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ABSTRACT

As the field of educational technology developed, the field of library science became increasingly concerned about audiovisual media. School libraries have made significant developments in integrating audiovisual media into traditional programs, and are becoming learning resource centers with a variety of media; academic and public libraries are moving at a slower pace. An increase in cooperative activity between the library and audiovisual fields is apparent. In this information rich world, contemporary media provide information for the masses, yet there is reluctance to accept these forms of communication in the school and library. We need to ask not what audiovisual media and technology can contribute to the library, but what types of people are seeking what types of information and how successful they are in fulfilling their needs. We must ask ourselves how well prepared we are for a future of increased: (1) independent study; (2) need for meeting clients' needs; (3) knowledge of special contributions to learning by each type of media; (4) recognition of future development of technology; and (5) acceptance and use of a behavioral approach to community information problems. Library schools need to encourage originality, boldness, and flexibility for dealing with the future. (Author/KP)

The World of Audiovisual Education

Its Impact on Libraries and Librarians

Donald P. Ely

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To provide a context for this presentation, it is necessary to consider the relationship between the fields of library science and educational technology. The precursor of educational technology was audiovisual education (or audiovisual communications) which reached its peak of development during the 1955-1965 decade. The major thrust of the audiovisual movement was to provide a variety of resources and to assist individuals to use them appropriately. The impact of the programmed instruction movement in the 1960's, which was embraced by the audiovisual field, accelerated change in the field to include a comprehensive concern for the design of instruction. Currently educational technology is defined as "a field involved in the facilitation of human learning through the systematic identification, development, organization, and utilization of a full range of learning resources, and through the management of these processes. It includes, but is not limited to, the development of instructional systems, the identification of existing resources, the delivery of resources to learners, and the management of these processes and the people who perform them."(Ely, 1972).

While educational technology incorporates the use of audiovis al media, the media no longer dominate. As the audiovisual field was going through its metamorphasis, the field of library science was becoming increasingly concerned about audiovisual (or nonprint) media.

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For many years libraries had provided recordings and art prints and some more progressive libraries had established motion picture collections. But during the 1960's more librarians began to feel that their professional responsibilities included the acquisition and dissemination of information regardless of the medium in which it was stored. Consequently, libraries began to include a variety of print and nonprint media in their collections. Some special libraries already had collections of maps, slides, and music recordings. Some libraries which were almost entirely print oriented began to acquire microforms in a variety of formats. Since microforms required equipment for display some librarians felt that they were dealing with a new medium. This fact helped alert professionals to the idea that information can be stored and displayed in several ways.

Most of the significant developments in regard to the integration of audiovisual media into traditional libraries were championed by school libraries at first. Except for the specialized libraries in music, art and architecture, for which audiovisual media were already an integral part of a discipline, most academic and public libraries have only recently begun to consider audiovisual media as viable sources of information for patrons.

The current status of audiovisual media in libraries could be summarized as follows: school libraries are rapidly becoming learning resource centers with a variety of media in their collections; academic libraries are moving at a somewhat slower pace to incorporate nonprint media in their collections and public libraries are at the early stages of expansion to include nonprint media. Special libraries are unique in that they are somewhat more flexible in providing information for

a defined clientele and are more difficult to categorize.

The trends which are described here are written from the perspective of the United States. While there is some evidence to indicate that the same developments are occuring in other nations, the extent of change is somewhat less and the rate of change is slower in other countries. There are presently no comparative studies which describe country-by-country trends in the integration of audiovisual media within library collections.

Definition of Terms

The term, media, is often used to connote audiovisual media while its general definition in reality refers to media as a means for communicating information, which would include people and all printed materials. Nonprint (or nonbook) media has emerged as a sufficiently non-ambiguous term with the appropriate disclaimer - non (all that which is not). Audiovisual media is preferred by some but excludes certain categories of media such as objects, dioramas and machine readable data formats. In educational circles, the modifier, "instructional" or "educational" is often used. The term nonprint media will be used here because it has gained acceptance among librarians, even though audiovisual media seems to be a more descriptive term.

When referring to nonprint media, most librarians are talking about the products (sometimes referred to as "software" or materials). Individuals working in the library field are primarily concerned with the identification, acquisition, classification, cataloging, storage and retrieval of these nonprint materials. However, in the context of the learning resoucce center (formerly the school library) personnel

are often concerned with production of nonprint media and consultation about use. The school librarian has become a media specialist with an expanded job description.

Again, these developments are written from the perspective of developments in the United States but there is some evidence of similar growth in the more developed nations of the world - Japan, many of the European countries, Canada and Australia. There are some developing nations which have moved in the same direction through the efforts of UNESCO teams and specialists from other nations but there is no concentration of these efforts.

In exploring the status of nonprint media in any nation today, one would have to seek out persons in mass communication programs (primarily radio and television), in audiovisual programs (most likely support services) in schools, colleges, industrial training and military education and in libraries (where there is probably very little activity). If there is any research going on, it would be marketing research by the broadcasters and studies by educators comparing the effectiveness of one medium with another.

One of the difficulties in attempting to assess international and comparative developments in nonprint media is to locate the individuals who are working in this field. The field is not as clearly defined as librarianship. Professional training programs in audiovisual communications (educational technology) exist in only a few of the most developed countries in the world with an occasional small program in a developing country. Some professional library programs are beginning to develop courses in the nonprint area, but these are rare and tend

to be added onto a program in librarianship. Individuals who work with nonprint media do not often learn about these media during their professional training but usually on-the-job.

The personnel problem is further compounded by the functions performed by people who work with nonprint media. Some are preoccupied with developing good collections and making them available to users; others are more concerned with the production of media and still others focus on consulting with the users to help design programs or instruction which incorporate nonprint media. Some personnel are generalists who are concerned with the management of a program which includes the full range of media and includes such functions as evaluation, instruction, production, information storage and retrieval, design and logistics. There are also specialists who emphasize one function (such as production of media) or one medium (such as television). Technicians are necessary to assist in the production of materials (graphic artists, for example) and the maintenance and operation of equipment. The nonprint media personnel team usually includes clerks or aides who handle much of the day-to-day distribution work. When one attempts to determine the status of nonprint media activity, the functions performed by all the above personnel must be taken into account.

Evidence of Increasing Cooperation

Even with the difficulties in attempting to discover the locus of audiovisual activity in any country and to identify the personnel who are associated with it, there appears to be increasing cooperative activity between the library and audiovisual fields.

In the U.S., the Educational Resources Information Center (ERIC) Clearinghouse on Information Resources at Syracuse University is an amalgamation of the former Clearinghouse on Educational Media and Technology and the Clearinghouse in Library and Information Science. Its scope of operation states: "The Clearinghouse on Information Resources acquires and processes documents on research, development, delivery, and evaluation of information and instructional technology. It focuses on personnel, personnel development, strategies, systems, procedures, materials, and equipment used in the fields of information and education. Current areas include libraries; learning resource centers; information science; instructional design, development, and evaluation; systems analysis; community information systems; and instructional media, as well as strategies which flow from these topics: e.g., programmed instruction, individualized instruction, and information brokering. The Clearinghouse is also concerned with the delivery of information and instruction through media such as television, computers, radio, films, microforms, holography, and other audiovisual devices."

The elementary and secondary schools in the United States are going through a metamorphosis from print-oriented libraries to multi-media learning resource centers. As if to herald this new creation, the two major professional associations concerned with media in schools, the American Association of School Librarians and the Association for Educational Communications and Technology, jointly published Media Programs: District and School which presents standards for school media programs in the United States. Mergers of audiovisual education and school library associations in a dozen states have occurred.

At the tertiary level, learning resources centers have emerged at

most of the new, two year community colleges but the academic libraries at colleges and universities have moved much slower. The most common approach seems to be a separate department within the university library which is devoted to nonprint media. Peterson (1975) outlines the four major functions of such centers: instructional development, library, audiovisual services and nontraditional learning activities.

Public libraries are beginning to move to incorporate nonprint media. In a comprehensive report, Brown (1976) reports on nonprint media activities of 235 public libraries nominated by the states as being engaged in innovative uses of media. The study reports the nature of uses, and ways in which they appear to aid in the achievement of library goals.

Asheim (1975) expresses the sentiments of many professional librarians in regard to this new dimension of library services:

> We like to think that this new approach is not in conflict with the library ideal but a contemporary expression of it, utilizing the new tools at hand to accomplish what is implicit in the traditional objectives ... We see a new generation of library users coming up who are not so deeply wedded to the literary tradition, and understandably we wonder if we can communicate with them. But do not forget that today's and tomorrow's librarians are part of this new generation too, sharing with them their highly developed skills in the many new languages that are represented by recordings, tapes, films, and multimedia events.

A New Definition of Library

These new developments call for an expanded definition of library. Library is a function whose responsibility is to systematically collect and acquire information, classify it, store it and, upon demand, retrieve it and assist in adapting it to the user's requirements.

The words in this statement have been carefully chosen and it is likely that their precise meaning needs clarification.

LIBRARY - A FUNCTION (not place) WHOSE RESPONSIBILITY IS TO SYSTEMATICALLY (there must be a plan for acquisition related to the needs of the institution to which is is attached) COLLECT INFORMATION (information is used to include realia and nonprint materials) CLASSIFY IT (the system must recognize the requirements of the retrieval system) STORE IT (storage for retrieval purposes may require conversion to appropriate form) AND, UPON DEMAND (the act of identifying existence of a unit of information must be efficient and systematic) RETRIEVE IT AND ASSIST IN ADAPTING IT TO THE USER'S REQUIREMENTS. (This may involve the delivery of the original item, a facsimile reproduction -- this may be in quantity for class distribution - or a reproduction in a form that will permit it to be displayed in the most effective manner - a slide of a chart, table or graph, for example. It is reasonable that this function may also assume the responsibility of counselling clients with respect to effective methods of presentation.)

The Mediated Information World

We live, work and play in an information rich world. We often hear of "information overload" and no wonder. Whereever we turn we find radio, newspapers, magazines, television, film, books all competing for our time. A generation ago we were information poor; we had to actively seek out the resources which today pervade our society. At that time you might have said that we were experience rich and information poor. We gained much of our information from first hand experience. Radio and films were becoming more commonplace, published materials were much more scarce than they are today and television was still in the laboratory. Today, the situation is just reversed; we are information rich and experience poor. We seek out media for the experience

we have not had or wish we had. Wilbur Schramm (1975) provides a succinct overview:

> Twice in the last five centuries -- when printing came into use in Western Europe in the fifteenth century, and when film and electronic communication became widely available in the late nineteenth and twentieth centuries -- communication technology changed so spectucularly that it affected all human life. Printing made knowledge portable beyond the sound of a voice, and provided for it in a linear, verbal, abstract code. This code was so efficient that it made possible widespread literacy, public education, broad participation in politics, political revolution, the growth of science and industry, and an enormous widening of horizons. When film and electronic communication came into use, they provided a different code. The human voice could be recorded and transported rather than merely the printed symbols of the language, and the abstraction of print could be supplemented by the readily transmittable sights and sounds of reality. The effects of these developments on life patterns of people and society are readily apparent; but it is too early yet to assess their deeper impact. (p.3)

The paradox is that contemporary media provide entertainment and information for the masses yet there is a reluctance to accept these forms of communication in the school and in the library. The media are affecting the way in which we gather information and the way in which we spend our time yet we persist in limiting the format in which information is made available in schools and libraries.

This is an age of information, an age of communication and an age of technology. In such an age we must be aware of the "technological imperatives" since in an age of technology we cannot separate ourselves from the larger society in which we live, work and play. Snider (1972) provides a framework for consideration of the role technology has assumed.

1. Technology is "the systematic application of scientific and other organized knowledge to practical tasks." (Galbraith, 1967)

Technology is not about tools. It deals with how man works. The history of technology can be characterized as the story of man at work, may trying to make himself more effective.

2. Technology always becomes irreversible and pervasive once it has been introduced into a society and has shown some promise to serve a real or imagined human needs in that society.

3. Technology usually produces a confusion over human means and human ends. When technology makes it possible for man to do something, man does it, not always becuase it is necessary, but simply because it is possible. In the process, technology sometimes raises new moral issues related to longheld goals that can now be achieved with unimagined effectiveness. For example: How fast do we want to move across the face of the earth? For how long shall we defer death?

4. Technology is not simply the application of science to practical objectives. Technological developments often precede scientific work. James Watt's steam engine, for example, was efficiently running the mills of England for 75 years before a scientific explanation of this phenonmenon was forthcoming. Other examples of "pre-scientific" aspect of technology can be seen in the work of the Wright brothers, Thomas Edison, and to a somewhat lesser degree in the space programs.

5. Technology is amoral. In itself it is neither good nor bad, humane or inhumane. The morality of any technology is a function of the human use of human beings as that technology is applied. However, it is becoming increasingly

obvious that most new technology brings with it simultaneously both positive and negative potentials for mankind. It is also becoming obvious that some of this can be anticipated.

6. It is beneath the dignity of a human being to work vocationally in a total effort that can better be done by a machine.

7. As a new technology is being introduced into a society, it is virtually impossible for members of that society to understand the social changes brought about, and to be brought about, as a result of that new technology.

It appears as if we are caught in an inevitable tide of technological change. A first reaction is to say, "Stop the world, I want to get off." Some people have done that and have "dropped out" of the ongoing society. Others have collapsed under pressure and have said in effect, "If I can't beat them, I will join them" and subsequently get caught up in the tide. I don't believe either extreme is appropriate. We need to look squarely at the situations which confront us personally and professionally and ask whether they are <u>problems</u> or <u>opportunities</u>. If technology is to serve us we ought to embrace it when it relieves us of mindless and mundane routines; when it helps us to become more humane. When technology captures us, however, we ought to discover the consequences of yielding to an uncontrollable monster which makes us less humane. I have a button which reads, "Technology is the answer! But what was the problem?"

In translating this concern to the library, we can observe the reluctance of our patrons to accept some of the innovative approaches which have been tried in some libraries. Here are examples from the headlines of a variety of periodicals: "Libraries Widen Activities,

Sparking Debate on Purposes," "With a Little Luck You May Even Find Books in the Library," "Libraries Use Gimmicks to Halt Patronage Slide," and "Guess What the Library's Up to Now."

We need to ask not what audiovisual media and technology can contribute to the library but what types of people are seeking what types of information and how successful are they in fulfilling their needs. If an individual obtains the information he or she is seeking, it doesn't make much difference whether it is on a microform, a tape or in a printed format. If more graphic information can be provided by films, videotape or slides or more realistic information by recorded sound, the library ought to be able to deliver it. Consider the definition of library again:

> Library is a function whose responsibility it is to systemtically collect and acquire information, classify it, store it and, upon demand, retrieve it and assist in adapting it to the user's requirements.

There is little doubt that audiovisual (or nonprint) media have found their way into the contemporary library. The degree of acceptance and use varies with local circumstances. There is some question as to why these media appear. In some cases it may be an attempt by the library to be in tune with the times; in some cases it may be an attempt to provide new services to new audiences and, in some cases, it may even be in response to a perceived community or institution need. For whatever reason, nonbook media in libraries is happening and will continue to develop and grow. Consider several case studies.

Case Studies

Palos Verdes Library District

> Working under the premise, "If the public wants it, let them have it," the administration of the Palos Verdes Library Dis-

trict is providing patrons with information in all formats. The library loans 8mm films of original silent classics (Fritz Lang to Charlie Chaplin); 16mm sound films; audio cassettes and records covering Buddhist monks' mantras to Erica Jong speeches, as well as all types and manners of art reproductions. In order to massage the media, the library lends 16mm, 8mm, and slide projectors, has preview and meeting facilities, tapedecks and turntables, and camera equipment.

We are in the media and we also use the media. The library sponsors Saturday film matinees for children, evening documentary and feature films for general audiences and provides duplicate rental collections of popular rock music at 10 cents a day. Audiovisual staff has produced public spot announcements for broadcast on our local television stations. We also write press releases and articles for local newspapers, magazines, and radio stations. We have joined two film circuits to provide a changing collection of seventy 16mm films each month in addition to our permanent collection of 250. We serve an immediate community of 63,000 and also provide extended service to a metropolitan population of over 1 million.

In 1970, our first year of audiovisual services, we reached an audience of 230,000 with 16mm films. In 1974 we reached 700,000. Similarly our circulation of recordings has gone from 50,000 to 108,000; our art reproduction circulation from 400 to 4,000; our 8mm film audience from 4,000 to 64,000. (Brown, 1976 pp. 114-115)

Santa Fe Public Library

Media services of the Santa Fe Public Library (SFPL) began in late 1974, and they have grown rapidly in response to local demand. Nearly all of the library's media hardware may be loaned to users (including videotape recorders, Super 8 cameras, various types of projectors, still cameras, audio tape recorders, and more). Borrowers simply sign a form acknowledging responsibility for the equipment and agreeing to pay up to $550 (which covers deductible costs of an insurance policy) for any repairs that may become necessary. Otherwise, there is no charge. The length of the borrowing period is flexible, and nearly always for whatever time is needed to complete the project for which the equipment will be used.

SFPL has a number of video cassettes (and funds to buy more) which, because of the limited availability of video cassettes systems in the area, are now used for reference purposes (In the library) only. The collection includes both professionally produced and local programs. Included among the latter are a number of interviews with local people, titled "Oral Portrait."

Local media production activities of the library now center on involvement of members of an area high school videotape club who cooperate in the production of a number of TV spots promoting library functions and services. Similar plans are being worked out for the production of radio shows. Local students and adults are often helped in producing a variety of films, videotapes, audiotapes, or filmstrips - including some on such everyday subjects as how to change a bicycle tire, correct use of a baseball bat, and others. A Super 8mm film production workshop - aimed chiefly at young students, an adult videotape workshop, and filmstrip and slide workshops are planned for later in the year.

Other media projects in the planning stage include: 1) a public access photographic darkroom - to be financed, paritally through use and cost-of-materials fees; and 2) film study programs on a weekly or monthly basis, for adults and children. (Brown, 1976 pp. 120-121)

Chicago Public Library - Study Unlimited

For the past two years citizens of Chicago have had the opportunity to earn college credit, prepare for the College Level Examination Program (CLEP) or the General Education Development test (GED), or simply study for their own personal or professional enrichment through an independent study program called Study Unlimited. This open learning program is cooperatively sponsored by the City Colleges of Chicago and the Chicago Public Library. Through their combined resources over 1,800 students have been served in this two year period. Of these students approximately 800 were registered for college credit, 380 for GED only, 150 for CLEP preparation, and the remainder for enrichment or for supplemental study.

Instruction is given through telecourses recorded on video cassettes. Approximately 20 college credit courses and the GED course, Your Future Is Now, have been used so far. Hardware consists of both Japanese Victor Corporation (JVC) and Sony playback units and monitors. Dubbing is done by the college on a video cassette custom-built duplication system.

The chief features which distinguish the Study Unlimited program are the joint sponsorship of the program involving a public library and community college, open enrollemnt, self-pacing, easy access (five library locations open 12 hours a day), independent study, and combined library-college support system for assisting the student.

Professional librarians and adult education personnel administer the program. The librarians administer the centers, enroll the students, administer the tests, maintain student files, and integrate total library services with the formal programming. College personnel provide instructional services, software, hardware and its maintenance, and take

the leadership in providing supportive services. Working together, study clinics are held for students to aid them in their study, a video cassette series has been developed in Independent Study Skills, diagnostic tests are being prepared to guide students in preparing themselves for CLEP and GED exams, and a newsletter is published to improve communications for all persons involved. Monthly management meetings including college and library personnel assist both groups in adapting to new roles called for in the operation.

Future plans include expanding the number of centers and breadth of the curriculum. Hopefully, future curricula will be broken down into more versatile modules and delivered by a variety of means, e.g., audio cassette, film loops, tutorials, and independent learning contracts.

Major problem areas which do not yield to easy solutions are low completion rate for college credit students, registration procedures amicable to open registration and self-pacing, building of bonafide cooperative decision-making processes within both institutions, role ambiguity for librarians assigned specifically to Study Unlimited, and the high cost per student in offering a completely mediated autonomous study program. (Brown, 1976 pp. 198-199)

College of DuPage

In surburan Chicago, the College of DuPage is a two year post secondary community college. The Learning Resources Center shelves all books and nonbooks together and offers a wide range of resources such as books, audio tapes, pictures, videotapes, slides, and films.

To give some idea regarding the balance of the collection, as of September 1977, there will be 103,000 books, 21,000 microforms, 10,000 audio materials, 45,000 slides, 1100 films and videotapes. Other materials in the collection include film loops, filmstrips, maps, pamphlets, overhead transparencies, kits, newspapers, periodicals, study prints and art prints. Services include a human resources exchange; loaning audiovisual equipment (including cameras, calculators and typewriters) along with the more traditional projectors and audio equipment; production services, media workshops, computer services and a radio station.

Of course these are examples of the best libraries which have incorporated nonprint media. There are many more - some less ambitious and others more extensive. These are examples from the United States. Similar developments have not occurred in every nation around the world but there indications of activity in the more highly developed nations and attempts to "leapfrog" the normal time of evolutionary development in some of the less developed nations.

Before we are carried away with the glamour and glitter of exotic new resources for libraries, let us pause to ask those ever critical questions: Who is being served? What information requirements do they have? How well are they being met now?

The Future

If we can proceed on the assumption that, despite financial and philosophical problems, nonprint media will play an increasingly active role in library programs, the trends which Brown (1976) gleaned from his study are consistent with my personal observations.

1. Increased independent study by adults... lines between formal-in-school education will be blurred in the future even more than they are at present. Individuals will turn to or away from education - much as they wish and as circumstances of their lives, their jobs, their aspirations require. Quite likely, too, there will be increasing acceptance of the concept, as well as the practicalities, of "universities without walls" as approved avenues to personal improvement, degrees, and diplomas. Such activities will place new responsibilities upon libraries and lead to their further involvement in providing both print and nonprint media resources and services to meet them.

2. Increased need for librarians of all types to meet clients "on their own ground." Reading abilities, backgrounds, experiences, interests, and "learning styles" will affect the development, choice, and use of media of all types, alone or in combination, to meet individual needs.

3. Increased knowledge of special contributions to learning

to be made by each type of media. Library professionals will be expected to be able to use that knowledge in aiding the selection and planning the use of various media resources to help clients achieve their goals.

4. Increased recognition of the fact that communications and information technologies are far from being fully exploited. Predictions emphasize that much more is to come. For example, even our present capabilities for linking together entire communities - already done on a somewhat modest basis - could encourage a host of entrepreneurial efforts related to electronic information services, many of which could be supplied through public libraries, such as: 1) specialized or general electronic newspapers, 2) media supported adult education correspondence study (interactive or noninteractive), 3) computer aided independent tutoring, 4) transmitted for a fee entertainment (plays, films, etc.), 5) community information services (facts, dates, hours, contents of forthcoming events, locations of data-related services, weather data, road conditions, and many others), 6) access to library resources through electronic browsing, dial in audio or tape banks, or keyboard conversations with "librarian computers," 7) video screen or "hard copy" paper printouts of library data at client discretion, and 8) "frame grabbing" (a procedure offering clients opportunities to store single pictures - as from a TV program - for later reviewing). Possible implications, in its effect upon libraries, of one invention only - the revolutionary video disc - are difficult to envision. But it seems clear that if or when this device if perfected and marketed, it is likely to transform the library's present modest participation in the purchase and circulation of nonprint media.

5. Increased acceptance and use of the systematic, behavioral approach to the solution of community information problems. Overly simplified, this approach recognizes the need to express carefully, and in measurable behavioral terms, both the short- and long-range goals a particular library program seeks to achieve. It gives special attention to changed behaviors desired to be effected in target groups, and to criteria to be used and data to be gathered to measure achievement of those changes. Contributions of a public library toward such achievement expressed as a cost/benefit ratio (relationship of input dollars to the value of proved social benefits derived from the changes), would be critical in the allocation of funds for continuing support of the institution.

From these trends we must hold up the mirror and ask ourselves how well prepared we are for such a future. Are we going to sit back and

let it happen to us as passive observers or are we going to help create that future as proactive participants? If we do not accept the responsibility for inventing the future we want to live in, we deserve the future we receive.

Let me close by personalizing the challenge to you and to future librarians who will be prepared in professional library education programs.

Would you think with me of the people you consider to be great contributors in this rapidly changing world - the men and women who have achieved their human potential, who symbolize women and men at their best. How are they different from the rest of us?

Is it their accomplishment in college? Of course not. We all know of graduates from the same college, with the same cultrual and social backgrounds, who have taken the same courses and received similar grades ... one is a leader, an innovator and a beautifully functioning human being. The other doesn't really make it in today's hectic world.

As you think about the differences, do you find, as I do, that often the differences are in the area of human and personal characteristics - of attitudes, appetites and styles?

Apparently, knowledge, however important, is simply not enough. It is far easier to get people to absorb new knowledge than it is to get them to alter their conclusions. Most of us have an incredible talent for processing new facts in such a way that our prior conclusions remain intact. Particularly with modern technology, I think we will far more easily solve the problem of transmitting to people the vast information explosion than we will the crucial Human Styles that the future

will require.

Increasingly, the really successful leaders I see have a real appetite for the future. They welcome it. Embrace it.

They've learned how to learn. In a short time, they grasp the essentials of a new situation. They create new solutions to new problems with gusto. Others, equally intellignet and "educated" don't do so well. They react defensively ... "It can't be done." "It's cloud nine." They react historically. "We've always done it this way."

Can an appetite and a style for innovation be taught in library schools? Can it be simulated and stimulated? I think so. I certainly hope so. It apparently is one of the very important things that remains after we have forgotten about what we learned.

Marshall McLuhan tells us that we are prisoners of a kind of invisible environment ... the outlines of which are not clear until we move into a still newer environment. The McLuhanism that captures this concept best for me is a simple one: "I don't know who discovered water, but I'm quite sure it wasn't a fish." This new breed of person we need for the future cannot be a prisoner of his environment, for he must often shape the new environment.

The librarian can easily be isolated within his/her occupation, and in his/her own way lives in an "ivory tower," more remote from realities than many an academic person. Part of the shift we need from the "specialist" to the "generalist" is getting our leaders and citizens to "cross-pollinate" as it were, with the cultural community, the academic community, the non-surburban community, the young community, the scientific

community, the world community.

Here, time is our enemy. More and more of our working time is spent in monumental trivialities which bear only the dimmest relationship to the work that we are really paid to do. By the time we extricate ourselves from these irrelevancies and get down to the business at hand, we are commonly too tired to cross-pollinate with anyone at all!

Let us assume our future librarian senses the outside world. But what if this person is familiar with the outside world but is a stranger to personal feelings, uncomfortable with one's innerself, uncommunicative with other people?

I don't know whether there is some kind of perverse, or inverse law or what, but as technology and urbanization move us into closer and closer physical proximity, we seem to become more and more emotionally distant.

In short, can a person not "humanized" be said to be educated?

Can we help the future society by helping create the kinds of people who are good environmental sensors, good cross-pollinators, good listeners, aware people?

At this point, you may be saying, yes, I agree, and always have, the future needs and deserves a human being with some new styles, new appetites, new dimensions. Yet, it seems clear to me - even through the fog - that the basic system of rewards and punishments we have in library education does not particularly encourage those traits and tendencies I think we would all agree will be increasingly important in the future.

For the world of the future - and the very near future - will call for such traits as originality, boldness, and flexibility. Whereas, I

wonder if many of our library schools don't unconsciously encourage conformity, timidity, and rigidity.

In a real sense, librarians have to become pioneers again. Not pioneers, as their ancestors were, in the forest primeval; but, even harder, pioneers in the technological jungle, where no one really knows what tomorrow will bring, where developments are so rapid, and changes so cataclysmic, that only the sharpest and most sensitive will survive and flourish.

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