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

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

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

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

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

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

References

Bronfenbrenner, U. Who needs parent education? *Teachers College Record*, 1978, *79*, 767-787.

Breivagel, W.F. & Packer A.B. A new role in education: Parent education specialist. *Action in Teacher Education*, 1980, *11*, 39-42.

Buck, J. Sure, you remember radio. In A. Kerschner & L. Kerschner (Eds.) Radio and television: Readings in mass media. New York: Odyssey Press of Bobbs Merrill, 1971.

Canadian Radio and Television Corporation. FM radio in Canada: A policy to ensure a varied and comprehensive radio service, 1975.

Clearinghouse on Development Communication. Health education radio dramas: Sri-Lanka, 1980.

Crooke, J.N. & Glover, K.E. A history and evaluation of parent education. *The Family Coordinator*, 1977, *26*, 151-158.

Davis, D.K. & Baran, S.K. *Mass communication and everyday life*. Belmont, Cal.; Wadsworth 1981.

Dominick, J. The portable friend: Peer group membership and radio usage. *Journal of Broadcasting*, 1974, *18*, 161-179.

Dubanoski, R.A. & Tanabe, G. Parent education. A classroom program on social learning principles. *Family Relations*, 1980, *29*, 15-20.

Foster, E.S. *Understanding broadcasting*. Reading, Mass.: Addison-Wesley, 1978.

Alan Guttmacher Institute, *11 Million teenagers: What can be done about the epidemic of adolescent pregnancies in the United States*. New York: Planned Parenthood Federation of America, 1976.

Health Promotion Directorate. Guidebook on parent education resources in Saskatchewan, 1979.

LeMasters, E.E. *Parents in modern America*. Homewood, Ill.: The Dorsey Press, 1970.

McLuhan, M. Radio: The tribal drum. In A. Kerschner & L. Kerschner (Eds.) *Radio and television: Readings in mass media*. New York: Odyssey Press of Bobbs Merrill, 1971.

Mendelsohn, H. The roles of radio. In A. Kerschner & L. Kerschner (Eds.) *Radio and television: Readings in mass media*. New York: Odyssey Press of Bobbs Merrill, 1971.

Robbins, R.C. The magnificent music box. In W. McDaytor (Ed.) *A media mosaic: Canadian communication through a critical eye*. Toronto: Holt Rinehart, 1971.

Rogers, E.M. & Adhekarya, R. Diffusion of innovations: An up-to-date review and commentary. In D. Nimmo (Ed.) *Communication Yearbook 3*, New Brunswick, N.J.: Transaction Books, 1979.

Schramm, W. The nature of communication between humans. In W. Schramm & D.E. Roberts (Eds.) *The process and effects of mass communication*. Urbana: University of Illinois Press, 1974.

Segal B. The 1979 world administrative radio conference: International negotiations and Canadian telecommunications policy. Ottawa: Government of Canada, 1980.

Simon Fraser University Telecommunications Research Group. A study of emergence of new forms of local programming within the Canadian broadcasting system, 1978.

Toffler, A. *The third wave*. New York: William Morrow, 1980.

Williams, F. Communication in the Year 2000. In D. Nimmo (Ed.) *Communication Yearbook 3*, New Brunswick: Transaction, 1979.

In my Opinion

Illiteracy and the New Technology

Charles Ungerleider

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

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

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

The invention of movable type and the spread of literacy to large numbers of people diminished the power of the few literate people who previously held a monopoly on reading and writing. Those who learned to read were able to examine the ideas of the church and government. In reaction, church and government made censorship laws in an attempt to maintain control over what people thought and what they believed. These attempts to control information and ideas only slowed the changes which literacy had brought.

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

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

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

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

It is possible to direct the sophisticated in-

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

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

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

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

As our society places increasing emphasis upon information transmission, storage and analysis systems schools must see technological literacy as part of their mandate to produce citizens who can read, write, compute and think critically. Schools should direct their energies toward producing a more unified curriculum which reflects the interrelatedness of knowledge.

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

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

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

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

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