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ABSTRACT

Featured in this issue are the English translations of two speeches delivered to graduate students in educational technology at Pontificia Universidade, Porto Alegre, Brazil. Henry Ingle defines educational technology in the traditional as well as modern sense, describes its essential elements, and discusses situations in which the use of technology is most appropriate and efficient. He also provides a formula for failure in educational technology developed from practical experience. Thereza Penna Firme discusses the role of television as a technology in the lives of children, comments on the importance of the human element in technology, and emphasizes that all educational messages should be simple enough to be understood, relevant, and stimulating. Also in this issue is a description of an experimental audiovisual system called the electronic or tele-blackboard, which transmits scribosonic (combination of speech and writing) signals. (Author/STS)

WHAT IS EDUCATIONAL TECHNOLOGY?

Instructional Technology Report. June 1975

INSTRUCTIONAL TECHNOLOGY REPORT

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Henry Ingle, Program Advisor to the Information Center, spent a month's time during March and April in the southern part of Brazil working with the educational television staff of Channel 7 in Porto Alegre, Rio Grande do Sul. Channel 7 went on the air on March 15th transmitting both educational adult evening television programming and in-school broadcasts in Science and Mathematics to 5th and 6th grade school children in about 35 municipalities around the metropolitan area of Porto Alegre. The Director of ETV Channel 7 is Dr. Paulo de Tarso da Rocha. The station is under the auspices of the Secretary of Education and Culture and operates out of the Pontificia Universidade Catolica do Rio Grande do Sul in Porto Alegre.

During his stay in Brazil, Ingle visited other educational television and radio projects and delivered the inaugural lecture of a one year's course at the Pontificia Universidade designed to train people at the Masters' level in educational technology. His lecture was entitled "A Tecnologia Educacional é a Solução — Para Quê?" or "Technology is the Answer — To What?".

Thereza Penna Firme, consultant to the Academy for Educational Development, also participated in the opening address, delivering a short commentary entitled "The Message" which emphasizes the role of television as a technology in the lives of children.

We have taken the liberty of translating both of these oral presentations into English for the readers of Instructional Technology Report. Your comments and reactions would be appreciated.

"A TECNOLOGIA EDUCACIONAL E A SOLUÇAO — PARA QUE?"

Henry T. Ingle
Delivered in Porto Alegre, Brazil, March 25, 1975

What Is Educational Technology?

Traditional sense — the most common use:
refers to the communication media born out of the electronic revolution which can be used for educational purposes, either alone or in combination, along with teachers and textbooks. These media include radio, television, film, programmed instruction devices, computers and general audio visual aids; their application to the teaching-learning process tends to be associated with machines and electronic apparatus.

Modern sense:
more recently conceived definition goes beyond those aspects relating to an apparatus or machine. It emphasizes educational technology as an integrated and systematic method of designing, planning, implementing and evaluating the total process of learning and teaching, in terms of specific objectives, research information on human learning and the process of communication, and utilizes the best media, human and technical, to reach the learner with the most adequate information, knowledge and stimuli. That is to say, technology is seen as a *means* to arrive at an *end*. It is an ongoing process requiring varied types of media and expertise. To date, there are very few efforts in the use of educational technology which emphasize this last definition. I hope that in this course we will come to know why that is so and at the

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A MESSAGE ON THE UNIQUENESS OF THE HUMAN ELEMENT IN TECHNOLOGY

Thereza Penna Firme
Delivered in Porto Alegre, Brazil, March 25, 1975

Children of today have never seen a world without television! Recent studies, made in countries around the world, indicate that before entering school a child normally has seen 4,000 hours of television. As citizens of an electronic age, they respond to an audiovisual stimulus in a special way, which is different from their response to a written stimulus.

For this reason, today's teachers cannot ignore the instruments of the electronic age if they hope to communicate effectively with a younger generation that views television, radio and film as special means of communication.

However, within the school, television cannot lend maximum services, if it is not incorporated into the educational system as has been the case with textbooks.

The instructional objectives are the same in a classroom with television or without television — the teleprofessor prepares his classroom, gathers materials and presents the material in a manner which is clear, succinct, logical and attractive. The one big difference is the fact that the tele-teacher can use equipment and precious visual resources to which the classroom teacher normally does not have access. This can make a difference for the learner.

The classroom teacher is the leader of the process — he programs his classroom, using technological resources to do that which they best do, and thus frees himself to

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SELMA DUBLIN, FIRST ICIT DIRECTOR, RETIRES

The Information Center on Instructional Technology announces the retirement of its Director, Selma M. Dublin. She and her husband Jack, who has also retired, have purchased a trailer and are presently touring the country. Near the end of the summer they will reach their final destination, Seattle, Washington. Two sons live there and a third son is in the city once a month on business. We wish them well on the journey and the very best in their new careers.

Selma has been with the Information Center since its beginning when the first *Instructional Technology Report* newsletter explaining the Information Center's educational technology handbook and the film on ETV in El Salvador and Niger was issued. From that humble beginning, Selma, through her experience, energy, enthusiasm and dedication, has helped put the Center on the map. One of her overriding concerns was to find ways the Information Center could continue improving its services on a personal basis to those people in the field of educational technology and related areas in Latin America, Africa and Asia. From all indications the Information Center has been doing this, thanks in large part to Selma.

As all the people who have met her or have been in correspondence with her know, Selma has been a most helpful and true friend. It was a very sad day when she left, because a wonderful person and first-rate colleague is gone.

The Information Center's new Director is Jonathan Gunter, who has just completed work on his Ed.D. in educational media and nonformal education at the University of Massachusetts. While at that institution, Mr. Gunter helped develop educational games and radio programs for use in rural Ecuador. He comes to us after completing the *Status Report on 8mm Film Technology* under contract to UNESCO.

The Information Center staff plans to take advantage of this change in staff in order to experiment with some new approaches to communications with our readers. You will notice some changes in emphasis of our report in the coming months. We will welcome your comments.

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"A TECNOLOGIA EDUCACIONAL"

same time, we will reach a better understanding of the use of educational technology as an integral element in the teaching-learning process. Technology, in and of itself, is not the answer.

Educational Technology and Its Essential Elements

Educational technology viewed from the latter perspective consists of the following elements:

1. a clear identification of the educational problems that one seeks to resolve

2. a good understanding of the audience that will benefit from the given educational programs. What are their needs? Their aspirations? How can they be involved in developing the program?

3. the specification of educational goals and objectives which one is pursuing

4. the establishment of priorities to which attention will be given; not all aspects of a problem can be solved at once

5. the consideration of various alternatives for solving the educational problem in question

6. the specification of the necessary financial, physical and human resources which are prerequisites to the pursuit of certain educational goals and objectives

7. the delineation of the message or content that underrides the stated objectives and goals

8. the introduction of a systematic way for maintaining contact and receiving "feedback" from the persons designated to receive the message and those persons sending the message

9. the development of a system to evaluate the entire process aimed at solving the problem, including the prescribed media; this is essential in order to continuously revise the process and better assure its overall effectiveness.

These are all elements which are implicit in the definition of technology as viewed from the more modern perspective; it is a process which comes to life in the hands of people. Hence, human resources represent an important element in the successful application of educational technology.

The Importance of Human Resources

There is an important relationship between the ingredients that make for success in educational innovation and the people who implement a given program for change. Besides the need for money, equipment, physical space and program materials, there is the need for *human resources*. Included in this need are the people who plan the project; those who administrate and implement it; those who develop the program and instructional materials; and those who receive and use the materials. All require training which is at the same time both specialized and general. For this reason this specialized course in technology is of great importance. Technology is neutral and only functions in an effective manner when the human element is prepared to use the technology in the most creative way, exploring its full potential.

Why Use Educational Technology At All?

Problems that do not lend themselves to conventional solutions often are ripe targets for the use of technology. However, we first should proceed from the point of specifying what must be done before we begin specifying the technology or communication medium that will be used. Technology may well be the answer — but we need to think in terms of the question first.

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"A TECNOLOGIA EDUCACIONAL"

Technology potentially can be utilized in various ways and for different ends — but it is most efficient when used as an element within a system devised for solving those problems that do not readily lend themselves to conventional solutions; that is, more teachers, more physical space, a longer school day, etc.

In general terms, educational technology can be most helpful in handling problem areas associated with qualitative and quantitative educational improvement. Educational technology and communication media — when planned and integrated into a systematic change process — can have a beneficial impact on education, whether it be in the sense of qualitative change (improvement of the quality of an educational system) or quantitative change (providing an opportunity for more people to receive instruction useful to their own lives and for the good of the society).

For example, in places where there are no schools, the use of communication media in an educational technology context probably can provide schooling and relevant information more quickly and less expensively than those conventional solutions enumerated above.

I would like to end this afternoon's session with a formula or set of instructions that constitute a sure guarantee to make educational technology *fail*. We know little about what makes for good use of educational technology but we know a lot about what makes for bad use. This formula has been developed from practical experiences in the use of educational television and radio around the world. They are things we *should not do*, but somehow or another, either for political reasons, the lack of time and planning, or financial expediency, we always wind up doing. Perhaps we can take these negative experiences to develop more positive experiences in the future.

Educational Technology — A Formula For Failure Developed From Various Practical Experiences

1. *Think technology first: that is, buy the necessary equipment and electronic apparatus* first and make sure that they function well. Once this important phase is completed, you can then focus your attention on how the technology will be used.

2. As a general rule *technology* in and of itself *can do the job*. It is self-sufficient. It does not need much in the way of complement or support materials and resources. It is powerful enough to generate the necessary changes merely by its introduction and generally without too much difficulty.

3. Technology *can solve all your problems*. Place your trust in it, never doubt it. After all, what can be more indicative of modernity and development than the use of media and technology.

4. *Master the production techniques and the operation of the equipment first*. Things such as program objectives, content, and audience needs will come later as a result of the production techniques employed, and with hardly any difficulty.

5. *Leave the evaluation of an educational technology project for the last possible minute*, and then only do it, if time and money permit. Your primary concern in using technology must be the development of creative programs and materials. Don't let artistic inspiration become weakened by scientific research and analysis.

6 *Don't be concerned with the quality of the message* that the technology will transmit. The audience is generally naive and not knowledgeable and almost anything will satisfy them.

7. Don't concern yourself too much in getting to know the audience that will be using the technology. Good instructional materials can serve everyone, adults as well as children. *You need not differentiate among the target audience.*

8 Don't pay attention to criticisms from the audience. After all, you are the communications expert and your job is to prescribe what is best for the target.

9 As a technologist, your principal concern is to produce and transmit beautiful programs and materials. How they are received and used is not your responsibility. Let the classroom teacher be responsible for everything that happens once the student receives the message. This is not your concern.

10. Don't spend too much time consulting with teachers and educators before or during the process of introducing educational technology. Educators generally know little, if anything, about technology; they tend to be negative towards it anyway; they talk too much; and they almost never reach a decision. And in the final analysis, decisions must be made quickly when working with technology. There is not much time for discussion. Technology demands quick action: Time is money; don't waste it needlessly.

11. An educational technology project should have complete autonomy and independence from the educational and cultural entities which it will be serving. Continued contact with them can be stifling and overpowering and only wastes time that can better be used in the production of materials and programs.

ELECTRONIC BLACKBOARD

Summary by Lois Joy Lester

The teleboard, tele-blackboard or electronic blackboard is a new audio-visual system that was developed by the Institut Teknologi Bandung, Indonesia, and the Technological University Delft, the Netherlands, in order to provide an inexpensive, and well constructed educational broadcast system. It was demonstrated before President Suharto in Djakarta, Indonesia on November of 1971. The system is in experimental stages in Indonesia but is being used successfully in many schools in the Dutch province of Freisland.

The teleboard is a narrow-band scribonsonic (combination of speech and writing) system that was developed to communicate simultaneously the written word, the spoken word, and particular visual images. The teleboard, in its simplest form, consists of a writing tablet, converter and television. A regular piece of paper is placed on the writing tablet and written on by a normal ballpoint pen, which is affixed in a holder and connected to the writing tablet with a cable. The tablet is a grid consisting of "X" amount of horizontal lines and "Y" amount of verticle lines. The grid coordinates, where the pen contacts the tablet, form a digital signal, which identifies the relative position of the pen on the grid. This digital signal is converted by the converter into an analog signal which is compatible with normal television signals and then is transmitted.

Speech and writing can be combined into one scribonsonic signal and simultaneously transmitted to a receiving system or can be recorded on a recorder for transmission at a future date. The receiving system, i.e. radio and television, splits the narrow-band signal (scribonsonic) into distinct audio and visual signals. The scribonsonic signal can be transmitted across long distances over telephone circuits, sound broadcast transmitters, and television transmitters (up to 30 signals simultaneously).

The teleboard can be an inexpensive educational tool in that it has low-software and low-hardware costs, can be operated from simple sound-studios, and requires only the employment of a few trained technicians. In addition, programs can be recorded and transmitted to several schools that are supplied with a television set and a converter. The signals can be transmitted over a vast area of land by the use of only one or two short-wave sound broadcast transmitters; the use of a broadcast satellite is not required. The teleboard facilitates teaching in that the paper tablet used with the system can be prepared prior to the broadcast and then simply transmitted at the time of the broadcast. Therefore, the teacher can concentrate her efforts on presenting a motivational lesson without having to consistently think of content. Finally, the teleboard is quite flexible in that the information being transmitted can be erased, wiped off, and/or colored.

Despite the above positive features of the teleboard, it has several disadvantages. It does not show moving pictures which at times are useful in dramatizing the lesson. Also, pictures are not necessarily communicated true-to-form, but merely represented as a semblance of reality. Furthermore, the teacher needs to be completely familiar with the subject matter and capable of organizing the material in such a way as to be able to write on one tablet after another as each is completed. Finally, there is an apparent lack of a communication link between teacher and student because the teacher's face is not represented on the teleboard.

Nonetheless, the teleboard has the potential of being a most valuable teaching aid in education in that it offers an inexpensive way of transmitting varied types of messages over long distances. It can provide relatively cheap "radio-graphic" television service to countries who find the cost of television quite out-of-reach.

TELEAC, the television education service at P.O. Box 2414 Utrecht, Netherlands, is using the electronic blackboard to incorporate the written information and graphics into television programs. To obtain additional information about the teleboard write to: Prof. dr. ir. J.L. Bordewijk, Technische Hogeschool, Delft, Afdeling der Elektrotechniek, Mekelweg 4, Delft 88, Netherlands.

The following materials were used in the preparation of this article:

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Instructional Technology Report, published bimonthly, is the official newsletter of the Information Center on Instructional Technology. The Center serves as an international clearinghouse for materials and information on important developments in the use of technology for improving education around the world. The Center is operated by the Academy for Educational Development, a private non-profit organization, and is supported by the Bureau for Technical Assistance of the U.S. Agency for International Development.

FEEDBACK

Here are some unsolicited comments that the Information Center has received on its publication. Communication Media and Technology: A Look at Their Role in Non-Formal Education Programs. by Henry T. Ingle. If you wish to comment on this or any other ICIT publication, we welcome your responses. Your reactions help us assess the usefulness of our material and give us guidance for future publications.

We were impressed by the pamphlet. Mr. Ingle has given a quick overview of an extremely varied field. His brief tidbits are just enough to whet the appetite for information about programs and reports in our fields of special interests, and his bibliography lets us know how to satisfy that appetite.

James C. Lange
University of Ghana

This book gives an excellent summary of non-formal education and the technologies available. I know that it is outside the province, but it seems as if factors like field worker training and follow-up, i.e. the ways in which these technologies have to be integrated into an effective total plan ought to be dealt with.

Mrs. Abigail Krystall
Research Fellow
Bureau of Educational Research
University of Nairobi

Undoubtedly this book holds great interest for those preoccupied with the problems of education.

To me in particular, as I am one of those greatly interested in education, the up-to-date information which this booklet provides, is of great importance, and I would venture to say that more of its kind are needed.

Rosendo Chavarria
Fundacion General Mediterranea
Madrid, Spain

I recently received a copy of your publication, "Communication Media and Technology: A Look at Their Role in Non-Formal Education Programs." I am really impressed with what to me is the best overview of the role of media in developing nations that I have seen. I was particularly pleased with the excellent bibliography. We certainly appreciate this and the other work that the staff of the Information Center is carrying out.

Dennis W. Pett
Director of Instructional Services
Audio-Visual Center
Indiana University

It is most heartening to find the ever-increasing seriousness with which the audio tape technology in general and the cassette in particular is being treated. There is an excellent and very useful contribution included in the booklet, "Communication Media and Technology: A Look at Their Role in Non-Formal Education Programs," by H.T. Ingle. Apart from the more common and obvious advantages, Ingle draws attention to:

a. The increased credibility of a message which is locally produced.
b. The most intimate subject matter can be dealt with explicitly . . e.g., family planning matters.
c. The reverse side of the cassette could be used to feed back answers, responses and questions.

Ingle also lists some well-planned and researched cassette projects. . . Ingle considers the best documented use of audio cassette technology to be "Radio Mensaje", developed by Father Barriga who worked near Quito, Ecuador.

ACTION Newsletter
World Association for Christian Communication
March, 1975

Have just had a first look at "Communication Media and Technology: A Look at Their Role in Non-Formal Education Programs" (a long title for a succinct work). I regret it omits film entirely and doesn't mention, for example, some of the work instituted in this field with Super 8 film, especially by the Canadian National Film Board in Ghana using Super 8 films to aid family planning efforts.

The National Film Board has also done some rather good work to aid cultural reinforcement, I suppose one could call it, among Eskimos in the Canadian Arctic using simple Super 8 film equipment.

I have no special axe to grind for either Super 8 or the N.F.B. but their work in these areas is, I think, of note in this regard.

I might mention that we are also doing a number of adult education programs — one for the unemployment — to help them.

Joseph Koenig
International Cinemedia Center Ltd.
Montreal, Canada

The Information Center: An article on the uses of film in innovative educational programs will be featured in an up-coming issue of Instructional Technology Report. We would appreciate hearing from our readers about such projects for inclusion in the article. If material is available we would be happy to receive it.

Thank goodness for the Information Center to keep me in touch with happenings out there in the rest of the world! What with teaching classes, directing our instructional development center, and the thousand and one other byways of academia, I can get to feeling pretty submerged.

One of the finest enlightenments to come along recently was Henry Ingle's bulletin on media in non-formal education. It synthesized beautifully a great deal of fugitive literature which should be of great practical applicability both abroad and even here at home in the new "open learning" efforts.

Henry's publication will surely be of great interest to the foreign students in my basic audiovisual course. . .

Michael Molenda
Assistant Professor
Indiana University

I am very grateful to Henry T. Ingle for writing such an excellent and useful bulletin. I hope you translate it into Spanish and Portuguese to multiply its usefulness among us natives.

There are only two points I would like to comment, that may be considered in a future issue of the bulletin:

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FEEDBACK

1. Critical view of educational technology

As we all know, educational technology is a product of Skinnerian thinking and practice. It is based also on system theory and system building. Its main focus is the establishment of "instructional objectives" and the design of an adequate engineering of behavior. It looks perfect.

However, we must be aware of the dangers of pushing this model too far. As you know, as important as "instructional" objectives, or more important than them, are "expressive" objectives, those which do not expect the student to learn a previously determined bit of knowledge or operation, but which expect the student to be himself and to interpret the world as he sees it and to change the world as he dreams to do it.

Briefly, I think Henry's work should go a little deeper into a critical analysis of educational technology.

2. Respect for folk media

Here again, I think Henry Ingle became too enthusiastic about the discovery of the potentials of folk media for instrumental information and persuasion. This is typically North American and should be viewed with alarm, to turn into pragmatic use what originally did not have a pragmatic intention, but an artistic or escapist purpose.

Life is too short, you see, to live it only for practical purposes. Beauty and phantasy are also necessary and particularly so for people who suffer and are oppressed. I am sure that Henry, who is evidently a humanistically oriented person, will recognize the dangers of invading folk media with utilitarian messages.

Other than those points, the bulletin is useful and well-intentioned.

Juan Diaz Bordenave
Agricultural Communication Specialist
Instituto Interamericano de Ciencias
Agricolas de la OEA
Rio de Janeiro, Brazil

The Information Center: The Ingle publication was prepared as a survey of the various non-formal education programs using a communication medium as a project component. This Information Center bulletin was never intended to be an analysis of these various projects because there was not enough hard data available to permit such an undertaking. It is hoped that this booklet will bring these projects to the attention of those who can use the information which Ingle has assembled. With luck this publication may serve as a catalyst for the funding of non-formal projects with communication media components which will have the means to collect hard data.

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A MESSAGE

devote more time to observing pupils' reactions, lending them assistance and stimulating their learning in all possible ways. His success depends on his imagination, creativity and ability: that is, his unique human qualities.

School today is meaningless if it does not stimulate the imagination and creativity of children and youth, and their natural developmental abilities. At the same time, there is a need to nurture in students good study habits, work, personal and community responsibility, favorable attitudes toward learning and academic, professional and moral achievement. Content or information transmitting, therefore, should be secondary. A desire and stimulation to continue learning is what the student should take away from the school and the teacher. This then is the affective or human domain and the message is a simple one.

Whether through television, radio, film, newspapers or the professor, in this era of grave human problems, education's message must be *simple enough* to be understood by its human receiver, *relevant enough* to help improve the quality of his life, and *stimulating enough* to make him believe in his own capacity to grow and serve humanity.

My special interest in the field of technology is linked to the evaluation of the message. Thus my emphasis is on the receiver of that message — the student.

We as educational technologists, therefore, are responsible not only for the transmission of the message, but also for its effects. The process of evaluation, therefore, helps us to better know our limitations and strengths. In coming to know them, we come to believe in our worth and also that it is worthwhile to discover new techniques, new knowledge, and new friends who will help us to create a better world. This then is my message to you. Let the machines do what they best can do, you should do what is most human.

ACTION RESEARCH AND THE PRODUCTION OF COMMUNICATION MEDIA

Reviewed by Jock Glotter

Date, length: 1974, 32 pages
Editors: Ravi Varma, S.L. Ghosal, John Bowers, R.H. Hulls
Publisher: The Agricultural Extension and Rural Development Centre
University of Reading
16 London Road
Reading, RG1 5AQ, England
Cost: One pound sterling

Too often, educators conceive of instructional technology in terms of the hardware which is used. A far more fruitful approach is to emphasize the importance of sound procedures for applying that hardware to specific communication problems.

This book gives valuable clues on how to develop such a problem-oriented perspective on instructional technology. Practical, inexpensive evaluation techniques are incorporated into the media production process. In this way, creative intuition about how to communicate a given subject is supplemented with evaluation data on the impact of a given media message.

With a grounding in the concrete reality of the communication objectives and resources of an Indian Government project, this book concentrates on media which can be used by most any institution, posters, photographs, and printed materials. The book reviews the activities of the All India Field Workshop on Action Research, and suggests general guidelines for media educators.

COMPARATIVE STUDY ON THE ADMINISTRATION OF AUDIO-VISUAL SERVICES IN ADVANCED AND DEVELOPING COUNTRIES. PART 4: THE AUDIO-VISUAL SERVICES IN 15 AFRICAN COUNTRIES

Reviewed by Susan Hostetler

Date, length: 1974, 77 pages
Author: Harry J.L. Jongbloed
Publisher: International Council for Educational Media
Office Francais des Techniques Modernes d'Education (OSRATEME)
29, rue d'Ulm
Study financed by: 75 Paris 5e, France
UNESCO

This is the fourth in a series of comparative studies by the International Council for Educational Media on the administration of audio-visual services worldwide. The studies are based on the premise that the planning of administration and organization of the services in the field of modern media is one of the first priorities in the assurance of the success of media usage in schools. Educators must outline their plans and decide on priorities in order to obtain the most realistic picture of what is possible within their systems.

Questionnaires were sent out to all African countries at the end of 1972. Information was requested on the structure, organization, functions and operations of national audio-visual centers, or organizations serving as such. The questionnaires treated the following areas:

- survey of the school system
- survey of the audio-visual services
- documentation
- information
- methods of control, testing and evaluation
- training and advanced training of teachers
- research
- coordination of all activities in the field of films, radio and TV
- distribution
- technical services
- production
- international cooperation
- tendencies towards re-organization.

By fall of 1973, applicable questions had been answered and returned by Ministries of Education, national audio-visual centers and other official bodies from Cameroun, Republic of Central Africa, Dahomey, Gabon, Ghana, Kenya, Libya, Mali, Nigeria, Rwanda, Senegal, Swaziland, Tunisia, Upper Volta and Zaire. Most of the given statistics refer to the end of 1971.

The information in the study is organized by country and includes the above-mentioned data. Following the individual reports is a chapter on recommendations for the organization of audio-visual services at various levels in developing countries. These recommendations as well as the entire study are intended for countries that plan to organize, re-organize or build up audio-visual services, with the note that they are merely general guidelines which must be discussed and adapted to the needs of each individual country.

Other reports in the series are: "The Audio-Visual Services in Western European Countries" (1970); "The Audio-Visual Services in Socialist Countries" (1972); and "The Audio-Visual Services in Canada and the U.S.A." (1972).

EDUCATIONAL FUTURISM: IN PURSUANCE OF SURVIVAL

Reviewed by Jock Gunter

Date, length: 1975, 125 pages
Authors: John D. Pulliam and Jim R. Bowman
Publisher: University of Oklahoma
Norman, Oklahoma, U.S.A.
Cost: US $2.95

Educational technologists often tend to see their field as a specialty which can be practiced with a technical orientation that is objective and detached from the larger social context in which education takes place.

Of course, no technology can be objective or value-free. Technology grows out of a social context and embodies that society's values about the nature of man and society. Technology impacts upon society and contributes to its evolution.

This book sets forth a disturbing picture of man's future and poses for educators the challenge of assisting in the transformation of human societies: "Man considers himself the end product of evolution but unless he can develop a superintelligence capable of coping with the transformation, man will become obsolete."

People who think of such grand changes call themselves "futurists." The discipline which they are developing is called "future studies." Their insights may be of interest to educational technologists.

This catalogue of current American discontents with technology and of proposals for reform offers a rapid exposure to this new field. The book's bibliography is entitled "350 selected readings in futurism." However, readers who are not familiar with current problems in the industrial societies may have trouble absorbing so many ideas so briefly stated.

ETUDE DE LA RECEPTION TRANSNATIONALE D'ÉMISSIONS DE TÉLEVISION EDUCATIVE

Reviewed by Stephen Grant

Date, length: 1974, 85 pages
Author: Max Egly
Publisher: Agence de Coopération Culturelle et Technique
Centre d'information et d'échanges télévision
39 Boulevard de Magenta
75010 Paris, France
Study financed by: ACCT and UNESCO

This 1972 study involved an ETV simulation introduced into several different Francophone African settings. TV programs of educational interest were selected from France, Canada, the United States, Sweden, and Niger. They were put onto one-inch video tape, and along with liaison programs and introductory passages all copied onto 16mm film. Then for six weeks a team of technicians and evaluators went into the rural areas (ACCT financed) and urban areas (UNESCO financed) of the following countries: Senegal, Dahomey, Gabon, Tunisia, Congo and Ivory Coast. In some instances the series of programs was broadcast over the national channel; in other instances, when reaching some remote areas by TV for the first time, a closed-circuit mobile van with generator power was used.

The objective of the simulation was to assess the feasibility of transnational TV programming for African countries: that is, exporting one country's educational TV program and broadcasting it in unadapted form to a different socio-cultural setting, to an African setting unaccustomed to visual stimuli. How does it work? Does it work? The study was not tied to any future project and did not commit the funding agencies to further collaborative research. The conclusions are presented according to different audiences, different learning groups, and different broadcasting media and modes. Examples follow.

Pupils. Higher elementary school pupils appeared to recognize the educational usage for which the programs were intended. They preferred sequences drawing on their habitual life style: children, animals, adventures, games. They were especially attracted to figures which reappeared on successive days (in serial form). Pupils' attention span could be increased in moving from a traditional teacher dominated pedagogical situation to the new screen/teacher/pupil relationship. Fear of speaking up diminished: the TV prompted a maximum of pupils to participate, not only the brighter minority.

Teachers. Some teachers were visibly disarmed by the TV because they were ignorant of program content. Some teachers criticized their pupils' spontaneous collective responses to the TV programs as being unmanageable according to the canons of traditional pedagogy. Other teachers, however, discovered they could move from traditional classroom teaching methods. one program would allow the teacher to switch from a history lesson to mathematical concepts, to French language practice in a new interdisciplinary approach. Some teachers found that the TV could be used for other purposes than amusement; it could treat serious and even abstract subjects.

Satellite transmission. Few of the countries visited evoked the future possibility of receiving TV programs by satellite. None of the simulations utilized, or even referred to, satellite transmission. It was felt that satellite utilization would maintain the importation of foreign programs which might constitute a drawback. But on the other hand, there might be some common "core curriculum" which could be internationally valid and not require any adaptation. Certain advantages in the satellite would be the avoidance of severe practical problems involving transportation of fragile material, authorizations and customs, and, additionally, the possibility of reaching a potentially unlimited audience.

The study is especially useful in its minute recording of the step-by-step planning stages and activity cycles. The work is enhanced by technical illustrations showing the closed-circuit design and classroom interaction, and by numerous recorded statements of teachers and pupils. The general conclusion is that transitional ETV programming is indeed possible, and feasible. The author expresses the wish that more such research studies, jointly financed, enrich the state of the art concerning the future potential of exchanging educational television programs.

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