on the microcomputer begins with a choice for the student. He is given the option of reading some instructional material or answering a series of practice problems. The student's decision is based on his understanding of the material presented in the text book. If he decides to read the instructional material, he is presented with several frames of computer screen discussing the topic at hand. Upon completion of the instructional material, he enters the practice section of the programme. This is the entry point for students who opt out of the instructional material.

The practice section of the programme generates a series of questions which the student is required to answer. The questions are generated randomly. That is, there is a random number generator in the computer which generates a different question every time. The student's response is made through the keyboard.

The programme incorporates extensive error checking to monitor the student's success and to provide the appropriate feedback. With each question the student is informed as to the correctness of his answer. In the event of an incorrect answer the correct answer is displayed on the screen.

In addition to checking individual answers, the programme monitors the student's overall progress. If the student is answering most of the questions correctly, the programme allows him to proceed to the next lesson. If most of the answers are incorrect, the programme suggests that the student seek help from his instructor. Between these two extremes, if the student is getting some of the answers right and others wrong, the programme advises the student to review the lesson.

A traditional failing of computer-assisted instruction is that it can be very cold and impersonal. Many students are intimidated by the computer, or feel insulted by its instruction. These problems are overcome in the Micromath course by the presence of the microcomputer lab technician. The technician is qualified to give individual instruction in mathematics. In addition, the technician is responsible for distributing the programmes (which are stored on cassette tape), and scheduling time on the microcomputers. The microcomputer lab technician is present in the lab at all times and is available for tutorial assistance in mathematics.

Currently the progress of the students through the course is monitored manually by the lab technician. When a student has successfully completed the objectives in a unit, he is given a test on that unit using the microcomputer. The tests have similar formats to the objectives, except that the correct answers are not provided to the student until the end of each frame. Since the topics of the course are fundamental and essential for the student's regular math courses we insist on very high standards of performance.

Because the Micromath course has been available for less than a year we have very little feedback as to its effectiveness. However, most of the students have commented that they believe Micromath has helped them. Very few of the students have rejected the computer-assisted approach to remedial mathematics. The students recognize the value of the intensive drill and practice which Micromath provides.

Programming Instruction

Although Micromath was the primary reason for Sheridan College's involvement with microcomputers, other uses of the machines have developed. The programming language used by our microcomputers is BASIC. Students from the business, computer studies, research techniques and community planning courses use the microcomputers to learn programming.

There are many advantages to using microcomputers to teach introductory programming. One subtle advantage is that for many students a large computer system can be very intimidating. When confronted with a microcomputer, however, the student realizes that he is dealing with what amounts to an overgrown calculator rather than the threatening machine mentioned at the beginning of this article. In the absence of this threat, the student is encouraged to experiment without fear of "crashing the system". On the other side of the coin, there is no system for the more enterprising students to attempt to crash.

Microcomputers offer the student computing at his fingertips. The PET in particular has excellent editing features enabling corrections and changes to be made very easily. In addition, the results

(or consequences) of these changes can be seen almost immediately on the computer's CRT screen. Implementing such changes on a large computer system requires both keypunching and job submission. This can be time-consuming.

Students use the microcomputer lab facilities for the completion of their programming assignments. In general the students attend the lab for one scheduled hour per week and at any other time when the machines are available. As with the Micromath course, the microcomputer lab technician is available for tutorial assistance. Some instructors permit the technician to assist them in the grading of programming assignments.

Learning by Appointment

In addition to Micromath and computer programming, the microcomputer lab is used in a scheme called "Learning by Appointment". Under this programme members of the general public may rent the use of our microcomputer facilities by the hour. The college has accumulated a library of approximately three hundred programmes which are stored on cassette tapes. Among these programmes are educational tapes, business applications, games, simulations, and graphics demonstrations. In fact, one programme allows the computer to instruct the user on how to programme. Another programme assisted in the preparation of the 1978 Ontario income tax return. Although there is no instructor available under Learning by Appointment, there are posters mounted in the lab which provide the minimum instruction necessary for beginners to get under way.

Future Growth

Microcomputers have taken a firm hold on Sheridan College. However, we are expanding our facilities and we plan on providing more services to our community. While we currently use the microcomputer lab for Micromath and computer programming, there is considerable room for expansion in the area of computer-assisted instruction. Plans are under way to add more units to the Micromath course as well as other subject areas.

Several microcomputers of different manufacturers have been acquired. We now own two Compucolor II microcomputers which have exceptionally fine graphics using eight foreground and eight background colours. This machine has sixteen kilobytes of RAM and comes with a floppy disk drive. It offers a vast potential in the area of computer-assisted instruction.

In addition to the Compucolors, the college has acquired five North Star Horizon microcomputers. These machines come with thirty-two kilobytes of RAM and have dual floppy disks built in. These disks permit the accessing of three hundred and sixty kilobytes of data. Perhaps the strongest feature of the North Star computer is the fact that more software has been developed for it than any other microcomputer. Using some of this software we intend to demonstrate several business and accounting principles to our business students. In addition, we have several printers, some of which produce letter quality copy, enabling us to teach and demonstrate word-processing.

For the benefit of the surrounding community, Sheridan College will be presenting between six and ten workshops per year dealing with various aspects of microcomputing. Some of the possible topics include microcomputers in business, education, music, programming, and recreation.

In mid-June Sheridan College is hosting Micro-Age '79, an exhibition of microcomputer equipment and software. This will be the second year for the show, and we expect to attract an audience of over four thousand people. Over forty exhibitors will display their microcomputers, terminals, printers and other related equipment. The response to last year's show was tremendous, and we expect this year's version to be bigger and better.

Microcomputers are assuming a larger role in the computer industry daily. They provide considerable computer power at relatively low cost. Sheridan College is leading educational institutions in providing the community with the training and knowledge of microcomputers which will be necessary in the immediate future.■

Special Interest Groups

by Tom Rich, AMTEC Director

The past several years have seen an increase in interest in and support of Special Interest Groups within AMTEC. Recently, questions have arisen on exactly what the role of these groups should be and their relationship to the formal structure of AMTEC. At the same time, a number of people have suggested that Special Interest Groups provide a convenient focus for exchange of information on topics of mutual interest and thus a way to increase the membership's input to *Media Message.*

With these considerations in mind, the Board of Directors decided it was an appropriate time to draw up a set of guidelines for Special Interest Groups which would facilitate their development and operation. The following guidelines were adopted at the February 10 board meeting. We hope that they will provide a stimulus to the continuing development of Special Interest Groups in areas of concern to various segments of the AMTEC membership.

At AMTEC '79 in Ottawa members of the Board of Directors will be in contact with the groups already formed to provide assistance in organization and to answer questions about the guidelines. We would also be happy to entertain proposals for new Special Interest Groups that members may wish to establish.

AMTEC
Guidelines for Special Interest Groups
(Ammended version Feb. 10, 1979)

The intent of providing for the organization of Special Interest Groups is to facilitate the exchange of information on topics of professional interest and concern. These groups will provide a means for those with common interests and problems to get together and share ideas and solutions.

The following guidelines outline the structure of the Special Interest Groups.

(a) Special Interest Groups may be organized to represent any major educational media and technology areas and professional interests that lie within the scope of the Association.
(b) At least two members of the Board of Directors shall be appointed to act as liaisons with Special Interest Groups. These members shall guide the development of new Special Interest Groups and promote growth of existing Special Interest Groups, stimulate functional

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Today: Photography from a Small Plane Tomorrow: The World (of maps)

by Lou Wise
Co-ordinator of Teaching Aids, Toronto Board of Education
Member of the AMTEC Board of Directors

Note: With the exception of Figure 1, all photos and maps are monochrome reproductions of colour slides. It is important to remember that the clues provided by colour are present in the slide-pairs, even though missing here.

All modern map-making requires two things in the initial stages. These are flight and photography. Whether it be a map of the city or town we live in, the country or the continent — or the detailed map of the surface of the moon — some means of flying over and photographing the surface must be employed. And it's interesting to note that these two technologies have been developing during the same approximate time period within the last 75 to 100 years.

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amtec 79

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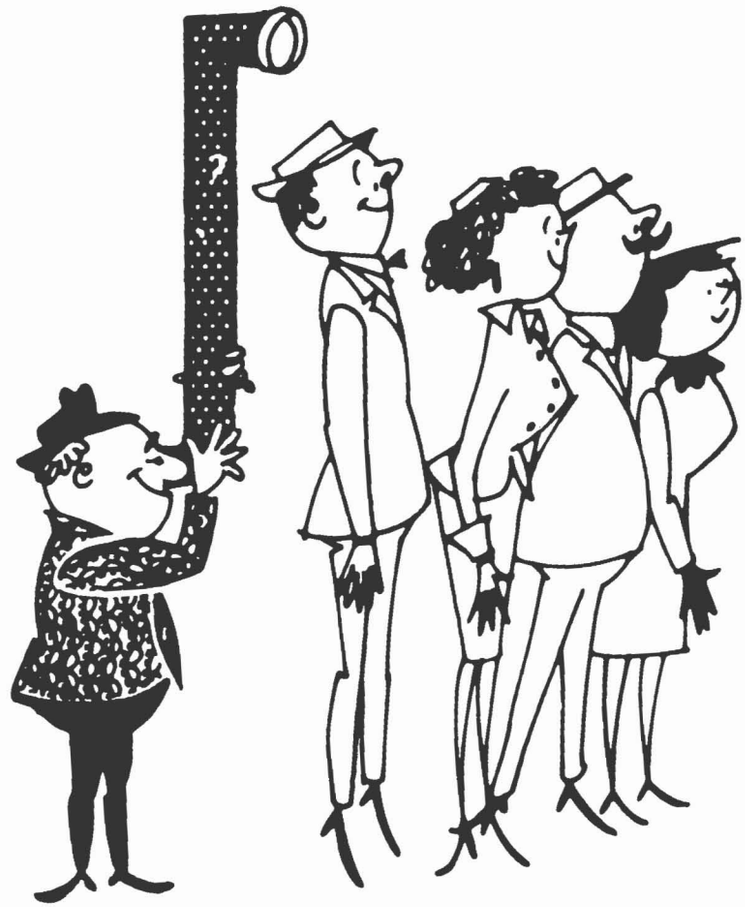

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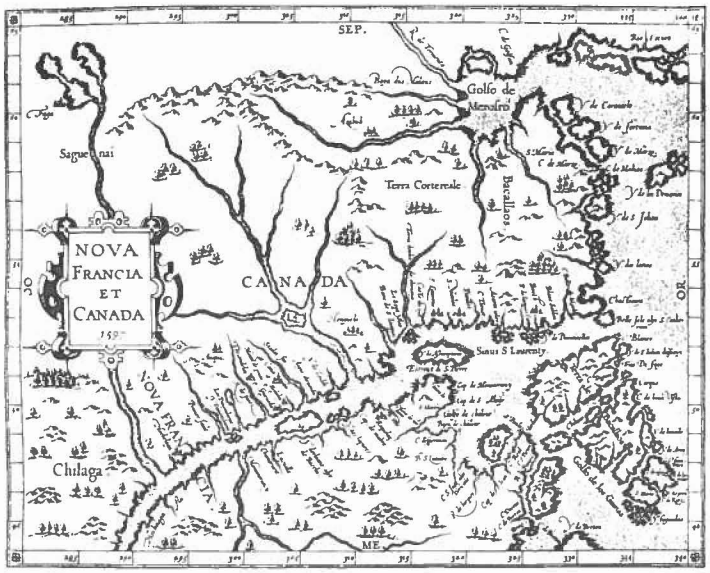

Figure 1. *A 1597 map of Eastern Canada by Cornelius Whytflit, a Dutch historian who produced the first Atlas of the New World (N. & S. America) in 1597.*

Before that, maps could only be made by the explorer/map-maker who could look and draw. (Figure 1)

The accuracy and detail of today's maps had to wait for aerial photography and cartographic skills to develop to the level where maps are now extremely precise and accurate. But as with most of the visual media, our skills to adequately read and make the best use of maps has not kept pace with the development of the medium.

All maps are essentially abstract representations of the surface of the earth (or whatever they depict). Their abstract form is likely the greatest single reason that young children in particular cannot easily grasp the concept. There are other reasons of course. One is the age at which most young children are given the opportunity, the encouragement and the necessary tools to help them acquire the skills of map reading.

For some years, in a few places, a combination of aerial photos and topographic maps printed on 8 1/2 x 11 paper has been used to advantage among secondary school students. All secondary school geography departments in the Toronto Board of Education have used this approach for about 15 years. The shortcoming in this material lies in the fact that it can only be printed in monochrome if the cost is going to be kept within reasonable limits. The advantage of course is that once it's all ready for offset printing, it can be turned out in quantity so that students can have their own copy of the pairs of sheets. But there is another disadvantage in the monochrome reproductions. The maps any of us might use are always printed in colour and the colour provides important clues. Since being able to recognize and distinguish clues is the basis of much map reading skill, then colour must be seen as important. Again, the monochrome reproduction of the aerial photograph is another step removed from the reality of the real world.

With these several thoughts in mind, I decided to develop pairs of 35mm colour slides with one of the pair being an original air-to-ground slide that I would shoot myself and the other one being a 35mm colour slide of a corresponding section of a large scale topographical map. (Figure 2). The idea started with a personal interest in the several parts of the enterprise — flying, photography and map-reading skills coupled with the knowledge that most adults, let alone students in our schools, tend to be poor map readers. My intention has been to encourage the use of this material somewhat earlier than the present secondary school age when most students begin to acquire some map skills. The classroom testing I've done to date has been at the Grade 6 level. I suggest the materials can be used at Grade 6, 7 or 8.

It is known that for most children up to the age of 9 or 10 years (Grades 4 and 5) the concept of a map as a "picture" of the earth is a difficult notion to grasp and fully understand. By Grade 6 (and certainly by Grade 7 or 8) children *are* able to comprehend the idea of a map, but the acquisition of the skills needed to fully understand and use the map will take time and effort.

The "pairs" have provided evidence that Grade 6 students *can* begin to grasp the idea of the map and at the same time acquire the skills needed to "read" and effectively use maps.

The two slides (or the "pair") are projected together, usually on two screens so that large projected images can be viewed. In this way, the students can make direct comparison between the original photo-slide which represents actuality as seen from the air, and the abstraction in the form of the map section.

The maps I use for the pairs are 1:50,000 scale. The large scale is particularly effective in that it provides enough room on the map to accommodate considerable detail such as houses, barns, sports tracks and so on. Some of the particular problems which can be considered are the use of symbols on the map, scale and map orientation. For example, in the matter of orientation, most of us were taught when young, (or perhaps we instinctively learned) that the map was to be read with North always at the top. But if we're looking to the South in a real situation, it's usually better to orient the map the same way, i.e. with South at the top, or away from us. (Figure 3). The problem of map orientation can be clearly demonstrated by projecting an air-photo slide looking to the South (South

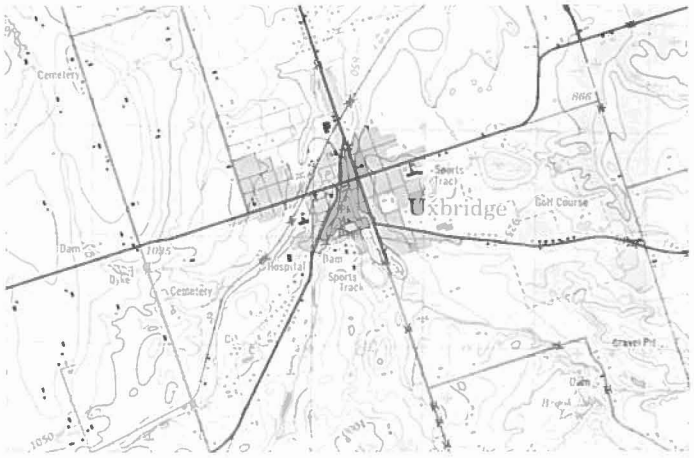

Figure 2. *Photograph and map of Uxbridge, Ontario, looking North. Mid-winter.*

Figure 3. *Hastings on the Trent River section of the Trent-Severn Waterway, looking South. The top of photo and map are South. Orientation is not difficult.*

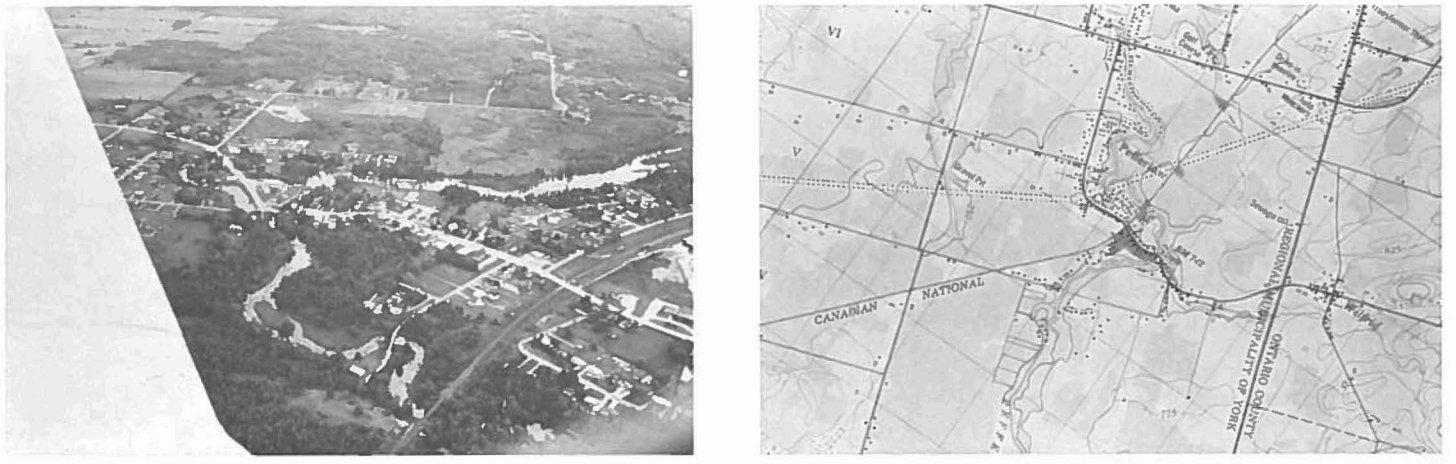

Figure 4. *Pefferlaw, a small town just South of Lake Simcoe. The top of the photo is South; the top of the map is North. Orientation is difficult.*

will be at the top of the screen) and projecting the slide of the map with North at the top of the screen. (Figure 4).

Problems of scale are examined in a different way. Most pairs are made so that the slide of the map section covers about the same area as the air-photo slide. (Figure 5). But some are deliberately made with a much larger section of the map shown on the slide. In this way, the point of interest on the air-photo slide can be placed in a corner of the map slide, thereby increasing the difficulty for the student to locate himself. This approach increases the need for the student to use all the clues properly including orientation, scale, symbols and the relationship of railroads, rivers, town and villages. (Figure 6).

There is one other important difference between the slide pairs and the paper prints referred to earlier. The printed reproductions of air-photos are usually from aerial survey photos. These are generally vertical photos (looking straight down on the surface of the earth). The air photos I have done are of necessity, oblique, looking at the earth at an angle. That's because I can't shoot out of the bottom of my plane. I must shoot out the window with the plane banked over to lessen the angle somewhat. Certainly the vertical photo is more like the map. They both show the earth as though we're looking straight down to the surface. But keep in mind that if we go driving or hiking — or flying — and wish to locate ourselves on a map, we can usually only look at the earth at some oblique angle. Things look very different when seen obliquely in one picture and vertically in another. (Figure 7). But I suggest that an important part of map reading is being aware of this difference in appearance and being able to deal with it.

Here's another important point that should be noted. In many cases the maps are not up to date. There may be a road or bridge or some other feature that can be seen in the photo-slide, but which is missing on the map section. The learner needs to be aware of this frequent difference. It's a difference that's clearly observable in the pairs where it occurs.

I first started preparing this material in early 1977 and in the last two years have continued building the collection. It started with nearby coverage based on local flying I tend to do in Southern Ontario. Last year it started to branch out with photo-flights in the Yarmouth area in Nova Scotia, the area north-east and north-west of Regina and part of Prince Edward Island. (Figures 8, 9 and 10).

Last fall, because of a quite keen, personal interest in the Trent-Severn Waterway that cuts across a large part of Southern Ontario, I decided to photograph the entire system. During two rather lengthy flights, it was possible to shoot the entire system including each of the 43 locks and all the main towns and villages as well as many of the open sections along the 250 mile waterway. The map sections have now been completed for that. The entire series comprises 126 pairs. (Figures 11 and 12).

Another project completed last Fall was the photography of the Grand River from mouth to source. It's another waterway rich in the history of Southern Ontario and cutting across a large swath of its geography. The map slides for that aren't ready yet but the air-to-ground work is complete (Figures 13 and 14). This spring or summer I plan to do similar coverage of the Welland Canal, that historic and important link in the Great Lakes–St. Lawrence Waterway.

Figure 5. *Aurora, a small town not far north of Toronto. Scale of photo and map are similar.*

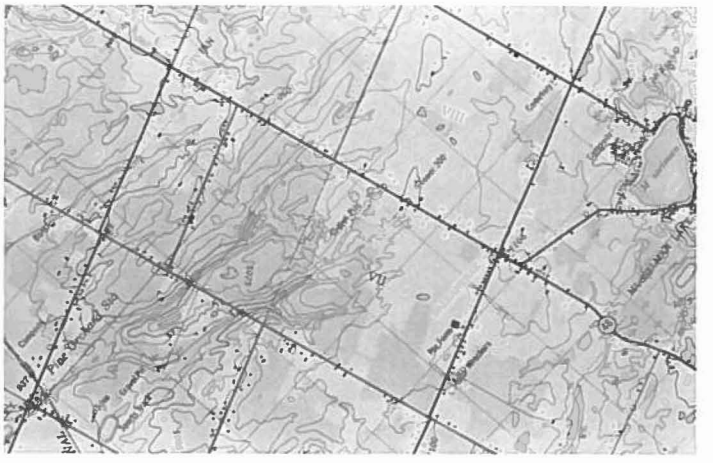

Figure 6. *Cedar Valley, Ontario, looking Northeast. Scale of photo and map are very different.*

Figure 7. *Just south of Barrie, Ontario.*
Three problems are apparent: map is "vertical", photo is oblique; scale difference; orientation (map is turned counter-clockwise compared to photo).

A Word About the Photography

It's likely self-evident that ideal weather conditions are a must for this kind of photography. The least bit of haze degrades the pictures even when a UV or haze filter is used. Because I do the flying and the photography at the same time, I learned early in the project that I would need a compact, light-weight full frame 35mm camera. If the air is smooth, the plane (Piper Cherokee 180) will look after itself briefly while I shoot with both hands on the camera. But if it's turbulent then I need to shoot with one hand on camera and the other on the yoke (control wheel), hence the need for compactness and light weight. Single lens reflex types are just too bulky and heavy. I tried about twelve different cameras and finally settled on a very compact automatic exposure camera which has adjustable shutter speeds up to 1/500 second.

Figure 8. *Yarmouth, N.S. with the airport in the background.*

Figure 9. *Indian Head, just east of Regina, Saskatchewan.*

Figure 10. *Charlottetown, P.E.I. The central business district and harbour area.*

I simply set the focus adjustment at infinity, the shutter speed at 1/500 and let the automatic exposure take care of the rest. The auto exposure is a must because there just isn't time to read exposures and match needles or set apertures while trying to fly and compose. And in any case, auto-exposure cameras today do as well or better than most people who read exposure meters and make manual settings. I use Ektachrome 64 which has a good balance of colour fidelity, contrast range and fine grain with excellent sharpness.

Until August 1978, I was doing the photography using rental aircraft from Buttonville Airport just northeast of Toronto. Then in August I bought half-ownership in a Piper Cherokee 180 which lends itself very well to this kind of photography. It's a four place airplane so I sometimes take others along for the ride. The ownership also adds to the flexibility in that flight time is not restricted as it is when renting.

My hope now is that teachers with intermediate grade students will find this material as effective as early evaluation indicates. If they do, it may help to encourage some earlier acquisition of map

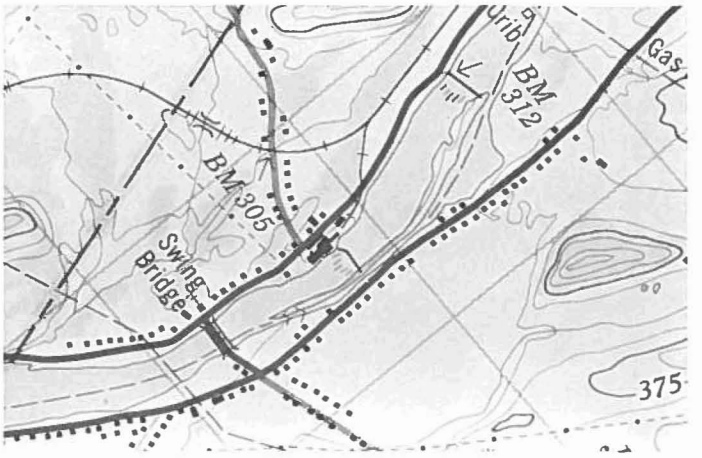

Figure 11. *Lock 3 of the Trent-Severn Waterway. At Glen Miller, just North of Trenton, Ontario.*

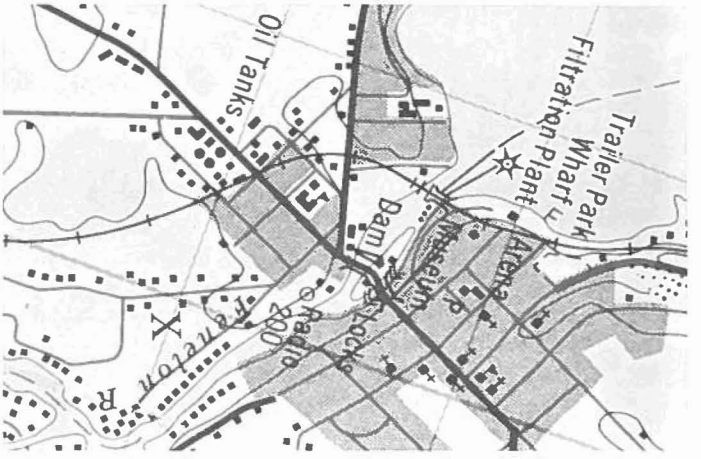

Figure 12. *Locks 33, 34 at Fenelon Falls on the Trent-Severn Waterway.*

Figure 13. *Dunnville, Ontario, just North-West of the mouth of the Grand River. Lake Erie is in the background.*

Figure 14. *The Shand Dam and Lake Bellwood on the Grand River. North of Elora and Fergus, Ontario.*

skills by younger students. I intend to continue producing the slide pairs which means a continuation of the combination of flying and photography necessary for the production.

If you're interested in learning more about the slide pairs and wish to find out about availability of the material, simply drop me a line. An early task will be the preparation of a catalogue of the material now ready. Let me know if you wish to have a copy of that when it's ready.■

Have Tape, Needn't Travel. . .
Busy Professionals Share, Sharpen Skills Electronically, Via Cassettes

by 3M Company, St. Paul, Minnesota

For a growing number of educators interested in assuming a leadership role in their profession, the printed word has been bypassed by a nationwide audio tape exchange program originated by a one-woman task force at a small New England college.

The audio communications network, called the Women in Instructional Technology (WIT) Tape Exchange, is the brain-child of Andd (say it And) Ward, an assistant professor at Rhode Island College.

The program began 3 1/2 years ago when Dr. Ward, a newcomer to instructional technology, found it difficult to meet women leaders in her field. To remain in contact and share ideas with those she had discovered, she turned to cassette tapes.

"The written word just doen't do it for me anymore," she says, "not the same way a person's voice does, coming out on tape, getting me personally involved. Tape seems to me to be the ideal way to share ideas with other professionals."

Andd Ward quickly discovered that her growing collection of tapes filled her communications needs in instructional technology — the study of print and non-print material as educational tools — and that the recipients of her own tapes felt exactly the same way. Thus, the WIT Tape Exchange was born.

The Tape Exchange's growth was rapid as teachers, librarians and instructional media professionals heard of the program through meetings of the Association for Educational Communications and Technology (AECT), or in educational journals or AECT newsletters. Those who joined liked the idea and spread news of it further by word of mouth.

Today, 200 men and women, most of the AECT members, regularly request cassette copies (on a listen-and-return basis) of any of 250 commentaries dealing with a wide variety of leadership topics.

Many of the subjects are concerned with problems common to professional women — sexism in instructional materials, sex role stereotyping, etc. Andd Ward acknowledges that she began the program as a way to develop more female leaders in her field.

But as the program expanded, so has its focus. Men were included — about 50 are members now — and more topics were added. Today, Tape Exchange subjects range far afield. Professionals continue to record material on critical issues in education, such as media programs, visual literacy, etc., but many other leadership subjects are covered as well.

An advertising executive reflects on creativity; a hypnotist expounds on the use of relaxation techniques; an artist explains his philosophy of life; a 45-year-old college sophomore relates her thoughts about returning to academia; a banking executive tells how she balances career and family responsibilities; a public speaker suggests that nervousness at the podium can be cured by imagining the audience dressed in bunny suits. Life styles, survival strategies, positive thinking, careers. . . the list goes on.

Even more diverse than the subject matter are the circumstances in which the tapes are played. "Listeners are apt to play a tape in the car on the way to work or even while relaxing in the sun," Dr. Ward explains. "Some listen while shaving or dressing, others while cooking or cleaning the house."

"In this very busy world, very busy people find ways to use all their time to the fullest."

Wherever or whenever they are played, participants agree that the tapes are extremely helpful. "In general, the audio medium brings out unsuspected creativity," Dr. Ward observes. "Also, teachers and librarians in small schools have written to say that the program breaks their isolation. It enables them to brush up on media skills while making them feel a closer part of the overall educational community. Thus, speakers and audience are united by the audio link."

For the volunteer speaker, tape also develops self-discipline and self-confidence. "Making a tape for a nameless, faceless, voiceless audience, develops a person," Andd Ward believes. "In a sense, you are allowing others to observe you at very close quarters."

In at least one instance, the tapes have kept a media specialist from resigning her position.

"Using advice," the specialist writes, "I was able to turn a detrimental work situation into a helping-giving-working environment. . . The Tape Exchange isn't exactly a help line or a hot line, but it has become a very valuable life line for me. . ."

Keeping the life line open is a basically simple operation, Andd Ward says, adding: "Well, perhaps." Volunteers help to promote the exchange at media conferences around the country. For the most part, though, management is still a one-woman operation.

It's usually Andd Ward who finds the speakers and asks them to record. Because she has no access to high-speed duplicating equipment, she duplicates tapes in real time through a patch cord/tape recorder hookup. As many as 20 copies are made from each tape. In addition, she handles the bookkeeping to see that the cassettes keep moving in rotation.

That the exchange has been as successful as it has is a tribute to the woman and her perseverance, for the exchange program is only one of several responsibilities. But juggling multiple responsibilities is nothing new for the young professional. After graduation from Wheaton College in Massachusetts, she was determined to continue her education while working full-time and fulfilling household responsibilities. Her peripatetic schedule led her to develop a frenetic but well-organized lifestyle.

As she explains, "My husband and I had to schedule time the way other people pinch pennies; every minute was precious, none could be squandered. For instance, Friday night was for grocery shopping and banking. If we ran out of food or money during the week, we somehow had to make do; there was no other time to get to the supermarket or bank."

Even a woman with Andd Ward's organizational abilities can't eliminate all the problems; most of the exchange's revolve around fiscal difficulties. Dr. Ward carries the financial burden for the program, collecting donations and modest fees for the purchase of tapes and mailing costs. Still, the exchange operates at a considerable loss. Dr. Ward pays the difference.

Money woes contribute to a chronic shortage of cassettes. Although each 30– or 60– minute tape is recorded front and back, the program is always "doing

without." Right now, there's a backlog of about 50 master tapes awaiting duplication.

The tape shortage also prevents the exchange from duplicating a sufficient number of copies. She is forever running out of tapes carrying the most popular topics.

"At least I haven't had to worry about my tape recorder," Andd Ward says. "For 3 1/2 years, I've used it nearly every day. Not once has anything gone wrong with it."

The recorder is a 3M Wollensak 2520 general purpose recorder. "It's a large portable machine," she says, "and it goes with me everywhere because I'm so happy with its quality."

Dr. Ward has found several other projects for the tape recorder. For one thing, she keeps up an extensive tape correspondence with about a dozen friends. "You can say a lot more on tape than you can in a written letter," she believes. "Recently I've been going through the cassettes I've collected over the past 3 1/2 years. It gives a nice perspective on friendship — much the same way a photo album does."

Then there is a book project which she is authoring. She is writing about her academic experiences, based on eight years of daily diary entries. Comments are recorded on tape. "In the long run, it's much more convenient than writing," she says, "and it's much easier to bring your thoughts alive."

The third project touches much closer to home. Andd Ward records relatives, some in their 70s and 80s, capturing stories of her family's history in the United States and the "old country."

"I'm beginning to find that the uses for tape and tape recorders are limited only by your imagination," she says. "For me, in my professional and personal life, they have been immensely valuable."

Persons wishing further information, please contact:

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Further Reflections

by Andd Ward
Associate Professor, Rhode Island College
and Director of the WIT Tape Exchange

Stuck as a Sandwich Stuffer

It was not just the tunafish grinders with hot peppers that kept luring me to a local grinder shop week after week while suffering through my Ph.D. dissertation ordeal. And it was not just the pleasantness of the place. It was more of an elusive quality which I still cannot explain. Perhaps it was that I felt a certain sense of serenity and solace when sitting at the sun yellow tables with their cherry red seats. And yes — I WAS hooked on those tunafish grinders with hot peppers.

There were days when I was drowning in the overwhelming pressures of working fulltime while commuting three hours a day to the university. The professors' lectures were boring, the course material redundant, the assignments inane, and the commuting exhausting. But still I plodded on. For eight years I studied and obtained an Ed.M., a C.A.G.S., and a Ph.D.

It was on the eve of the day I became Dr. that the answer appeared. The answer to why I kept returning to the grinder shop. It was the girl. The young sandwich-maker who cheerily scooped up mounds of tunafish and served it with a smile.

Where is your FUTURE? I longed to say to her each time. Where are you GOING? But I always quelled this instinct to open mouth and insert foot. Only Ann Landers or Erma Bombeck could get away with saying THOSE kinds of things. But ME? I was different. Only a struggling graduate student, harried, exhausted, unkempt when times got rough and it was more essential to write a course paper than to set my hair. ME? Why would she ever listen to ME?

But I longed to say it. To say, Get your education. At whatever cost, GET it. Don't be stuck as a sandwich stuffer all your life!

Success and Postdoctoral Depression

After awhile I couldn't stand it anymore. I had obtained the Ph.D. after years of screams, sweat, and tears. I had reached success. But once there I realized it was only SUCCESS and THAT doesn't begin to compare with HAPPINESS. Happiness is everywhere about us in birdsong, windswept trees, and clouds. In smiles, handshakes, and squeezes. But success is at the end of an arduous journey. And all it brings, all it promises — is SUCCESS.

I stared at the gilt-edged diploma on bathroom wall and vowed I would someday use it as toilet paper. The postdoctoral depression that set in was real enough, though I tried to ignore it. The bad feelings lasted as I struggled with debriefing, that transitional period between doctoral student status and civilian life.

Goal attainment — the Ph.D. — WAS success. But it did not FEEL like success. At last the goal was reached. I had no other goal to take its place. Panic took over. WHAT WILL I *DO*? WHERE WILL I *GO*? WHAT DO I *WANT*? I felt like a strange mixture of has-been/never-was.

Like postpartum blues, postdoctoral depression is a real enough human feeling. It accompanies successful attainment of a specific mind-consuming goal. Though these feelings of failure are real enough, this mental state is only temporary. Failure thoughts turn to success soon enough, given time.

Bad News Travels Fast

Bad news travels fast. The other day a neighbor informed me that a 200-pound acquaintance had just had a mastectomy. "And I found out her two children are adopted," she said. "And her husband used to be as fat as she."

"Hold it," I said. "Hold it. Now tell me some GOOD news."

"GOOD news?" the neighbor said. "I don't KNOW any."

The educational scene is not so far removed from this scenario. "Teacher-talk" often stresses the negative rather than the positive. Students' weaknesses are cited and emphasized, while their strengths are minimized or ignored altogether. Our students' shortcomings are naturally quite obvious to us as educators. And, of course, we want to help correct whatever deficiencies we see. This is as it should be. Where we fall short, however, is in not looking

(continued on p. 24)

Special Int. Groups *(cont'd. from p. 10)*

activities, and coordinate similar activities between Special Interest Groups.

(c) Any member of the Association may apply for membership in one or more Special Interest Groups. While not required to, members are urged to maintain a Special Interest Group affiliation. All Special Interest Group members must be members of the Association.

(d) A Special Interest Group shall be established whenever sufficient members of the Association petition for it and the Board approves.

(e) A Special Interest Group may be dissolved by the Board when the Special Interest Group votes to recommend dissolution or upon good and sufficient reason.

(f) A Special Interest Group has freedom to pursue matters within its professional or academic area that are not reserved to the Association, the Board, or other Special Interest Groups. A Special Interest Group may engage in no activity which is, in the opinion of the Board, inconsistent with the purposes and objectives of the Association.

(g) A Special Interest Group shall have a chairman elected by the members for a minimum term of one year. The chairman shall be responsible for organizing meetings, preparing the annual report, and coordinating information and articles prepared by the Special Interest Group for Association publications.

(h) A Special Interest Group shall have the responsibility for preparing a column to appear in *Media Message* at least once each year.

(i) A Special Interest Group shall hold a meeting at the annual conference. In addition, a Special Interest Group may organize and request time for workshops or presentations to be held during the annual conference.

(j) A Special Interest Group shall, annually, submit a budget to the Board reflecting its financial requirements for the following year. The Board may allocate Association funds as deemed appropriate for Special Interest Group activities. Funds so allocated shall be expended by the Special Interest Groups strictly in accordance with the budget approved by the Board. Funds granted will normally extend only to the cost of mailings.

(k) The Board shall review annually the activities of each Special Interest Group and shall at all times have the right to prohibit any activity not consistent with these guidelines. To facilitate the annual review, each Special Interest Group shall submit an annual report of its activities to the Board. That report shall include a financial accounting and shall be forwarded to the Secretary of the Board at least two weeks prior to the annual conference.■

A.V. Soundscapes

by Dr. Richard Lewis
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A soundscape is a message — an aural message using sounds rather than words or pictures to describe a theme or represent a situation. The soundscape uses a montage of sounds complementing each other to convey the message of the situation. A soundscape of a trip on the Cape Breton Steam Railroad might include the rhythmic clickety-clack of the wheels, the groaning of old ties, the toot-toot of the whistle, the hissing steam and the peculiar pattern (chug a chug) of a locomotive with a full head of steam.

Soundscapes are cheap and relatively easy to produce with no processing time required. The soundscape is ready to edit as soon as it is recorded. If a sound is missed, it can usually be repeated rather quickly. In addition, sounds are easy to improvise (think of radio plays) using a variety of materials. Soundscape production requires only an audio tape recorder, although two recorders are helpful, and a vivid imagination.

Will the soundscape be useful?
A soundscape, like any good instructional aid, should be designed to achieve an objective. The objective can be related to a content area, like social studies or can be related to developing auditory discrimination.

Before production, the course objectives and content should be reviewed in detail to find out where new material is needed and where soundscapes could be useful and relevant.

For instance, to achieve a social studies objective on where people work and what they do, various soundscapes could complement visual, reading and lecturing aspects thus utilizing another sense to reinforce learning. The soundscapes could present sounds associated with the work of sales clerks, firemen, secretaries, telephone linemen, telephone operators, bus drivers and carpenters.

How to do it
- List the sounds you wish to record to make a soundscape. The sounds recorded will depend on your teaching objectives and your students.
- Using your own ears, figure out where to place the recorder so that you will get the most faithful reproduction of sound. Sound does not pass through people, trees, etc., so be sure to place the recorder so the sound has an unobstructed path to the microphone. Before you record the sound, do a trial run with the recorder in several positions so you can discover the best position. If your recorder has an indicator which tells you whether sound is loud enough, pay attention to it. Most recorders today do not have a record level adjustment i.e., the recorder sets itself at the correct level. However, if you have an older recorder, you may have to set the record level.
- While recording, try to place the tape recorder in one position, preferably out of your hands (handling the recorder, almost inevitably adds undesirable background noise to the recording).
- Before attempting to edit the recording, make a list of every sound which occurs. Try to list the sounds immediately after the recording as you will forget the original sounds quite quickly.
- List the sounds you will want to keep and those you will want to delete.
- Using two recorders, re-record your soundscape to match the sounds you want saved.
- Prepare a list of the sounds for your students so that they can listen for new sounds not on your list and be sure they hear the sounds which are on your list.
- Design a procedure which can help you decide whether the experience was a success.

An example: The Joseph Howe Parade
Several years ago, a soundscape was made of the Joseph Howe Parade in Halifax. The objective of the soundscape was to help listeners re-discover the rich aural environment of an event like a parade. Stationed on Robie Street, a portable cassette recorder recorded the parade as it passed. The resulting tape started with the town crier and his bell, followed by two Clydesdale horses pulling a cart with a squeaky wheel. Then, a military band filled the air with its rich brass and precise tuning, accompanied by the ringing boots of the Armed Forces personnel. The tape also included the sounds of pipe bands, a lone piper, cars, large trucks and a troupe of children singing the Joe Howe theme. Additional sounds associated with a parade like a child yelling at a horse, a dog barking, parents telling a child to look at something and the claps which accompanied particularly exciting floats.

Those who heard the tape often had to be encouraged to listen more carefully — you hear a band but can you pick out the instruments — What type of horse? A Clydesdale? A small horse? A pony? How many pipers? A truck? Yes, but what size? How many people walking? The listeners soon realized that they could hear the sounds but they had to listen carefully and be taught to discriminate between seemingly similar sounds.

Other Possibilities
The parade was an obvious choice with its variety and its range of sound in a short time span in one location. However, several other events lend themselves well to soundscapes. A ride on a bus is an ideal topic. Consider the arrival of the bus at the stop, sound of passengers entering and leaving the bus, the exit bell, the coins being dropped in the box, the driver clearing the box, the doors opening and closing, etc.

Another possibility might be a ride on a ferry boat recording the thump of docking, the fog horn, the breaking of the waves, the dull, rhythmic roar of the engines, the inevitable gulls and people moving around with their papers and conversations. Along with a visual representation, the ferry example might be an excellent social studies unit on how people travel to work.

A soundscape of visits to various work environments might provide another means of presenting jobs. The sound environment in an assembly plant, an office, a construction site, a fire truck, a police cruiser, a garbage truck might provide real stimuli for discussion.■

Further Reflections *(cont'd. from p. 22)*
deeper and finding students' ACCOMPLISHMENTS. How often do we take the time to praise a student for some noteworthy honor or even for a small achievement? Not often enough.

Perhaps we could take a tip from some of the profit-making groups that have to provide recognition to their clientele. If they don't do so, they lose business. I'm thinking specifically of such groups as Weight Watchers and Dale Carnegie. A five-time joiner of Weight Watchers and a three-time joiner of the Dale Carnegie course, I had ample time to observe the process which takes people from losership to winnership. It is this: Any accomplishment, no matter how insignificant, deserves praise. A "land whale" loses a quarter of a pound? Fellow fatties clap and cheer. A stutterer paces and sweats in nervousness? Fellow speakers cheer and clap.

When will education free itself of unhealthy negativism? When will it laud students and build their selfconfidence instead of stripping it away? And what are we, as educators, doing to expedite the process? I'd like to know. I'd really like to know. Because bad news travels fast. And good news is often ignored.■

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