DOCUMENT RESUME

ED 166 763 CS 502 421

AUTHOR Carlisle, Robert D. B., Comp.
TITLE Patterns of Performance: Public Broadcasting and Education 1974-1976.
INSTITUTION Corporation for Public Broadcasting, Washington, D.C.
PUB DATE 78
NOTE 147p.; Small print may be marginally legible

EDRS PRICE MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS Adults; Broadcast Industry; *Educational Radio; *Educational Television; Elementary Secondary Education; Instructional Media; Junior Colleges; Mass Instruction; Media Research; Postsecondary Education; Preschool Children; *Programing (Broadcast); *Public Television; Telecommunication; Telecourses

ABSTRACT

Intended as a practical invertory of ways that public broadcasting has been used for education, this volume is divided into three sections that deal with television, radio, and research articles. The section on television discusses the method, material, and changing context of educational broadcasting; analyzes the programing and funding of preschool television; compares different approaches to programing for the school age child; and describes a number of approaches for teaching the adult learner. The section on radio presents a status report on education through radio including special programs for professionals, the young, and the blind; distinguishes the role of radio at various educational levels; and summarizes the needs of the radio industry if it is to expand. The final section contains research articles on satellite technology and public service telecommunication, open learning and postsecondary education, the effectiveness of "The Electric Company," and the role of instructional television in the educational community. (MAI)

PATTERNS OF PERFORMANCE: Public Broadcasting and Education 1974-1976

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Office of Educational Activities
Corporation for Public Broadcasting

Patterns of Performance:
Public Broadcasting and
Education 1974-1976

The Corporation for Public Broadcasting
1111 Sixteenth Street, N.W.
Washington D.C. 20036

ISBN 0-89776-004-2
Library of Congress
Catalog Card Number: 78-068395

Additional copies
may be obtained
for $3.00

Foreword

Under the Public Broadcasting Act of 1967, CPB was charged with aiding the development, encouraging the growth, and tracking the progress of public broadcasting, including its uses for, and services to, instruction.

Recently, CPB's Office of Educational Activities has completed, with support from the National Center for Education Statistics, the first nationwide survey of the instructional uses of television in the nation's elementary and secondary schools. Extensive reports of the findings will be issued throughout 1978. Results of other Educational Activities' surveys which provide additional information about public stations' services to learners of all ages will be reported in 1978.

But to look only at such data would not reveal all one should know about the complex sets of relationships that characterize the efforts of public broadcasting and education to work together.

This volume offers insights about the human side of these efforts and looks at some of the successes, failures, and key issues occurring since 1974. Commissioned articles provide special focuses.

What follows mostly is a recounting of one man's journey—a reporter passing through the scene from 1974 to 1976—visiting a handful of locations where something significant or promising happened or seemed likely to occur in the long, often convoluted history of public broadcasting and education.

The tone of the volume is upbeat, and rightly so, we at CPB believe. Surely success is not everywhere, and perhaps in not enough instances, but certainly it occurs in many diverse and often disparate places where public broadcasters and educators are working together to better the quality of American Life. This volume is not a compendium of success and failure, but it is a useful documentation that much of importance is indeed happening, and that much more remains to be done.

Henry Loomis
President, Corporation
for Public Broadcasting

Contents

Acronyms

Advisory Council of National Organizations/**ACNO**
Agency for Instructional Television/**AIT**
Applications Technology Satellite/**ATS**
Central Educational Network/**CEN**
Children's Television Workshop/**CTW**
Communications Technology Satellite/**CTS**
Corporation for Public Broadcasting/**CPB**
Division of Educational Technology/**DET**
Eastern Educational Television Network/**EEN**
Eastern Regional Council for Educational Television/**ERCE-TV**
Educational Broadcasting Facilities Program/**EBFP**
Educational Research Information Center/**ERIC**
Educational Television/**ETV**
Educational Testing Service/**ETS**
Emergency School Aid Act/**ESAA**
Full-Time Equivalent Student/**FTE Student**
Fund for Improvement of Post-secondary Education/**FIPSE**
General Educational Development/**GED**
Great Plains National Instructional Television Library/**GPN**
Higher Education Applications of Radio/**HEAR**
International Instructional Television Cooperative/**ITV Co-op**
Instructional Television/**ITV**
Instructional Television—Fixed Service/**ITFS**
Kentucky Educational Television/**KET**
Massachusetts Educational Television/**MET**
Milwaukee Area Technical College/**MATC**
Minnesota Public Radio/**MPR**
National Assessment of Educational Progress/**NAEP**
National Association of Educational Broadcasters/**NAEB**
National Center for Education Statistics/**NCES**
National Endowment for the Humanities/**NEH**
National Institute of Education/**NIE**
National Instructional Television/**NIT**
National Public Radio/**NPR**
New England Instructional Television Research Center/**NETRC**
Office of Policy Development/**OPD**
Office of Telecommunications Policy/**OTP**
Ontario Educational Communications Authority/**OECA**
Post-Secondary Education/**PSE**
Public Broadcasting Service/**PBS**
Public Interest Satellite Association/**PISA**
Public Service Satellite Consortium/**PSSC**
Public Television/**PTV**
Regional Schools Contract Planning Committee/**RSCPC**
RSCPC Committee/**RISKIP**

Research Triangle Institute/**RTI**
Response System with Variable Prescriptions/**RSVP**
School TV Utilization Study/**SUS**
Subsidiary Communications Authorization/**SCA**
Southern California Consortium for Community College Television/**TELECON**
Southern Educational Communications Association/**SECA**
State University of Nebraska/**SUN**
Top of Alabama Regional Education Service Agency/**TERESA**
University of Mid-America/**UMA**
United States Office of Education/**USOE**
Virginia Public Telecommunications Council/**VPTC**
Video Tape Recorder/**VTR**
Western Educational Network/**WEN**
Western Instructional Television, Inc./**WITV**

Acknowledgements

This publication would not have been possible without the contributions of many individuals. First, the dedication and energy of Robert D. B. Carlisle, who compiled the material in this text from a wide number of sources, is responsible for much that went into this book. Lilli Udkoff, assistant to Mr. Carlisle, and research assistants Arlene Pike and Statton Rice provided a large measure of supportive contribution as well. Steve Millard edited the basic text.

In addition, constructive editorial advice and comments were provided by a number of individuals from the educational broadcasting community including: Eva Archer, Diana Bliss, Barbara Cole, Shirley Gillette, Clyde Green, Dr. J. Terrence Kelly, Dr. Bernard Luskin, Dr. Otto F. Schlaak, Rhea Sikes and Howard Spergel.

Thanks goes to those who contributed articles. The discussions enhance the educational perspective in public broadcasting. These include: Robert Carlisle, writer consultant; Dr. Bernard Luskin, president Coastline Community College; Dr. Edward Palmer, Executive Director, Children's Television Workshop; John Witherspoon, president, Public Service Satellite Consortium; and Dr. Elizabeth Young, Director Telecommunication Center, Ohio State University.

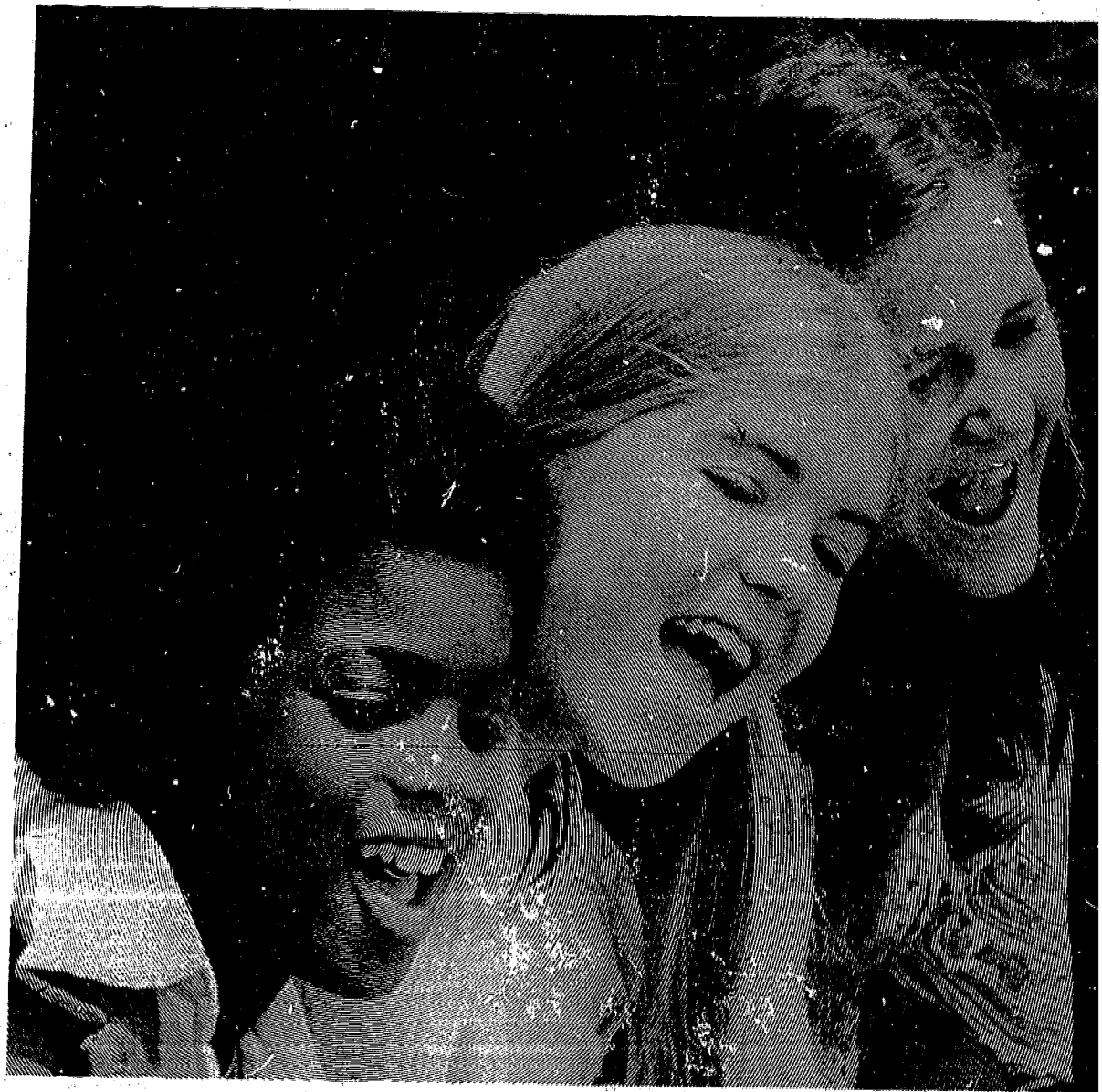
It should be noted that the opinions and contributions of the authors reflect their respective personal views and are not necessarily those of the Corporation for Public Broadcasting.

In addition, a special thanks to Stanley Harrison, CPB Publications Manager, for overall supervision of the editorial text and management of production and for the assistance of Eleanor Miller, Assistant to the Publications Manager, CPB, in seeing this book to publication.

Brian Brightly,
Project Manager

Section 1

Television



Preface

As my life and opinions are likely to make some noise in the world, and . . . will take in all ranks, professions, and denominations of men whatever—be no less than Pilgrim's Progress *itself—and in the end, prove the very thing which Montaigne dreaded his Essays should turn out, that is, a book for a parlour-window—I find it necessary to consult every one a little in his turn. . . .*

Whatever great expectations Tristram Shandy had for his *Life and Opinions* two centuries ago present a sly parallel to this report. Let me explain more briefly than Mr. Shandy did.

First, do not expect to learn about the writer's life and opinions here. This was not our mission. As it described the project in mid-1976, the Corporation for Public Broadcasting (CPB) did hope that we could make some noise. We even expected a bit more readership than *Pilgrim's Progress* has these days. But we have never assumed that the book would wind up on family coffee tables.

In fact, our horizons have been somewhat limited by the nature of our subject. You'll hardly find here as much amusement as you would in Tristram Shandy's delightful tale. Instead, we would hope you'll find these pages to be useful in your work with, and concern for, the applications of public television and radio in education.

Looking to provide a practical reference document, the writer set out "to consult every one a little in his turn . . ." Six months later, this was the inventory which has accumulated:

- 111 letters written in search of information;
- 73 interviews, 52 of them in person;
- 134 pages of notes transcribed from the audiotapes; and
- A stack of documents 101.6 centimeters high.

In spite of this crush of materials, it was never our plan to cover all parts of a complex field (vintage 1976-77). Rather, we have wanted to give you a *sense* of what has been going on in public broadcasting's uses for education. We planned to exploit any worthwhile national statistics, but found them either inappropriate or unavailable. To compensate, we moved in the direction of citing local instances as a suggestion of quality, if not quantity, of activity in the field.

In our research, we found a pattern: the state of this art *is* advancing. The people are more able, more sophisticated; the work is better; the results are more tangible and convincing than they were, say, half a dozen years ago, or less.

On the Report's Beginnings

In a real sense, these pages directly follow those written in 1974 by John P. Witherspoon. His *State of the Art: A Study of Current Practices and Trends in Educational Uses of Public Radio and Television*, dated August 1, 1974, was prepared for the Advisory Council of National Organizations (ACNO) and CPB.

The Witherspoon report was background for ACNO in meeting its February 1974 commission from CPB to "study and make recommendations on the role of the CPB in the relationship of public broadcasting and education." By March 1975, that assessment was done. Titled *Public Broadcasting and Education*, the "ACNO report" expressed the labor of four task forces made up of 55 individuals.

With stimulus from the ACNO study, CPB's Board of Directors, meeting April 13, 1976, adopted a resolution embodying a "Preliminary Statement of Goals and Objectives for CPB's Educational Activities." The preamble stated:

It is a mission of the Corporation for Public Broadcasting actively to seek ways in which educational television and radio can more effectively contribute to meeting the needs of learners and become an integral part of

an educational service, both formal and informal, to the American people.

CPB's Directors then endorsed three broad goals and eleven objectives. It would be Goal I to "make better use of existing national resources—programs, print materials, personnel, physical system." Under this came these objectives:

1. Increase awareness of available resources;

2. Develop methods to extend the use of high quality programming presently available for nationwide distribution;

3. Develop and implement methods of measuring the effectiveness of current resources; and

4. Increase utilization of the available system.

Goal II was this: "Create new resources to meet the needs of a broad range of nationwide audiences." The individual objectives:

1. Assess needs of learners;

2. Create new programs and accompanying ancillary materials;

3. Assist in the development of flexible delivery systems to meet educational needs and reach learners not currently served;

4. Assist in the development of utilization plans which help educational institutions and individual learners make better use of programs and materials; and

5. Find additional financial resources to extend the scope of activities described in objectives one through four.

For Goal III, the Board directed CPB to "project future needs, new goals, and means for reaching these goals." Two objectives were defined:

1. Compile a continuous assessment of the needs of learners; and

2. Design long-range goals (ten years) and mid-range goals (five years). Develop a systematic plan of steps needed to reach the goals—time-table, costs, responsibilities of involved organizations, and evaluation of progress.

This CPB Board action established the pattern. Working within its threadlines, CPB's Office of Educational Activities proceeded to initiate these ten projects:

1. A national Instructional Television (ITV) utilization survey covering television use in elementary and secondary schools;

2. The CPB-Public Broadcasting Service (PBS) ITV Awareness Project;

3. ITV and radio-instruction field surveys of stations;

4. A technology cost-comparison study due in the Fall of 1977;

5. Guidelines for print development: a survey of past and current projects;

6. Preparation, distribution, and evaluation of secondary-school teacher guides for the science series *NOVA;*

7. Experimental projects to be conducted by several licensees in the Eastern Educational Television Network (EEN) during "TV for Learning Week;"

8. National Public Radio (NPR) Educational Services Study;

9. A demonstration project for adult learners focused on stimulating increased program activity using television for delivery; and

10. A sequel to the 1974 *State of the Art,* that is, a report on the various services rendered by public TV and radio at various levels of education.

Some very devoted men and women have spent years clearing the ground for what is today the reasonably solid edifice of instructional broadcasting. Through their toil, the drafty log cabin has been moved piece by piece and put under glass in the museum. These chapters have been written with respect and admiration for what they have achieved.

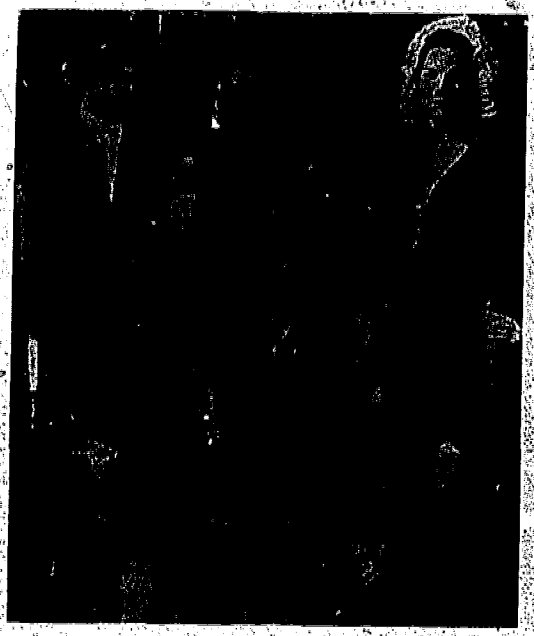
Robert D. B. Carlisle

Educational Broadcasting: A New Look

Young as it is,[1] educational broadcasting has been on trial for years. It has had a mixed press—when it has had any at all. Some witnesses assure us that it's quite alive, quite well: others assert with equal vigor that it *is* ready for the glue factory.

For once, however, the optimists may have gained the upper hand. At all levels, there is evidence of better programs and heightened commitment.

On the national scene, for example, there is the continued excellence, and expanding variety, of children's programs. There is the decision by CPB, in January of 1977, to grant $218,424 for the "Essential Learning Skills" project of the Agency for Instructional Television (AIT)—CPB's first commitment ever to help fund a formal in-school series. There is the successful sale "of almost 75,000 copies of books related to the first national broadcasts of *The Adams Chronicles*, and the 30,000 viewers who enrolled for college credit. There is the decision by directors of National Public Radio, to create a new staff function on educational activities; meanwhile, the NPR series *Options in Education* drew almost 1,000 listeners' letters in May and June of 1976. Within regional boundaries, the list of examples was no less varied. Some of the activity came from regional networks: for example, the Central Educational Network (CEN), through its three-year-old ITV service, provided its members 32 series totalling 846 programs—a 340 per cent increase over the year before—and saved them $54,000 through "group buy" contracts. Another educational service originated with individual stations such as WAMC-FM in Albany, New York. Through its subcarrier channel, the station continued two-way radio conferences for physicians in six Northeastern states (7,513 doctors in 1975-76), and generated other continuing-education sequences for 5,354 nurses, 595 dentists, and 2,656 paraprofessionals. Others came from new kinds of institutions. Most visible was a nontraditional study project, the University of Mid-America (UMA) which uses TV, audio and other media to offer adults college courses at home; by the Fall of 1976, it had recorded 4,051 enrollments in four states for 17 courses—most of them credit-bearing.



The 13 hour-long segments of The Adams Chronicles *prompted sales of 75,000 books relating to the series.*

Elsewhere, at local levels, the evidence of growth and change was limited only by the sweep of the inquiry. One could turn in any direction, for example:

Wisconsin, where a survey of 1,100 residents by the American Revolution Bicentennial Commission revealed that educational radio and television ranked third among the state services they see as beneficial to them (trailing only highways and parks);

South Carolina, where the state's ETV

[1] Modern educational broadcasting turns 24 this spring—a dating that derives from the opening in May 1953 of KUHT, the educational TV station licensed to the University of Houston. (Educational broadcasting itself is, of course much older; it began in 1919 at WHA's predecessor in Madison, Wis.) By comparison, the phonograph had its 100th birthday in 1977; film is 75; even the futuristic transistor is 30.

Common Cents, produced by KETC, St. Louis, and distributed by the Agency for Instructional Television, hits local school children participate in the series.

network passed one million in student enrollments for the first time in 1975-1976 — along with 10,502 who took radio courses at 92 schools;

Chicago, where station WTTW drew about 27,000 households, and sometimes more than 50,000, for its weekly Saturday telecasts of a high-school equivalency course (from Kentucky Educational Television);

Cleveland, where ITV enrollment jumped 20 per cent in 1975-76 to 918,712 (26 series had more than 10,000 viewers), and where the output of ITV-program cassettes for closed-circuit use in schools is doubling annually;

Kentucky, where six out of ten elementary children viewed ITV on a regular basis from Kentucky Educational Television (KET). According to a KET survey of teachers, 52 per cent use KET broadcasts; among those with a TV set in their room, 79 per cent use the service;

Indiana, where the spread of instructional design could be seen in Purdue's new Office of Instructional Materials which allotted a full year for producing a radio course on personal finance. The project calls for design, recording of location actualities, and piloting — in sharp contrast to the unadorned recording of traditional lecture courses a year ago.

Without question, real ground has been gained in educational broadcasting in a few short years. Still, any research outing in 1976 was bound to spot another kind of evidence—reminding the onlooker that it isn't all rosy, nor has it ever been.

One major public TV station with an $8 million budget (WETA, Washington, D.C.) has had no structured ITV service for several years, and has found no concerted cry for it from local schools.

In Chicago, WTTW drastically altered its daytime ITV (it even dropped the term "ITV") three years ago. Meeting with school-system representatives, the station manager, William J. McCarter, had found "considerable disenchantment" with the traditional philosophy of ITV; when he asked one of the educators what sort of programming would be useful, the reply was: "If I could get an edited version of 'Bridge on the River Kwai' for cassette play to teach a lesson on pride, I'd rather have that than all the ITV offered in the system." As for what WTTW transmits, the staff makes the choice. At that time, the morning included: *Sesame Street, The Electric Company, Mister Rogers' Neighborhood, Wordsmith, Infinity Factory, Cover to Cover, Bread & Butterflies, Carrascolendas, Villa Alegre.* And who picks? McCarter said "We've made the selection."

Loose threads can be found elsewhere. In one New England state, a Department of Education survey of teachers showed that only 12 per cent were using ITV programming. The public TV licensee in the state started rebuilding during this academic year,

although "definitely hampered by a lack of publicity."

Lack of awareness can hurt, so may lower enrollments. Zealously committed to ITV, Cleveland's WVIZ last year studied population figures in 40 of its school systems. Its projection: by 1985, the station might lose one-third of its membership.

With production quality skyrocketing, some educational series have pulled down major awards (for example, *Inside/Out* won a national Emmy in 1974; KBPS-AM Portland, Ore., won an Ohio State award in 1975 for *Who Cares?*). Other projects have fallen short. After one season and the outlay of more than $7 million, the Children's Television Workshop (CTW) shelved its health-education series *Feeling Good*. To Virginia Fox, Associate Executive Director of Kentucky Educational Television, that cancellation by CTW President Joan Ganz Cooney was "one of the bravest, most important steps taken in ITV." Still, it cut deep when the front-running, persistently praised CTW faltered.

Nor was it comforting to scan last fall's enrollment figures for the University of Mid-America, with its media-borne courses serving residents within reach of a six-state consortium of public universities. The Fall 1976 total of 750 adults contrasted with a high of 1,260 in Fall 1975, and 969 in Spring 1976. The decrease represented "a situation which apparently was repeated all across the country," according to Milan Wall, UMA's Director of Public Affairs and Information Services.[2]

At the very least, the UMA report was discouraging to the project officer for this regional institution's largest funder, the National Institute of Education (NIE). Said Dr. Jerome Lord, chief of NIE's Open Learning Systems Branch: "I take a very short breath when I read those enrollment figures." But those in educational broadcasting are used to riding a see-saw, and nothing stays the same for long in this field. UMA is pushing on, planning toward the end of the decade.

This report cannot fairly freeze-frame UMA, or any other agency. The work goes on. In Fresno, California, a new school-licensed station (KMTF) was expecting to go on the air early in 1977. After innumerable years, a new copyright law was in place, calling for a shakedown period for public broadcasters.

Meanwhile, KET was moving ahead early in 1977 to funnel $1.1 million worth of new equipment to Kentucky schools. At the same time, it was designing a concentrated analysis of ITV usage patterns in selected school districts. And at the Mitchell School in Needham, Mass., Mrs. Helen George for the fourth year was using *Inside/Out* in second-grade classroom. As the programs played, she found again that "you could hear a pin drop: the children are so attentive they become completely absorbed in what's happening on the screen."

So the work does go on, and change discards the outmoded. This report will try to join the onlookers.

The Method and the Material

Basically, the three sections of this report will be built outward from the learner. The spectrum will stretch from children in pre-kindergarten educational experiences, to adults who involve themselves in lifelong learning.

In keeping with this approach, the first four chapters and appendices treat highlights of the past two years in the preschool area, the school years—kindergarten through grade 12, and opportunities for the adult learner.

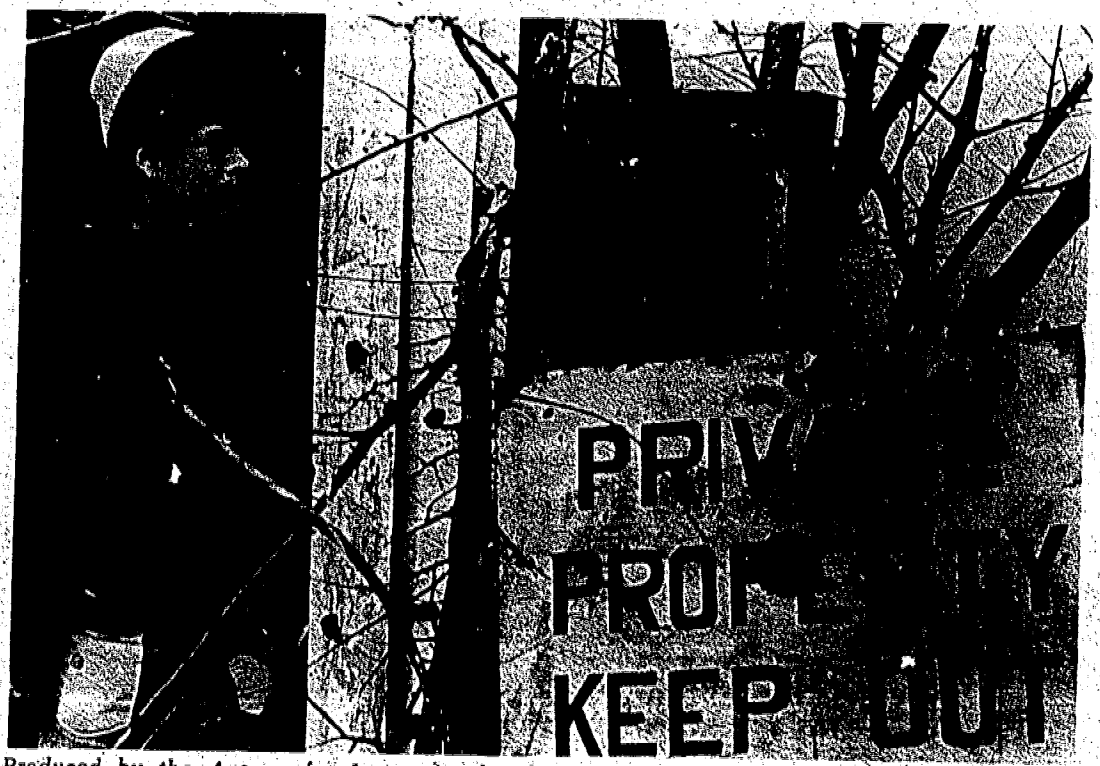
The second section considers radio's place in education. Included is an article by Dr. Elizabeth L. Young, Director of the Telecommunications Center at Ohio State University, who reviews current applications of instructional radio and audio—and suggests ways in which those activities might be rethought.

Finally, the third section contains several articles: satellites for education, open learning for adults and the impact of a specific program like *The Electric Company*.

In one article, "The Hunt for the Wiser Answer," the writer sketches the Virginia Public Telecommunications Council as one model for formalizing some cost-and-efficiency questions that public broadcasters need to answer.

Throughout these pages, we will deal with both the environment and practice of educational communications. ITV and instruc-

[2] Miami-Dade Community College's Open College, which exploits TV, radio and computerized feedback, has run into the same decline. Fall 1976 enrollments in nine courses totaled 1,495, compared with 1,954 for nine series in Winter 1976 and 2,219 for eight series in Fall 1975.



Produced by the Agency for Instructional Television for junior high school students, Self-Incorporated deals with the issue of emotional health. The scene above is from one of the programs in that series, "No Trespassing."

tional radio have to live within education as a whole and this report must stake out some of the constraining issues in American education. In one way or another, these issues —such as higher education's search for new customers—affect the use of media to meet academic goals.

To illustrate the current workings of educational broadcasting, the report will draw on the wealth of anecdote at hand for any investigator who listens well. And, where possible, a statistical backdrop will be projected. "Where possible" is an important caveat: not all public broadcasters ask the same questions or stick to the same ground rules, and the result is a spray of numbers that may not always translate into a national picture. This report will offer the reader whatever precise, cleanly chiselled figures there are; when data disintegrate into the "apples and oranges" problem—when sets of statistics are irreconcilable—the chapters will lean away from the numbers and toward the illustrative anecdotes.[3]

These pages will also look for perceptible trends—such as the modest but visible increase in ITV uses at the secondary school level. As an introductory illustration take the series *Self-Incorporated*. Intended for junior-high students and released early in 1976, it was seen by 38,000 students in Iowa, or 23 per cent of that state's enrollment in grades 7 to 9. Meanwhile, KET's new and well-produced *The Universe and I* has reached 16 per cent of Kentucky's eighth-grade students. One of six pupils is a start. All too recently, the upper grades would invariably rattle off a confounding array of reasons why ITV was not suited to their institutional way of life.

[3] One further comment on the thirst for (and value of) statistics comes from AIT's Director of Research, Saul Rockman. Recalling AIT's survey of ITV use in eight states, he says: "People, when asked 'what do you want?' would say, 'I don't really need hard data for my job. I'd settle for case studies, but my boss, he needs numbers. You go to the boss. He says: 'I don't really need numbers. I can settle for case studies and anecdotes. My boss: *she* needs the numbers.' You go to her and she says, 'For my level of decision-making, I don't really need numbers at all, but the assistant superintendent, he's the one who needs numbers.'" And so it goes, according to Rockman, right to the state legislature—where the legislative aide might say: "We may need the numbers. But when you go to the legislators, if you can tell them a good story, you're better off."

One further point needs to be mentioned briefly: the problem of defining the boundaries of our subject. Public broadcasting has always had trouble defining its terms, and time has smeared whatever definition of "ITV" may have existed. College courses, adult education, and instruction for business and the professions have been added to the schedule, but the term "ITV" retains credence—if not precision. How to draw the line?

This report welcomes the distinction offered by EEN's Director of Educational Services, Howard K. Spergel. To him, ITV "is primarily intended to provide television programming for integrated and appropriate use within the structure of formal education (whether within or outside of an institutional framework)." Formal learning, Spergel goes on, "can and does take place outside formal educational settings. A casual walk in the park with a group of children is an example of informal education. However, that same walk structured by the objective of finding and identifying six varieties of moss then becomes a formal educational experience."

In this context, watching *The Ascent of Man* earnestly but casually would be "informal learning." Stepping up that experience to meet "specific knowledge and performance objectives" with the addition of seminars, readings, and independent study assignments would, as Spergel concludes, bring the viewer into the camp of formal learning—and into ITV.

While this distinction may be off the beacon for some, it will help guide discriminations in this report. And it may goad the purists into coalescing behind a search for more broadly acceptable definitions. A move toward sharper, nationally affirmed terms would be among the most worthy outcomes of this report.

The Changing Context

This report will speak often of marked improvements in the quality and approach of instructional programming. Those improvements cannot be understood apart from equally pronounced changes in the operations of educational communications. Some of those changes deserve preliminary mention here.

We have already noted the new level of commitment among public broadcasting's own national organizations. Concurrently, there have been massive new levels of support from other sources—especially the federal government. Support from federal agencies has grown so dramatically (some with more strings attached than others) that the risk of redundancy is real. Some examples from the Department of Health, Education and Welfare (HEW) alone:

- The Educational Broadcasting Facilities Program (EBFP) in the U.S. Office of Education (USOE), had $13 million available in 1977 and has distributed $118 million over the 15 years of its existence.
- The Division of Education Technology, which administers EBFP also has an additional $7 million in educational TV "set-aside funds," most of which has gone to support CTW's *Sesame Street* and *The Electric Company*.
- Elsewhere in USOE over $40 million in program-production funding has been made available since passage of the Emergency School Aid Act in 1972. Series like *Carrascolendas*, *Vegetable Soup*, and *Rebop* have been produced with this assistance to meet the needs of minority-group children.
- For nonbroadcast applications of telecommunications, the seven-year-old Office of Telecommunications Policy (OTP)—attached to the office of the Secretary of Health, Education and Welfare—has a discrete fund of $1 million in FY 1977. Public broadcasters could be prime candidates, says administrator Howard Hupe, "if they view themselves as educators more than broadcasters."

The federal government's main educational research and development arm, the National Institute of Education, has approximately $300,000 earmarked for satellite experiments in the first planning phase of 1977, with several million planned for funding in future years.

The emerging emphasis on new technology, visible in the above paragraphs, is equally apparent elsewhere. In the most conspicuous example, CPB has the lead role in planning for eventual public broadcasting use of a satellite to distribute programming. A kindred organization, the Public Service Satellite Consortium (PSSC), was formed in 1975. Its 85 members (18 of them public broadcasters) said their first priority for

satellite use was to extend continuing education; this has become PSSC's initial objective in a joint study with the Public Interest Satellite Association on non-broadcast use of the public broadcast satellite system.

PSSC provides one illustration among many that this is the era of the consortium. In the area of program development the evidence grows more striking every year. As of Fall 1976, AIT had finished six projects (going back to *Ripples* in 1970), was winding up a seventh, and had two more on the drawing boards. Another grouping, the International Instructional Television Cooperative (called the "ITV Co-op") came together on October 1, 1976. It had been the core of the ITV unit at WETA, in Washington, D.C.

About the same time, WNET in New York began stimulating a consortium of higher-education institutions in New York, New Jersey, and Connecticut. Recent receipt of a grant from The Fund for Improvement of Post-secondary Education will provide resources to look at future college-credit courses for broadcast.

In Los Angeles, public station KCET has become the focal point for a six-organization consortium's "Television Career Awareness Project," funded by NIE (now titled *Freestyle*). In South Carolina, ten private colleges have put up the money to link their campuses in a closed-circuit grid; eventually, the system will tie into the ETV network.

Through similar combinations of institutions and resources, through transfusion of instructional design methods, production quality has risen extraordinarily (for someone remembering the ancient ITV of 15 years ago). Quite competitive with consortia, local stations and state systems have reached new levels of sophistication, too. The experience at WVIZ, is typical. Says Assistant Manager Alan Stephenson:

Our high in producing shows was 180 in 1968. Now we do about 100 a year, with instructional design worked in. The quality's up 300 to 400 per cent since '68. We've won four national awards recently. Two of our series were done totally on film, on-location. We do a lot with actors. We've even bought single feet of UPI news footage (16 mm at $6 a foot).

All this for ITV productions. Inevitably, it means greater visibility for educational broadcasting—and just possibly greater demand for it from within education. WNET cites an intriguing example. During 1976, its staff met with some New York City teachers about using the station's ITV output. "Their biggest frustration," recalls Shirley Gillette, the station's Education Division director, "was that they didn't have the sets. They were angry with our staff for tantalizing them with this good stuff which they can't use."

Quite apart from production, licensees have boosted their sophistication in other ways. More research is being done. In Illinois, Rhode Island, Connecticut, Virginia, and Kentucky, surveys of in-school uses have been made.

Licensees have become much more cost-conscious. Within the last two years, these computations were reported:

- WVIZ has figured that "the cost to the schools to deliver one fifteen-minute lesson to one child, based on actual reported usage" comes out to 2.1 cents. The cost per child for having 120 children see a commercial library's fifteen-minute film would be 8.5 cents.
- Virginia's Public Telecommunications Council retained researchers in 1975 to estimate the "approximate cost of instructional television . . ." Their figures, drawn from a random sample of 100 public schools, boiled down to 8 cents per pupil hour.
- KET, checking records for 1974-75, arrived at a breakdown of "the average cost per student for all broadcast offerings in the curriculum area." The delivery cost per student ran from a low of 12 cents for Interdisciplinary courses (such as *Ripples*) to a high of 52 cents for Math courses.

George L. Hall, formerly Director of the Virginia Council, cautions wisely that these figures may be "noncomparable." Undoubtedly he is right. Even so, public broadcasters are proving they are no less concerned about accountability and efficiency than educators.

Then, too, broadcasters are perfecting their skills in utilization, or field coordination—call it what you will. The work aims to enhance the teacher's use of electronic instructional materials. "There's no magic in it," insists Alan Stephenson. "It's just common sense." It's also hard work. AIT's Associate Executive Director, Robert W.

Fox, travels 125,000 to 150,000 miles a year. WVIZ field coordinator, Esther Dahs, drives to her schools three or more days a week, generally 120 miles or more per round trip —and she still won't come close to hitting all 350 of them this year, to her chagrin.

The labor of utilization comes under the heading of what KET's Virginia Fox calls "servicing your account." In her words: "If you don't service your account, you're not going to hold it. Public TV must learn to service the account."

recognition that ITV advocates can no longer afford to use Coolidge-era ways of "selling."

WNED-TV, in Buffalo, N.Y., was moving in the right direction. In January 1975, the station suggested that colleagues in EEN join it in a "TV for Learning Week" that coming September. The week's goal would be "to make both the general public at home and educators in the schools more aware of ITV as a learning tool."

EEN held "TV for Learning" weeks in 1975 and 1976, and the consensus was that

Produced by KCET, Los Angeles, Freestyle made its debut in 1978. The programs, part of a six-organization consortium and funded by the National Institute of Education, are designed to help young people with career options.

It sounds like sales work, and in some ways it is. When Ed McGuire started to work for KET in 1974, he was its single utilization man. Today he has five field representatives; two of them live and work in eastern and western quarters of the state. Sometimes the six wear their utilization hats; at other times, as McGuire put it, they become "salesmen of sorts." (If he had his way, McGuire would have a staff of 17 to "service the account.")

Understaffed as utilization efforts often are, the neglect of promotion and publicity in ITV was, for years, even worse. (With a few exceptions, says one regional network director, it has been "pitiful.") In the past few years, however, there has been new

they "definitely created more awareness of ITV programs and services." The weeks have involved the assembling of a special program line-up development of a logo and print materials, and special angles by many of the individual stations. One ambitious project was—a "Television for Learning" supplement in the *New York Times*, developed by WNET with a grant from Exxon—will be repeated in the 1977 "TV for Learning Week."

At the same time, WNET's Education Division began trying other approaches, including a "Speaker's Bureau" that has sent volunteers to academic institutions in the region, armed with such tools as a 15-program "sampler" cassette and a utilization

The "Television for Learning" supplement to the New York Times, funded by a grant from the Exxon Corporation is examined by (left to right) Shirley Gillette, Heide Kane and Don Skelton, all with WNET/ Thirteen, New York.

film produced under a $9,000 Exxon grant.

Many observers have long felt that the "awareness" push must reach back to the training level. As Maryland's Rick Breitenfeld puts it: "The teacher-education institutions should be assaulted in such a way that our teachers hit the classrooms and grow quickly angry and confused that television isn't used."

But the message is spreading that something *can* be done. In Virginia, the governor's picture appeared in newspapers last fall as he proclaimed "ITV Week." Similar activities are under way in the midwest with the Central Educational Network (CEN). At the national level, a plan to spread the ITV message has developed at PBS and CPB. Regional workshop activity with ITV directors and public information specialists has already taken place. A grant to PBS from CPB's Office of Educational Activities has produced promotion materials, television spots, and a special program entitled "Something's Happening," all for use by the stations.

Nowhere is the new attitude toward awareness demonstrated more clearly than in a set of materials developed by the New York State Education Department's Bureau of Educational Communications. The five-part "Visual Learning" package is designed to "assist teachers and administrators to make more practical use of ITV in the classroom. . . ." It goes about that task in a big way. The manual's cover picture of Gene Shalit, a star of the *Today* show, suggests at once that "Visual Learning" may be more than a perfunctory stab at the issues. That impression persists as the material unfolds: In each of five sessions "Visual Learning" offers a videotape segment, a manual, and certain activities, with topics ranging from broad assessments of what TV can and cannot do, to practical information on using TV in the classroom. The segments feature well-known personalities (Walter Cronkite, Betty Furness, Shalit) and eminent analysts of the media, but the ultimate aim is close to home: to help teachers understand how television works and what services are available to them locally.

The new importance of "selling" is recognized and demonstrated in this package. If the ITV message is at all worthwhile, then

it is wholly justified to use sophistication, and to enlist people of stature, in spreading that message.

With all of these changes and improvements, the question remains: Does educational broadcasting matter? To Virginia Fox of Kentucky Educational Television, this concern can be a nightmare:

I'm haunted by the fact that there aren't enough people who care, I have a strong feeling that short of the football program, the athletic program, the textbook program, there isn't anything you couldn't take away from the schools. There might be a few whimpers, but no mass uprising.

Match her candor against the zeal of her own utilization director, Ed McGuire, one-time curriculum supervisor in rural Taylor county, 85 miles southwest of Lexington. In that county, 2,700 children go to four county schools. Each building has one TV receiver per classroom; every school has four closed-circuit channels, with a small-format videotape player to feed each channel. What about teacher acceptance? Ed McGuire says:

They're very comfortable with it. They're so accustomed to TV that it's part of their curriculum; in fact, many would feel naked without it. Series like Inside/Out *do it so well that teachers feel they'd be depriving children of something if they didn't include (such programs) as part of their classroom experience.*

On the one hand, a haunting feeling that "there aren't enough people who care;" on the other, a classroom of children who have come to regard learning through television as an important part of their education. The impressions are different, but each is part of this story.

Educational broadcasting is like that: it resists easy generalizations, and it is changing more and more rapidly. This report will try to capture as much of the story today as it can. When that story is told again in three or four years, expect much of it to be quite different.

For the Preschool Child

Call it Alice's Wonderland or a Hans Christian Andersen tale or the world of Oz or a learning experience turned into fun, or even a welcome friend. Public television has been these and so much else for more than half a generation of American children in their preschool years. It has been an impressive performance, as recent evidence has re-emphasized:

- A 1974 CPB study said that "perhaps as much as 49 per cent of all PTV air time is explicitly for children." The preschool child is very much a part of that viewing multitude.
- PBS research has shown that the morning audience of *Sesame Street* (top 13 markets, January 1977) has two and a half times the viewers of the average prime-time PTV show.
- In an October 1975 survey, Nielsen reported that PTV children's programming was seen in 16,220,000 households. That meant 23.3 per cent of all TV homes. Updating the figures in March 1976, Nielsen found a 12 per cent jump of 1,950,000 households, for a total of 18,170,000. Put in another way, PTV children's series were being watched in more than one-quarter of all TV households (26.1 per cent).

Larger numbers only tell some of the story. Writing in *Child Development* in 1976, Brian Coates, H. Ellison Pusser, and Irene Goodman described their study of "The Influence of *Sesame Street and Mister Rogers' Neighborhood* on Children's Social Behavior in the Preschool." Extending the prior research of others, the authors found that:

- *Sesame Street* can influence "children's social behavior in the preschool." Further, the series "can increase positive types of behavior such as giving positive reinforcement and being cooperative."
- *Mister Rogers' Neighborhood* increased "all the children's . . . giving of positive reinforcement to, and social contacts with, other children and with adults in the preschool."

So, not only have these two series (and others on PTV) been reaching larger numbers but also they have done more than entertain. They have taught—from formal bits of education, to how to get along with a fellow human being.

This service to the pre-K child certainly merits accolades. Happily, society has responded. *Sesame Street* has won more than 100 awards, including 12 Emmy's. In a parallel respect, on May 20, 1974, Yale University awarded Fred Rogers a Doctor of Humane Letters degree. He said:

. . . you have brought a rare quality to your work. Emphasizing the uniqueness of each of your viewers, you have helped children resolve their conflicts, stand up to their fears, and explore their fantasies with imagination and intelligence.

Can a television performer do anything else that is of equal importance?

Change in the Programmers' Ways and Means

Over the past two years, public television's "children's block" of programs had its share of changes. For the most part, young viewers (or old) would hardly have been aware of them. Here were some:

- *Sesame Street* no longer carried the heavy load of cognitive freight that it did when it began in 1969. Then, the ratio of cognitive to affective material was 75-25. In 1976, it was on the order of 50-50.
- *Mister Rogers' Neighborhood* stopped new production. Instead, Fred Rogers' team revised existing shows. Their goal: to make a 460-episode loop of programs that would be "continuous and hopefully perpetual."
- Without shunning the preschool youngster, both the Children's Television Workshop and Family Communications, Inc. (the parent company of *Mister Rogers' Neighborhood*) were generating new series for older ages.

To the child amused at Oscar's grouchiness or absorbed in Fred Rogers' caring words on the importance of listening to each other, matters like these are trivial. And so are the issues that boil today within education. Yet, the debates on these issues may eventually affect what that child sees on public TV.

There is a question today, for example, about one of the basic building blocks of *Sesame Street*. This has to do with its original goals, which were to include "recognition of letters of the alphabet, counting ability and number concepts, geometric shapes and basic reasoning skills." (There were going to be "concepts relating to self," too.)

In its October 2, 1976 issue, *TV Guide* wondered if the three-year-old is ready to learn letters and numbers. Psychologist Bruno Bettelheim was quoted as favoring the "increasing focus" in *Sesame Street* on the affective. He opted for the Cookie Monster "without the teaching of cognitive skills." Eda LeShan, psychologist and author, voiced a similar concern. Learning the alphabet at three or four "interferes with a young child's play," she said, "and play is childhood's work." These observations notwithstanding, there was no indication in 1976 that *Sesame Street* was about to put all its weight on the affec[illegible]

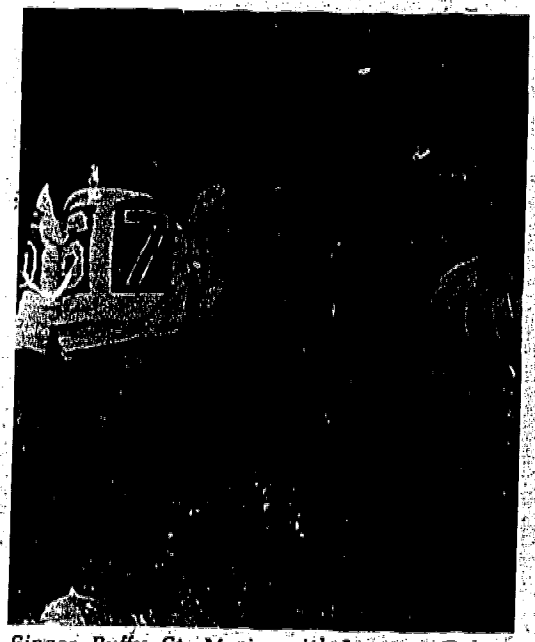
Day-care centers have b[illegible]he topic for another debate at the pre-[illegible]. Should laws be passed to make them f[illegible]e to all? Might day care supplant the home as prime inculcator of values in the society?

Public TV could share profitably in weighing these concerns. There is little doubt that its broadcasts are being watched in day care centers. No one knows how much, though. Available national figures only hint at the actuality. A joint CPB-National Center for Education Statistics (NCES) study for the first half of 1976 showed that *Sesame Street* and *The Electric Company* filled 16 per cent of the total PTV air schedules. When schools were in session, the research indicated, 22 per cent of the hours consisted of those two series alone. That time of day coincides exactly with the traditional schedules of day-care centers.

There is other evidence that seems more indicative. Field information shows, for example, that in New England, 50 per cent of the day care centers have been making use of *Sesame Street* in one way or another. At many sites, children do not watch the broadcasts. Instead, they take part in prereading activity based on *Sesame Street* script highlights. In early 1977, CTW was distributing 1,200 copies of these highlights to New England centers.

A similar report comes from Family Communications. Vice President Basil Cox said in late 1976 that they were "really not able to estimate" day care center use of *Mister Rogers' Neighborhood*. But they "frequently" fill requests from centers for materials tied to the series.

Pre-K Series: What Are They? Whether a child goes to a center or stays home, his PTV viewing habits undoubtedly run the gamut—from *Sesame Street* and *Mister Rogers* to series intended for older brothers and sisters, such as *ZOOM* and *Villa Alegre*. At the same time, these boys and girls may very well have been following the pre-K *Sesame Street* as an in-school program.



Singer Buffy St. Marie, with her son Dakota Starblanket, talks to some kids on Sesame Street about infant care.

In a formal sense, this series was never intended for strict in-school use. Said CTW's Director of Broadcast Relations, Robert Davidson, early in 1977, "It is not a school show. We don't promote it as such, and we have no research on in-school uses."

While others have written *Sesame Street* out of the ITV story, too, some school systems have not bought that exclusion. North Carolina offers a case in point. A 1972

study on "The Utilization of the In-School Television Service in North Carolina" produced this pattern:

1. *The Electric Company*—5,088 teachers were using it for a total of 152,640 students (class size was based on an assumption of 30 per room);

2. A WTVI, Charlotte, series (*Granny*) was used by 3,816 teachers and 114,484 pupils; and

3. *Sesame Street*—3,585 teachers; 107,545 students.

Elsewhere, another situation prevails: *Sesame Street* does not figure in instructional TV schedules. Massachusetts Educational Television (MET), the state's ITV agency, does not offer it for in-school purposes. By the time a child gets to kindergarten, MET believes, he has seen so much of the show that he is "beyond it." An echo of that view can be heard in San Jose, California. There, public TV station KTEH has kept the series out of in-school time. Says Manager Maynard E. Orme:

I love Sesame Street. *But we want to be involved in a child's total education, and losing an hour block during ITV time we don't think is good use of our TV schedule. We have so little time to educate the children who are in school, anyway.*

As it is, some schools in the KTEH area have picked up the CTW series from KQED, San Francisco, at points where its signal overlaps KTEH's. It can't be very surprising, therefore, that when KTEH surveys teachers in its county, the feedback lists *Sesame Street* as one of the series they have worked with in school.

Regrettably, the national statistics available in early 1977 could not dispel the fog over this particular matter. This suggests that public TV, now becoming an avid digger for all kinds of data, might well probe the full range of *Sesame Street* uses—in preschool or classroom settings.

Pre-K Series: A Status Report

As the 1976-77 TV season unfolded, commercial TV's fireworks tended to overshadow parts of public TV's new season. Few viewers probably noticed that *Sesame Street*, entering its eighth year, was about to produce its 1,000th hour of original programming. Only a few might have remembered that *Mister Rogers'* was starting his 23rd season on the air.

In a way, people may have come to take for granted the shows that public TV has offered to pre-K youngsters. If anything, PTV's record has been too good: it lured commercial TV into pursuit. CTW's Robert Davidson has one word for the competition: "severe." Yet, children make up PTV's biggest audience. Somehow the producers of public programming have to keep turning out the programs to hold the attention of those loyal friends.

Those public television producers do have a real dilemma. Children are being saturated with commercial programming. Dr. Keith W. Mielke suggested its nature in his report on *The Federal Role in Funding Children's Television Programming*. He cited Nielsen figures showing that children aged two to five rank fourth among groups using TV (after women 50+, men 50+, and women 35 to 49). Further, as of February 1974, these boys and girls were averaging 30 hours and ten minutes of viewing a week. That comes to four and a quarter hours a day, 1,500 hours a year, and quite a potential headache for those charged with keeping PTV channels alive week in, week out.

This was what several of the makers of pre-K series were doing in late 1976 to counter the dilemma.

Big Bird Keeps Flying. By now, *Sesame Street* has the face that's seen most often on public TV. That's good, but it can be bad, too.

Big Bird, star of Sesame Street, *has a nationwide audience in the series produced by Children's Television Workshop (CTW).*

During the 1976-77 season, PBS was transmitting most programs of the 130-unit cycle twice a day, two times a week. Then the cycle was to be rerun. The result: at least four broadcasts per program in a year—"far more exposure than any other public TV series," according to CTW's Davidson.[1] Why such heavy use? He explained:

The stations need programs to fill air time. Sesame Street draws an audience for them. It's basically an audience question, not an educational one.

After a while, the true *Sesame Street* devotee may think he's seen some animation segments before. He would be right: about 70 per cent of the program material has come from old shows. It has been blended with new continuity and, adds Davidson, "where we can afford it, with new animation, since we know that's the most effective part of the show."

By any standard, the series is costly (see below). Concerned about this—they are asked to share the cost through their Station Program Cooperative—some public TV managers have raised a key question. Why not just repeat the series, they ask, rather than produce new elements each year? Bob Davidson offers these reasons for staying on the existing track:

1. With a tenth anniversary ahead, CTW wants to analyze every aspect of *Sesame Street* as it has been from the start, i.e., a series being changed each year. Then CTW will reshape it "to fit changes in the educational and social environment."

2. By amending the series each year, CTW can inject new, current information for preschoolers.

3. Committed to annual changes, CTW can try different affective components, or even broaden the target age level.

4. Consigning the series to repeats, CTW believes with "absolute certainty," would make the program's spell fade. Even now there is a risk of that: a single bit can be used 40 times in one block of 130 programs, thus having 240 exposures in a year.

5. The series continues to be "the most noticed public TV program—by the adult press, in station fund-raising. . . ." Straight reruns, Davidson holds, are "dead" in the press.

6. Even in straight repeat, *Sesame Street* would be expensive, because CTW would have to buy clearances from actors and others involved. To Davidson, that process might cost as much as $500,000 a year.

Ironically, while some in public TV argue for putting *Sesame Street* into reruns, others complain about seeing "the same old shows year after year." That view is not wholly fair. Presented with the original 1969 programs, as Davidson puts it, they would consider them "poorly produced and out of date by the standards of year number eight."

If anyone outside CTW would get complaints about *Sesame Street*, it would be Dr. Malcolm Davis, whose Office of Education budget covers much of the show's cost. In late 1976, Dr. Davis, Director of USOE's Division of Educational Technology, noted that he may get "a dozen comments a year"—"it's like taking on motherhood." Some have griped about repetition, others, about the impact of TV broadly and *Sesame Street* in particular on reading scores. Dr. Davis' reaction to the latter point was:

TV generally has contributed to a downward trend. I think that's a function of lack of practice. We've become a visual culture. . . . Reading is not as important a medium of entertainment as it was once.

In terms of the numbers of kids who watch Sesame Street in school and at home, the figures are rather impressive. It costs less than a penny per day per viewer. In those terms, the taxpayer is getting his or her money's worth.

Fred Rogers Changes Sneakers. Endless rehearsals, blinking tally lights, stage managers' hand cues—Fred Rogers has had more of these than most TV performers since his 1954 WQED, Pittsburgh, debut on *Children's Corner*.[2] As time went by, he built a big inventory of programs for pre-K children, a fact which helped give birth to a recent change in the neighborhood.

In Fall 1974, Rogers announced that 1974-75 would be his last season of producing

[1] Individual stations have options to schedule the programs more frequently (WTTW, Chicago, for example, has had an active Saturday repeat schedule).

[2] He has also received more degrees than most performers: Mus. B., M. Div., D. Hum., Litt. D., DHL, D.D., LHD.

Mister Rogers' Neighborhood. His company, Family Communications, Inc., would revise earlier shows in the series. In time, this would give them 460 episodes, enough to run 92 weeks without a repeat. Explained Cox of Family Communications:

> *Given the relatively narrow age range of the* Mister Rogers' Neighborhood *audience, each child could be expected to see each episode only twice before "graduating" to other programs designed for children.*

After some 100 days of making more than 3,000 edits in the tapes, and more days of producing 70 new or altered films, *Mister Rogers' Neighborhood-Revised* was done. The modified series had its debut in February 1976, and, according to Cox, household viewing hours jumped "an astounding 95%." The response, he said, "resoundingly validated" the idea of a library of revised shows.

Mister Rogers' has had another kind of validation. To Family Communications, the "most definitive behavioral measure of (the show's) influence" was a 1972 study by Aletha H. Stein and Lynette K. Friedrich.[3] Over a four-week span, boys and girls were observed as they watched Fred Rogers' shows, aggressive cartoons, or neutral programs. The researchers found, according to Cox, that:

> . . . *those who watched* Mister Rogers' Neighborhood *showed higher levels of task persistence, interpersonal prosocial behavior, and self-control than those exposed to the aggressive programs.*

This refrain has been echoed in more recent literature. Harvard Medical School pediatrician Dr. Richard I. Feinbloom, writing in the March 1976 *Pediatrics*, singled out *Mister Rogers' Neighborhood* for promoting "prosocial behavior" and for pointing the way "to the richness and variety of human relationships and communication to which television could expose children."

Another professional has praised Fred Rogers' efforts. Dr. Michael B. Rothenberg, commenting in *Journal of the American Medical Association* of December 8, 1975, described the series as the "best known example" of engendering prosocial behavior through television.

So, *Mister Rogers' Neighborhood* has now become recognized as a patriarch in the family of affective programs. Ten years ago, according to Basil Cox, there were none, except for *Captain Kangaroo*. And what a change in that short decade! "Virtually every children's program," says Cox, "focuses to one degree or another on the emotions of the audience."

Fred Rogers (above) is the moving force behind the success of the popular kid series, Mister Rogers' Neighborhood.

Like the unnumbered children who watched him, Fred Rogers has learned from his years on the screen. More than a little of his mail came from elderly men and women who viewed—and enjoyed—the *Neighborhood* programs. Along with the youngsters in his audience, they felt that a friend had come to call on them.

So, with *Mister Rogers' Neighborhood—Revised* at last in circulation, Fred Rogers was moving in late 1976 to meet needs he has seen elsewhere in the human spectrum. He has already shown that TV can support the awakening of the pre-K child. Now, as a sequel, he wants to show that his kind of TV can *also* support individuals at other stages of life. But even as he plans a series for the elderly, he has not forgotten the children: they too will play a part. Fred Rogers has come to believe that ties between the generations in a fragmented society are absolutely essential.

[3] Aletha H. Stein and Lynette K. Friedrich, "Television Content and Young Children's Behavior," in *Television and Social Behavior, Vol. II: Television and Social Learning*, eds. J. P. Murray, E. A. Rubinstein, and G. A. Comstock (Washington, D.C.: U.S. Government Printing Office, 1972), pp. 202-317.

Dollars for Pre-K Programs

In the world of the educational television producer, concept and vehicle seldom remain the same for long. Nor, for that matter, does the supply of dollars. In fact, if anything is immutable on the fiscal side, it is this basic question: who will pay the fare for the children's fare? So far, the answers have been more temporary and makeshift than most participants would like.

In practice, different means have supported preschoolers' series on one hand and K-12 ITV on the other. Take the latter—a state network may get program dollars from the state department of education. Or a consortium may pull together the necessary money. But local stations have always been in the act, too. Working with local money, they have turned out ITV series, which may or may not go on into distribution elsewhere through a national library.

Then, in contrast, there are the major series directly intended for the preschooler: *Mister Rogers' Neighborhood* and *Sesame Street*. For both, funding has been a bizarre patchwork, with sources and amounts changing every year. The following breakdowns underscore the point:

1. *Family Communications, Inc.*

a) FY 1975: This was the last year in which new *Mister Rogers'* shows were produced for the pre-K audience. About half of the funding, or $1,045,000, came from the PBS Station Program Cooperative bidding. Of the remainder, 20 per cent was provided by The Sears-Roebuck Foundation, ten per cent by the Bureau of Education for the Handicapped, another ten per cent by Johnson & Johnson Baby Products Company, and a final ten per cent from miscellaneous sources.

b) FY 1976: Just under $280,000 came from the PBS Station Program Cooperative procedure. Then, Johnson & Johnson Baby Products contributed 30 per cent; McFeely-Rogers Foundation, ten per cent; Lilly Endowment, ten per cent; and miscellaneous other sources, 20 per cent. In this last category, the two largest items were a carryover from FY 1975 of $60,000 from the Bureau of Education for the Handicapped, and $25,000 from The Sears-Roebuck Foundation.

2. *Children's Television Workshop (for Sesame Street).* Funding *Sesame Street* has been every bit as much of a challenge as finding the money for *Mister Rogers' Neighborhood*.

Robert Davidson, describing the strategy of CTW in trying to meet the costs of *Sesame Street*, said: "The plan we've talked about for years has been for the series to pay a substantial part of its own way." This is how far CTW has come toward that goal:

a) Five years ago, the series was funded from two main sources. Part came from CPB ($5 million). The balance was put up by USOE. This preceded the start of the PBS Station Program Cooperative bidding process. It *also* preceded CTW's earning a hearty income from selling toys, books, and records keyed to the show.

b) In 1977, CTW entered the Station Program Cooperative bidding with a request of $2.2 million for *Sesame Street*. That made the series the third most costly item on the Cooperative's list. Davidson expected that CTW would come under strong pressure from the bidding stations to reduce the $2.2 million, the money they are asked to put up to help pay for the total cost of the series.

The rest of the money for FY 1977 was to come from two sources:

(1) $5 million from USOE's Division of Educational Technology, a sum that covers both *Sesame Street* and *The Electric Company;* and
(2) $2 million-plus from CTW itself. Davidson's expectation: "We will be able to do this without great strain," because the effectiveness of the CTW Products Group has given CTW the forecast of "regular income every year."

Nothing shows quite so well the fund-raising hazards of public broadcasting as CTW's experience with *The Electric Company*. As will be explained in the next chapter, CTW decided to close down that operation in November 1976. There will be no new *Electric Company* shows after October 1977, when reruns of old ones begin (and continue until Fall 1980). One spinoff: the budget for *Sesame Street* may shoot up by as much as $600,000 in FY 1978. That would put it at about $6.1 million. Why the jump? Davidson explained: "We're losing the bene-

fits of volume production that doing two series in one studio gave us." And no longer can CTW overhead be spread across the two shows. At any rate, CTW will have to put up the needed $600,000 itself.

The keystone of CTW budgeting has been the $5 million from USOE for both *Sesame Street* and *The Electric Company*. Have there been strings attached? To a degree, yes. "We do not—do not—dictate to them in *any* way the content," said Dr. Malcolm Davis. But USOE does have certain aims. Dr. Davis' office has requested CTW to buy audiovisual rights from *Sesame Street* performers and others. Once CTW gets these rights, schools can then tape the series off-air and use programs internally at their convenience. "We feel it is in the public interest to make it available this way," explains Dr. Davis.

The Government as Banker. The question—the problem—of continued funding cuts across all public broadcasting's educational activities. It is just as intense in the area of pre-K programming as in any other area. In late 1976, Rhea Sikes, Director of Educational Services for PBS, unscrambled some of the subquestions:

If the federal government puts out large sums of money for children's programming, should it be intended for in-school use? If it should, what kind of safeguards will there be to ensure that this is not just a national agency decision?

At some point, educators have got to make a far greater commitment to the use of the medium financially. That makes the federal government probably the largest source of funding. Should it fund little specific projects? Should there be some kind of national assessment, with chief state school officers coming to some kind of agreement, whose money is made available for productions intended for both local and national use?

Questions this complex have no simple answers. They demand thought by the Department of Health, Education, and Welfare, and by CPB, PBS, NPR, and more. And they directly involve the preschoolers' TV series, as much as the K-12 pupils'. Because *Sesame Street* keeps on being expensive (even when almost three-quarters of the material comes out of prior seasons' production), it seems transparent that either the government puts in dollars or shows of the same quality won't be made. Davidson of CTW is unequivocal on the point: "We could never have done *Sesame Street* without USOE."

The weight of this problem was affirmed when USOE hired Indiana University's Institute for Communication Research. The product: the exhaustive Mielke Report. (As principal investigator, Dr. Keith Mielke was joined by two associates, Rolland C. Johnson and Barry G. Cole.) Their chief concern was over "national purposive" programs. Should USOE help pay for them or not? The team came to believe:

. . . the options and probabilities for maintaining successful series without federal support to be unpromising.

The reasons were several. Among them:

1. Foundation support is "short-term, and . . . dissipating."

2. Corporate support might be valuable for this type of programming, "but this resource will be tied to furthering corporate interests."

3. While selling ancillary materials (*Sesame Street* records and books) might yield "partial support . . . unfettered hucksterism is generally perceived to be inappropriate . . . ."

4. Public broadcasting is "underfinanced at present . . . ."

Yes, these sources could be counted on for "partial support." But "the federal government appears to be the funder of last resort, if quality purposive programs are to be developed and sustained."

Pages of detail supported Dr. Mielke's analysis, e.g., his team learned that there were 63 "federal assistance programs with special relevance to education telecommunication . . ." Their total funds in FY 1974: more than $1 billion. However, the investigators "could detect almost no coordination . . . even within the Office of Education."[4]

On the Road to Coordination. It is unlikely that USOE people needed to be told about this reality. For years, requests for TV program dollars have had to do battle—often

[4] *The Federal Role in Funding Children's Television Programming*, Vol. I, Final Report (Washington, D.C.: U.S. Office of Education, Department of Health, Education and Welfare, USOE, OEC-0-74-8674).

out of their weight class—with petitions to support in other ways the disadvantaged, or the handicapped, or the bilingual populations.

Is coordination wholly out of the question? Among those who thought not in 1976 was Dr. Art Sheekey, Planning Policy Coordinator in the Office of the Assistant Secretary for Education (now with the Office of Management and Budget). At his suggestion, better coordination went on a "menu" of policy issues sent up to the Secretary of HEW. Word came back to prepare a "decision memorandum" on the Education Division's role in funding educational television.

As a start, Dr. Sheekey convened a task force. Meeting on September 28, 1976 12 "outsiders"—from CPB, PBS, the Agency for Instructional Television, professional associations, and agencies such as the Educational Testing Service—joined 18 "insiders" (from the Special Projects Branch, Equal Educational Opportunity Programs, and from the National Institute of Education, the National Center for Education Statistics, and other HEW components). Their charge:

. . . to help HEW planning officials to identify the Department's most important policy issues in the areas of educational television support, and to suggest some viable options for the future.

To Dr. Sheekey's knowledge, this was the "first time that a group like that had ever been brought together." The forest of complications was vast. Even so, as the group talked, realizations of value came forth, such as that

Each year, the Education Division spends approximately $30-$35 million on educational television and radio activities—the coordination of these activities within HEW and with publicly owned and operated television and radio activities is essential.

The task force was to reconvene in a few months, "to deal with some of the specific budget and legislative issues for FY 1978 and 1979." The difficulties had been labelled. Now it was up to this new community of planners to agree on how a future route for *Sesame Street* (and so many other projects) might be laid out and paved.

Issues like these—coordination in government, and long-range funding—may mean little to a child (or to his parent, either). Still, they are vital. What they boil down to is this: how are nationally useful, purposive program series to be kept alive? Tacked to that is another concern. This is whether the needs of young children are being met adequately by 130 hours a year of *Sesame Street*, plus reruns of *Mister Rogers' Neighborhood* and, starting in Fall 1977, *The Electric Company*.

To Joan Ganz Cooney, CTW President, the answer to the second of these questions is quite clear. In September 1976, she put her view into one concise sentence: "There is still much more to be accomplished for our children."

This, of course, calls for new, well-coordinated funding sources. At first glance, it may seem that very big amounts are involved. By public TV's standards, the FY 1978 *Sesame Street* budget of $6.1 million is a big one. But that figure has to be related to the actual exposure that Big Bird and Oscar get. At the rate of four transmissions a year over PBS, the 130 hour-long programs in one season's output break down to $128 a minute of affective and cognitive learning—plus sheer fun!—for thousands.[5] Dr. Davis of USOE says that *Sesame Street* is costing the taxpayer less than a penny a day per viewing child. What taxpayer would quibble about that in the face of the fact that the youngster watches anywhere from 20 to 30 hours a week of television?

As good a bargain as *Sesame Street* may be, it hardly follows that it will keep rolling along without the concerted efforts of a lot of tireless proponents. The risk of taking it for granted is too real; the competition for finite dollars too intense.

With an eye to the heightening and strengthening interest in children's programming, CPB held three seminars in the spring of '77 on this subject and its attendant problems. Representatives of the producers, federal agencies, and the stations attended. The initiative was laudatory. Now that the seminars have ended, however, the work has to begin.

[5] The cost projection does not take into consideration the repetition of program material.

For the School Years

There is a clear need for several changes in the system, but ITV is here to stay. If it were totally abandoned and its finances scattered among Georgia's 188 school systems, the impact would be negligible. And within a few years, we believe, it would prove necessary to rebuild the system.

—*Final Report: The Use of Instructional Television in Georgia.* Battelle-Columbus Laboratories.

We were able to update our math program (through ITV) in less than five years, whereas it would have taken us twice as long in the conventional method.

—A teacher from rural New Glarus, Wisconsin.

This is the only day I have no problem with tardiness. Other days I shut the door at the tardy bell and anyone late must have a note. But on Thursdays, the kids are running down the hall to get to class on time so they won't miss any of the Universe and I program for that week. They really enjoy the programs.

—A science teacher on the use of Kentucky Educational Television's *Universe and I* series.

ITV has finally come out of the basement and up to the front porch where it's visible.

—Robert Fox, Associate Executive Director for Development, Agency for Instructional Television.

The meaning of that old familiar label "instructional television" has changed. The change has not happened suddenly, and it has not been total. Still, ITV—defined here as the delivery of televised instruction—no longer means what it did 15 to 20 years ago.

In fact, ITV today has strengths that it lacked as recently as five years ago. The content is better; so is program quality. ITV uses in schools and efforts to enhance those uses have improved. Certain structures such as the consortium and the regional network have added to effectiveness. Research and evaluation have been intensified. In many ways, there is greater sophistication than ever.

For a certainty, ITV activity has accelerated and broadened in the past few years. Anecdotes, statistics, and testimony of practitioners have poured in. Not all the reports are of fair weather. Nevertheless, in certain ways the horizon has brightened:

- Educators with stature have become more involved in ITV processes. The Eastern Regional Council for Educational Television (ERCE-TV), a collaboration between as many as ten state departments of education and public broadcasters in northeastern states, was going to be incorporated during Summer 1977. Chief state school officers or their immediate associates would serve on the board. One of the main aims: to produce new ITV programming based on common curricular needs as determined by the departments of education.
- A greater variety of programming has become available. WVIZ, Cleveland, estimated in 1976 that its ITV "library" was worth more than $4 million in production costs incurred by consortia and other agencies.
- For the 1975 production of historical dramas titled *OURSTORY* by WNET, New York, there was a unique integration New York, there was a unique integration of curriculum materials in the program-

Produced by Kentucky Educational Television, the series The Universe and I *helps explain to its television viewers some of the arcane facts of the earth's interior as presented in this episode by former outer-spacer Leonard Nimoy.*

making process. To help teachers make better use of the monthly series, project staff published 1.8 million "backpacks" suggesting games, puzzles, role-playing, and other in-class follow-up activities. Some 30,000 copies per program were dispersed to public TV stations; 170,000 were mailed to social studies departments in every junior and senior high school in the nation.

- So-called "utilization"—the work of achieving the best uses of ITV programming in schools—has been stepped up. In 1975-76, KTEH, San Jose, held 150 workshops for teachers and school people. During 1976-77, it expected to have as many as 250.
- Research has taken on new importance. The Agency for Instructional Television put $3,000 into evaluating the consortium program *Ripples* in 1970. More recently, AIT has budgeted $636,000 for evaluations in its Essential Learning Skills undertaking.
- National organizations have shown a greater commitment than before. CPB allocated $218,000 to the pilot development of an Essential Learning Skills series for fifth and sixth graders; and it recently conducted six seminars in early 1977 on the status and future of children's programming. Meanwhile, PBS has expanded its daily transmission of educative series —from just three during morning-midday times in 1973-74 to 24 in the daytime hours of 1976-77.

In some places, the last few years have been a time for reflection. In 1974, the Georgia State Board of Education brought in Battelle-Columbus to study the use of ITV there. That same year, the Kentucky Educational Television Authority formed a study commission "to evaluate KET's progress in fulfilling its mission. . . ." A year later, the New England Instructional Television Research Center surveyed Connecticut's teachers on ITV, and the University of Virginia's Bureau of Educational Research undertook a similar ITV-usage study in the Shenandoah Valley.

These studies and others like them showed that ITV was finally being noticed. At a time of dollar shrinkage and more systematic management of education, ITV was visible enough to make the authorities conclude that it ought to prove its reasons for existence. That, at least, was better than being ignored.

A Difference in Programming

Over the past few years, ITV programming has changed in several major respects. It has become better-designed, better-looking, better-funded. Today, a producer may be turning out fewer series than in earlier times, but the current product will be more durable—because it's better. (As one example, AIT's *Ripples* was in its eighth season of use during 1976-77. Because the quality is better, this ITV series and others like it are that much more shareable, that much more exportable to other users).

In only a short time, program techniques have changed—perhaps as a direct imprint of *Sesame Street* and *The Electric Company*. A few statistics tell the story. In a joint 1974 study by CPB and the National Center for Education Statistics, "ITV Hours By Program Format" showed that 19.8 per cent of the hours included dramatizations. Two years later, a similar survey found that dramatizations had almost doubled (35 per cent). Animation could be seen in only 2.2 per cent of the hours in 1974, but in 13 per cent of the product in 1976. Meanwhile, the long-esteemed lecture had slipped from 34.1 per cent in 1974 to 29 per cent. Demonstrations edged off, too—from 32.1 per cent to 26 per cent.

Changes like these have brought ITV programs closer to the level of "winners" such as *The Electric Company*. They have come at a time when success more than ever is being asked, if not demanded, of the ITV program producer.

He is being asked to share some of the teacher's load in teaching good citizenship and what those in California's Santa Clara County call "education for responsibility." He is faced, too, with the flurry of concern over "back to basics" and a host of new curricular needs—such as America's metrication, information on career choices, bicultural awareness, and affective education.

Time and again, ITV has heeded these calls. Local station, state agency, multi-state consortium—each has responded to expressions of need from the education world. As the nation moved toward conversion to the metric system, this was how three separate entities responded:

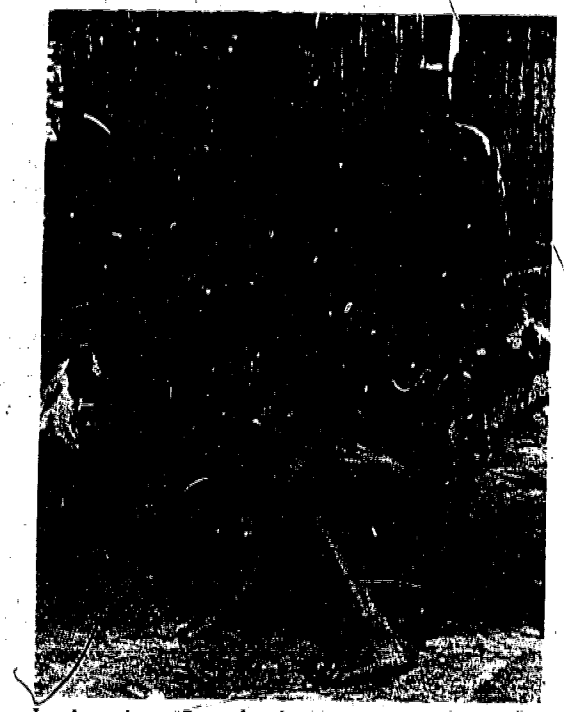
1. KLCS, Los Angeles, produced eight half-hour shows on the "SI Metrics" system for teachers. Titled *Metrify or Petrify*, the series has gone into national distribution through AIT.

2. The Mississippi Authority for ETV generated fifteen 20-minute lessons for elementary children on *The Metric System*, available nationally through Great Plains National Instructional Television library.

3. An AIT consortium has invested $364,000 in a series for intermediate grades titled *Measure Metric*.

Educators have faced other problems—for example, the child with a learning problem. One response came from the Learning Disabilities Council of Virginia. At public TV station WCVE, Richmond, the council produced 15 half-hour program units for college and in-service uses. Titled *The Characteristics of Learning Disabilities*, this series has touched off an unprecedented number of inquiries to its national distributor, Great Plains National Instructional Television Library.

In reacting to these contemporary needs, ITV producers have broken away from the static studio. Assembling *American Scrapbook*, its sixteen-unit history series for seventh and eighth graders, WVIZ-TV, Cleveland went to locations in Pennsylvania, Virginia, Arizona, Ohio, Indiana, Wyoming, Louisiana, Wisconsin, Yellowstone National Park and Nova Scotia. The production team, anxious to tell the story of the white man's arrival in the New World "through the eyes of native Americans," arranged to use



In American Scrapbook, *WVIZ-TV, Cleveland, the arrival of white men to the New World is seen by the Native Americans.*

Indians who still live near Jamestown Festival Park.

KET's series *Contract* also meets a current need in a way quite unprecedented, unique for ITV as little as five years ago. In Kentucky, the law holds that ninth-grade pupils must be able to read above sixth-grade level; if they can't, they must go into a special class. In the words of KET Program Coordinator Sandy Welch, "the Department of Education and ninth-grade reading teachers said, 'Help!' "

It took KET a year of researching to come up with an air-worthy response. The result is *Contract*. It looks and sounds like a commercial-TV game show. Amid applause from his audience of students, MC Kenny Wolin makes a typical entrance. He then states his "cardinal rule," that is, to "Read before you sign!" His so-called "contracts" might deal with careers, or drug use, or sex education. In the show's format, viewers and contestants have to read a paragraph held briefly on the screen, then answer a question about it. A typical statement:

An aptitude test helps tell what you might be good at. It takes into account your interests, abilities, attitudes, and character. Discuss these things with your parents, teachers, and counsellor.

Then MC Wolin pops the question: "An aptitude test helps tell you about (a) your accounts, (b) your abilities, (c) your popularity." Rival teams try to beat each other in being the first to push a button for the correct answer; the winning group amasses game points. A need arose from teachers for a print component with the TV shows, so KET published a book to complement the series.

Programs In the Spotlight's Eye. For anyone in ITV, the move had to be seen as big news. At its January 13, 1977 meeting, the Corporation for Public Broadcasting allocated $218,424 for the Agency for Instructional Television's "Essential Learning Skills" project. Those dollars will help underwrite experimental production. If the pilot tests favorably, then CPB would be prepared to invest much more in the $4,250,000 enterprise. In almost nine years of existence, CPB had not made a like investment in *any* ITV project designed for in-school use.

AIT's goal: to produce 60 fifteen-minute lessons for fifth and sixth graders. After years of concern at AIT and elsewhere for the affective, these units will dive headlong into the cognitive, presenting the essential learning skills—communication (listening, speaking, reading, writing), mathematics (computation, measurement), and reasoning and study skills (inquiry, reference, analysis, organization). Over all, the process from first discussion to completed series will take six years. On an early-1977 time line, the TV units will be ready for use in September 1979.

It would be a mistake to soft-pedal the importance of this venture. AIT's Executive Director Edwin G. Cohen has realized that his organization is preparing a resource "in the most important area for which schools are responsible, the essential skills." Knowing that, he offered this forecast:

If that task is performed successfully, television will have become of education without any doubt. If it can't do it, then television will merit obscurity.

On its present track, AIT expects to start experimental production by midsummer 1977. All-out filming would begin by early 1978. If the first block of 60 lessons turns out well, then AIT would plan to move on to a sequel: essential-skill packages for other grade levels. As Cohen put it, AIT is looking at a "decade of activity."

Meanwhile, these were other program activities, illustrative in microcosm of what was going on in late 1976 throughout the ITV field:

- Starting in June 1973, the Education Development Center, Newton, Massachusetts, had gone to work on a provocative set of mathematics objectives. The product, *Infinity Factory*, paid for in largest part by dollars from the federal Emergency School Aid Act went into distribution in September 1976 through PBS. Initially, 70 per cent of the PBS member stations picked up the series.

  Terri Payne Francis, "IF" producer, offered this project aim: "We hope to present math as a tool that helps children cope with life, to affirm ethnic confidence and pride for our primary target audience of eight to eleven year old Black and Latino children and to help all children understand and appreciate one another's lifestyles and cultures." The Office of Education's Emergency School Aid Act 1973 grant of just over $4 million produced 52 half-hour shows. A second batch of 30 was in the works during 1976-77, for planned use starting in September 1977.

- During 1976-77, the South Carolina ETV Network had six ITV series in various stages of completion. They covered a span from driver's education and South Carolina History to *Blue Umbrella* (Social Studies) and *Getting the Message*, an in-service course for teachers on reading instruction. With all costs included, the six represented an investment by South Carolina of more than $500,000 apiece over a three-year period.

This scene is from an episode of Under the Blue Umbrella, *a TV series in social studies for the first and second graders.*

- *Freestyle* was the subject of a Los Angeles-datelined press release in July 1976. The publicity confirmed the award by the National Institute of Education of $3.8 million to make the "Television Career Awareness Project" possible. The grant came to public TV station KCET on behalf of a six-member consortium. The others shared the workload: the L.A. County Superintendent of Schools, the L.A. City Schools, the University of Southern California, East L.A. College, the University of Michigan's Institute for Social Research, and Science Research Associates.

- *Freestyle's* objective was "to address the problem of pre-occupational segregation by expanding the work awareness of fourth, fifth and sixth grade children." The plans have called for airing of three "project prototypes" (in the words of David L. Crippens, KCET's Vice President of Educational Services, and director of the core committee for *Freestyle*) in Fall 1977. After evaluation, full production will begin on the 26-half-hour series, aiming toward broadcast in 1978. For its executive producer, TV CAP has Norton W. Wright, former director of domestic and international production for *Sesame Street* and *The Electric Company*.

- Kentucky Educational Television's first major ITV project, *Universe and I* (a series of 20-minute earth/space science programs for Grade 8) was completed in 1976. Among its stars was Leonard Nimoy, without his "Star Trek" ears. It had been funded at the level of $200,000 (including $10,000 from NASA). As explained by KET Executive Director Len Press, the series "broke the ice" for the agency in terms of doing further ITV programming. As a sequel to completion of *Universe and I*, the Legislature allocated $600,000 for KET to do three or four more instructional series. Whatever they may be, teachers will be involved in the planning process. "There's enormous value in that," said Press.

This list of examples offers a glimpse at the diversity of program sources that has become available in recent years to the ITV director and curriculum committee. It is not at all necessary for each station to produce programming for its own ITV schedule. Today, national distributors have become prominent as an alternative inventory. Hence, the choices have broadened considerably for the local licensee.

Whether access to these other-than-local program sources led to the tangible decline in local ITV production,[1] or whether a new supply of program material was simply the response to that downward trend, is moot. The fact is that various national distributors —nonprofit and commercial—have been filling effectively what might have been a void. The situation is typified by a remark from Howard Spergel, Director of Educational Services for the Eastern Educational Television Network:

When I came to the network in the late sixties, the ratio of local production to acquisitions from other sources was 70 to 30. Now it's turned around. We have more than $300,000 invested in 1976-77 in acquisitions of ITV series for the network members.

These were some of the agencies serving the national ITV market in 1976, producing programs, or leasing out series made by others:

Agency for Instructional Television (AIT)
The AIT has 15 years of history, much of it under its former name, National Instructional Television (NIT). In 1973, AIT absorbed NIT, retaining its office in Bloomington, Indiana.

Recently, AIT said this about its philosophy: "school television should facilitate the dissemination of the best thinking and practice in important and lasting areas of need for instructional improvement. Thus, school television, at AIT, is seen as an important means for facilitating educational change.".

On one hand, AIT has run a library for ITV users. Most of the 90 series it offered in 1976 had been produced by local stations or regional entities.

Then too, AIT has been taking ever-larger steps in consortium production. Its first move came in 1968 when it started work on *Ripples*. Its latest (ninth) consortium venture, Essential Learning Skills project is underway. In between, AIT has involved 48 states and three Canadian provinces in consortia. One state (Iowa) has taken part in all nine; 18 have joined six or more.

As a variant, AIT worked up a "preproduction lease plan." Under it, a cluster of agencies puts money into series being produced by or for AIT. One example is *Zebra Wings*, a creative writing course developed by the Mississippi Authority for Educational Television, with AIT. These projects have had "neither the scope nor complexity of the major consortium series . . . ."

Nancy Oakes, of Measure Up, *offers first grade math through fun and games; a WCET-TV, Cincinnati, production.*

Setting aside consortium operations, AIT's TV rentals, film sales, publications, and other services brought the agency $2,250,000 in revenue during fiscal 1977—a five per cent increase over FY 1976. The biggest growth was in TV rentals, which rose eight per cent in 1977. AIT expects its 1978 rentals and sales to increase three per cent.

Great Plains National ITV Library (GPN)
Operational for fifteen years, GPN is called a "service agency" of the University of Nebraska. Stated by Director Paul Schupbach, its mission has been "identification, acquisition, storage, duplication, and distribution of extant materials (and) to provide an ongoing, national, self-supporting service."

[1] In 1964, according to the 1974 *Public Television Program Content* study by CPB/NCES, 56.2 per cent of ITV hours were locally produced. A similar CPB/NCES appraisal for early 1976 showed that local production had fallen to 19 per cent.

GPN's catalog for 1977 listed 155 ITV series. They ranged from first grade to adult level (including eight British Open University courses). The series came uniformly from other organizations: GPN does not produce programs. Staffed by 27 full-time people, equipped with 29 videotape recorders, GPN has increased sales yearly since 1972, when its volume was $1,144,325. The latest figure available (1975) was $1,648,240.

In Fall 1976, GPN received more calls "than ever," according to Schupbach, for elementary-level series, but the "most dramatic upsurge" was at the college level. What other trends could Schupbach spot? "Better materials at all levels . . . . video cassette usage up each year . . . I see non-broadcaster users turning even more to national libraries for their materials."

A footnote of interest to producers: GPN reported in 1976 that in 14 years it paid out more than $2 million in royalties to over 50 ETV production centers. For the last five years, annual payments have averaged $245,000.

International Instructional Television Cooperative (ITV Co-op)

Youngset of the producers, the "ITV Co-op" came into being October 1, 1976. It is independent and nonprofit, headquartered in Falls Church, Virginia. By its formal starting date, 85 agencies had joined it, "united to produce the highest quality ITV at the lowest cost."

The Co-op's first three series—*Cover to Cover I and II*, and *The Word Shop*—were produced at WETA, Washington, under the direction of Ray Gladfelter. Then, Gladfelter left WETA to become President and Executive Director of the Co-op. The new agency will continue to use WETA's facilities for the next three years (according to WETA President Ward Chamberlin) whenever it produces within 100 miles of Washington.

The Co-op's Vice-President and Creative Director is John Robbins, a fourteen-year veteran of producing and appearing in ITV series. Three new Co-op series were to go into production in 1977.

Ontario Educational Communications Authority (OECA)

Formed in 1970 as an independent agency of the Province of Ontario, OECA and its 400 employees represent "education in Ontario via television, film, videotape, audiotapes, records, telephone, mail, printed matter . . . ."

OECA's catalog, "TV Ontario," speaks of "bringing learning to life." A fuller explanation notes: "Our programs aren't just educational television, and they aren't just good entertainment. They're both. And our programs are designed into a structured learning experience, backed up by project materials, phone-in discussion and even media literacy workshops. We provide, in short, total television." OECA's 103 program listings stretch from elementary through adult levels. Revenues from their uses in America have tripled since 1973.

To ITV specialists dedicated to both design and creativity, OECA's outlook, stated by station Superintendent Don Torney is certain to be appealing. Says Torney: "We don't just report or put a teacher in front of a blackboard. We never do that. We say: What's the best way to get our message to the audience? Is it television? Is it print material? Is it slides? And we use the whole gamut."

Western Instructional Television, Inc.

Western ITV was established in 1968 as a profit-making enterprise. Los Angeles-based, it has been on its own since 1970.

"A New Concept in Instructional Television" is how Western ITV describes itself. It combines "some of the most experienced ITV teachers" with "a top professional production center." Its 1977 catalog lists 19 series. For the past three years, Western's output has been in distribution in 43 states.

Director of ITV Donna Matson, featured in three of the series, has become a "one-woman band," as she puts it, at Western. She has sold the programs, and as a former TV teacher, conducted in-service workshops. Then, with regularity, she has produced shows, forming a team consisting of a "top teacher," a consultant, and herself. Western ITV has picked familiar faces for its programs, among them Tony Saletan, a music teacher on TV for more than ten years, and Julius Sumner Miller, Walt Disney's "Professor Wonderful."

Commercial Suppliers

ITV staffs have drawn increasingly on a number of commercial distributors to round out their respective schedules. So have several of the existing regional networks,

which have worked out a so-called "group-buying" practice to cut costs for member stations.

Typical of current practice, Southern Educational Communications Association (SECA)—a group-buyer since 1973 as a regional network—bought $302,000 worth of ITV programs (2,200 individual programs) for its members in 1976-77. The savings to them over acquiring the programs individually: $95,000. For 1977-78, SECA will spend an estimated $325,000 on TV materials for members.

A number of commercial suppliers have gone after the ITV market among them familiar concerns such as COE films, Learning Corporation of America, and Encyclopedia Britannica Educational Corporation. At least one indication of the commercial suppliers' penetration of ITV comes from the Eastern Educational TV Network. It has acquired series for its members from at least 25 major firms.

This market penetration of independent suppliers has been spelled out in the CPB/NCES *Interim Report: Preliminary Results of CPB/NCES Public Television Content Survey (January 1 to June 5, 1976)*, issued in October 1976. One of the study's breakdowns dealt with "ITV Hours by Producer of Material." This was the result:

Local	19%
Consortium	9%
CTW	12%
Foreign	2%
Major PTV station	9%
Other PTV station	24%
Independent	22%
Other	3%

It is worth noting again that in 1964—before the era of consortium production, before CTW's arrival with *Sesame Street*—56.2 per cent of ITV production was local in nature.

One might make another point about the programs produced and/or distributed by five agencies cited on pages above (AIT, GPN, ITV CO-OP, OECA, Western). In late 1976, their collective output added up to more than 370 series and individual units. Great Plains National's catalog alone amounted to 3,201 programs. Even if it were not engaged in any local production, a licensee could feel reasonably comfortable about leasing series from these sources to fill the customary 1,080 hours of air time in the school-year ITV schedule.

Cover to Cover, which presents dramatic portraits of literature, is aimed at stimulating reading books.

This hypothetical licensee could find added comfort in another aspect of this sizeable program inventory. Dr. Harold E. Wigren, former Educational Telecommunications Specialist at the National Education Association, commented on this facet in October 1976. He said that he found "definite improvement in quality from producers." Shirley Gillette of WNET offered a comparable response in April 1977. Over the past five years, she said, there had been a "dramatic improvement in the quality and substance" of ITV programs.

With the rise in quality has come recognition. For example, *Inside/Out* won a national Emmy in 1974, and a Distinguished Service Award from the Association for the Advancement of Health Education, in 1975. Ohio State Awards in 1975 and 1976 went to *Cover to Cover*, parts I and II, and a 1976 Ohio State award was given to *OURSTORY*.[2] Note also the 1976 "Best of Festival" Award for *Self-Incorporated* at the American Personnel and Guidance Association Film Festival.

With the awards and acclaim has come something quite new to instructional television. Robert Fox of AIT, who may see as

[2] Singling out one *OURSTORY* show titled *The Peach Gang*, the citation described it as "an impressive example of how moving and exciting instruction by television can be, given adequate resources . . . (T)he dollars were wisely and productively used to create quality instruction."

much of the ITV realm nationally as any other single individual, put it simply: "This is bringing ITV to a level of visibility that it didn't have before."

The State of Utilization[3]

In big type, the Louisiana Educational Television Authority's 1976-77 ITV catalog made a strong opening statement:

(ITV) is no longer experimental, nor is there a need for pilot programs. Rather, it should be a major teaching tool used to improve the effectiveness of the teaching and learning processes.

We encourage school administrators and teachers to work together with the State Department of Education and the Louisiana Educational Television Authority in promoting the use of the powerful medium of television in educating the youth of Louisiana.

The signatures beneath this Foreword were those of J. Kelly Nix, State Superintendent of Education, and A. Fred Frey, Executive Director of the Louisiana ETV Authority. That kind of leverage can help in many ways. But sooner or later, the "working together" must come down to ITV's women and men going from schoolhouse to schoolhouse, meeting with teachers, and, as Messrs. Nix and Frey said, "promoting" ITV use.

There was little likelihood in 1976 of finding the ITV utilization offices overstaffed. To suggest the size of the field forces in the country:

- Connecticut PTV Network had two staff-members to cover the state;
- KTEH, San Jose, assigned two full-time people to work with 635 schools;
- In Maryland, four State Department of Education employees were employed for the task of utilization, one for each of four regions of the state;
- Kentucky Educational Television had six representatives to work the entire state;

[3] Called field coordination in some places, utilization is a familiar job at an ITV-broadcasting station. It might include anything from teacher workshops and handouts of program-series teacher's guides to speeches to parent and newsletter mailings. The burden falls mainly on station staff to do this work.

A scene from "Just Joking," one of the 39 programs of the Inside/Out series produced and distributed by AIT.

- From an early-1976 survey, the Eastern Educational Television Network learned that 24 responding agencies in 11 states averaged one utilization person apiece.

At levels like these, could utilization people be on top of their jobs in 1977? KTEH Manager Maynard Orme, probably spoke for many of them when he said: "It's not as effective as we would like. We can't get around to all the schools." At KET they remember all too well when an ITV representative visited a school administrator who was to be liaison between KET and schools in that district. The visitor found him with his feet propped up on an unopened box of KET's teachers guides to ITV programming.

In a word, life in utilization can be decidedly frustrating and taxing. It can mean driving well over 100 miles on a given day. It can also mean finding too few TV sets available, and too little awareness among teachers that ITV guides are accessible. Some teachers may still be hostile; it is the view of KTEH's Orme that "many are fearful that TV will replace them."

Does all this necessarily result in an unproductive standoff? Not in regions such as the one served by WVIZ, Cleveland. There, field coordinators Esther Dahs and Barbara Wilkes cover 60 school districts between them. In her eight years on the job, Ms. Dahs has come to know two-thirds of the teachers at the elementary level. How do

they see her? As a "resource person," she explains, adding:

When I meet with science teachers, there's no way I can tell them that these programs are the ones they can really use. They know the curriculum best. I serve as a facilitator. I show them a representative sample of programming and then acquaint them with the ways it has been used.

Individual chemistry—being an intelligent, responsive listener—can make a big difference. In 1976, utilization had other things going for it as well. Better programs were drawing a better press and generating better word-of-mouth awareness in the teaching community. Then, too, delivery meant going beyond open-circuit broadcast, enabling schools to have their better-than-ever programs and play them, too, i.e., by off-air taping and closed-circuit distribution within a single school building, virtually at a teacher's whim.

In an ideal world, the end result of these improvements ought to be greater and better use of ITV in schools, the ultimate goal of all utilization effort.

- At WNET, the Education Division reported about 350,000 students using ITV in 1976. The total had been "holding steady" for several years. (In early 1977, the station took a different approach to its figures. Counting all membership, guide sales, and a New York State survey, WNET estimated a total of 650,000 students, including those school districts that pay for the service and those who "bootleg" it.)
- In the 1975-76 school year, South Carolina ETV for the first time broke the one million mark in series enrollments. Its 272,171 ITV students (the year before: 253,029) saw an average of four series each, for a total enrollment of 1,097,032.
- At KTEH, San Jose, in 1976, a using population of 120,000 was much the same as it had been for several years before. The station expected it to stay at that level until the transmitter is moved, as planned, to a more dominant site for greater school and public reception of the KTEH signal.
- WVIZ, Cleveland, has been faced with a drop in school enrollment in the Greater Cleveland area. Even so, in 1976 the station recorded a 20 per cent increase in ITV viewership—918,712, compared with 766,000 the year before.
- In Georgia, average daily classroom attendance has been on a slow but steady decline. In 1969, the average daily attendance stood at 1,013,047; in 1976, it was 985,057.

Against this background, the Georgia ETV Network has encountered these interesting, if not entirely consistent, usage patterns:

Use of the educational guide materials is demonstrated for the series Animals and Such, WHRO-TV, Norfolk, Va.

1. Of the state's 188 school systems, 181 used ITV in 1974, while 173 used the service in 1976;
2. Using teachers went from 18,710 in 1974 to 18,164 in 1976;
3. Individual students exposed to the service numbered 379,477 in 1974, and rose to 487,576 two years later;
4. Counting students on the basis of once for each course watched, the 1974 aggregate total was 949,072, while in 1976, it climbed to 1,109,979; and
5. Students in 1974 watched an average of 2.5 courses, compared with 2.3 in 1976.

As information-gathering has intensified, telecommunications agencies have tried to harvest different types of numbers—for example, how many pupils watch particular series. As a case in point, the head-counting on *The Electric Company* has become of distinct interest. During the 1974-75 school year, WHRO, Norfolk, Virginia, serving ten school systems, found that more pupils had watched *The Electric Company* (19,991) than any other ITV series on a list of 27. The closest competitor: *Inside/Out*, with 17,219 Health Education pupils in grades 3 through 6.

Meanwhile, Kentucky Educational Television brought in various pieces of information about the uses of *The Electric Company* throughout that state. KET reported in November 1976 that its twice-weekly broadcasts of that series were followed by about 130,000 boys and girls, "almost 20 per cent of all the students in Kentucky schools." The agency's data showed further that:

1. Three out of five second-graders (59.8 per cent) were watching this series in 1975-76 as part of language-arts study.

2. Over three years, the trend has risen. In 1973-74, 4,602 Kentucky teachers made use of *The Electric Company*; 115,506 students from special education classes and kindergarten through 10th grade watched it. The next year, 4,818 teachers were following the series, along with 116,742 pupils from K through 12 (even 74 seniors were watching). In 1975-76, both totals were up—4,834 teachers and 129,676 pupils, including 145 in grade 12.

The Number People at Work. While national data satisfactory to all have yet to be assembled, more local studies of teacher usage have been done over the past several years. They may not prove a national pattern, but they can certainly be what KET's Virginia Fox has called "a management tool." (A sampling of these investigations is provided in the Appendix to this chapter.)

Could all the data from different states be married? It seems unlikely. Researchers ask their own questions, working from their own inferences, and sometimes make ill-founded inferences. Alluding to one study, AIT Research Director, Saul Rockman, said it was "very good, but they weren't able to interpret it well. They didn't have a feel for what the material meant."

Even so, the quite separate studies cited in the Appendix at the end of this chapter do have some common threads. Time and again, scheduling conflicts within the schools are cited as a problem. Lack of equipment is mentioned repeatedly; so is lack of appropriate programming. These items may not startle old ITV hands, but they do help in writing the strategy for an aggressive counterattack at all levels of activity.

To Rockman, the present research numbers sometimes can be "unreal." Other types of information may be more important. He recalls the Ohio state legislator who said, "The most important thing I get that deals with school television is a letter. When I get a letter from a parent complaining about a television program, I have to act." Nevertheless, most members of the ITV community would concede today that they still need numbers to backstop their efforts to win higher, more consistent exploitation of televised instruction. CPB's joint effort with NCES on a nationwide school utilization survey should provide more definitive answers to important use issues.

More Use in High Schools? Traditionally, ITV has been used less at the secondary-school level than in elementary schools. In some places, that tradition has been under polite attack in the past several years. At a meeting of secondary-school representatives in 1976 at KET, the message was clear: "We want the material!" WVIZ has spotted "more interest in using the medium at the secondary level."

It would be unwise, however, to expect a real trend in this direction. So far, the national statistics do not shore up any broadside judgments. Putting two CPB/NCES studies side-by-side—one, *Public*

Television Program Content: 1974; the other, a content survey for January 1 to June 5, 1976—presents this comparison:

ITV Hours By Grade Level

Grade	1976	1974
9	12%	11.5%
10	11	11.3
11	10	10.5
12	9	10.0

These figures ought to be seen in the context of total ITV hours as a portion of a licensee's broadcast schedule. In 1974, instructional materials amounted to 17.1 per cent of air time. In the early-1976 content survey, those materials accounted for 21 per cent of the schedule. The long and short of it is that those figures available do not show a trend toward greater uses of ITV at the high-school level.

Nevertheless, there were enough straws in the wind during 1976 to encourage the Agency for Instructional Television to investigate use. It resulted in a March 2, 1977 interim report titled "The Status of ITV Utilization In Secondary Schools: Report Based On a Synthesis of the Responses To an AIT Request." The sampling, while "not scientific," was "representative," in AIT's judgment. The replies, taken in sum, suggested "one possible conclusion" that:

secondary school television is underused, under-financed and unexciting . . .

By and large, the survey showed, ITV use in high schools is "extremely low." Some of the individual answers were sobering:

1. One-third of the K-12 population watches ITV, and one-third of that population is in secondary school.

2. In one area, 61 of 239 teachers said they did use ITV, but 105 could not and 54 didn't want to.

3. Another reply said simply that there was no current contract to provide ITV for any secondary school in the area.

4. Eleven per cent of all teachers using ITV were in secondary schools, but only one of nine teachers in the state was using ITV.

5. Fifteen per cent of all student viewers were in grades 8 to 12.

There were brighter signs. In the Hunting-

Classroom activities prompted by the series Inside/Out.

ton Beach Union School District, one-quarter of the teachers at the high school level said they were using ITV. Meanwhile, the Allegheny Educational Broadcasting Council, serving central Pennsylvania, had two surveys to report:

1. In 1974-75, one secondary teacher out of five used ITV in class.

2. The next school year, 47 per cent of the secondary teachers made use of ITV "selectively" (defined as meaning that the teacher "does not use a 'complete' series, but picks and chooses programs from all series . . .").

In a tighter breakdown, the council noted that of the 47 per cent, 35 per cent used ITV selectively, ten per cent used one to two series a week, and two per cent worked with more than two series a week.

Out of the research came another quantitative note. Total secondary "membership" in the council amounted to about 70,000 students. But because the same student might see more than one series, the total of student viewings came out to 716,272.

As another facet of the 1975-76 survey, the council discovered that 54 per cent of all secondary-level teachers using ITV said they either taped the show, or had it taped by someone else, for later use.

Where does "reality exist" in all this, as AIT put it? The agency concluded that it could be found:

. . . in the pathetically low data on viewership and teacher use, in the reluctance of state and local legislators to turn loose funds for equipment and in the generally low-key but continued cries for help from ITV people at the secondary level.

However, the statistics that support this conclusion divert the eye from what appears to be the most important ingredient of the utilization process. That is the human touch. It can be the making—or the breaking—of better ITV uses in any part of the K-12 spectrum.

At WVIZ, Cleveland, late in 1976, field engineer Joe Vapenik described what he does and what he sees as he makes his rounds:

I'm out 70 per cent of the time, taking care of ITFS channels. The schools are very receptive. They're glad we're around to help solve problems.

I've seen an increase in several school systems, from just having TV in class to a complete system with a couple of closed-circuit set-ups, doing their own origination. Especially the high schools are going into this closed-circuit.

I've seen quite a few more videocassette players in the schools, and more recording off the air. Most of the outlying suburban schools have this off-air capability. It's different in the elementary schools, but they're starting to get into VTRs, too.

Almost every day, Joe Vapenik—"one of my better salesmen," says WVIZ Assistant Manager Alan Stephenson—is out where the ITV action is, joining the field coordinators of the station. Vapenik represents instructional television's new look and what they call "servicing the account" at Kentucky Educational Television. It's tough work. But in the seventies, it has proved its worth. Merged with all the other processes of contemporary utilization, this kind of person-to-person contact is helping greatly —at long last—to bring ITV out of its dwelling place in the cellar.

On the Research Side

The hunt for statistics explicit in the above pages and in Dr. Palmer's article on *The Electric Company* illustrates a clear point. The entire process of researching in ITV has been widely adopted and refined over the past half-dozen years. This more sophisticated approach has been used not only to assess the effectiveness of programming but also to measure the entire service of several statewide ITV systems.

One measurement of the commitment to research is that several national organizations—including CPB, PBS, the Children's Television Workshop, and AIT—have had staff directors of research. Then, too, major projects have generally had a research component although, as one ITV director put it, she had not seen much sign of summative research ("perhaps for lack of funds").

The series Vegetable Soup, researchers found, did bring about "attitudinal changes" in young viewers.

As one example of this research orientation, the Bureau of Mass Communications of the New York State Education Department decided to test the impact of its *Vegetable Soup*, a "multi-ethnic" children's series made with ESAA funds. First offered in 1975, the series was aired that year over 265 TV stations (the NBC network plus PTV outlets). The research exercise:

- Sixteen programs were shown to 200 target age (elementary school) children equally divided by sex and ethnic background.
- After viewing, "several basic attitudes" of the children were compared with those of a control group of nonviewers.
- Researchers learned, according to Osborn Segerberg, Jr., that the series "did bring about attitudinal change in its young viewers." Further:
- "If change was evidenced after viewing only 16 programs, without teacher input, then it may be safely assumed that a much greater percentage of change will be manifested with the use of the previ-

ously tested learning concepts incorporated in the teacher-training materials."

Another ESAA-supported project, *Infinity Factory*, also came under scrutiny. A team of four studied eight programs; the findings were published in June 1976 by the Educational Development Center.

Team members worked up these questions:

- Did *Infinity Factory* shows hold children's attention? Did they appeal to students?
- Did the eight programs meet objectives in learning math, attitudes to math, and social attitudes?
- What did teachers think of the programs' usefulness?

The answers were markedly encouraging. Mean percentage of attention was "very high" (91.3 per cent). Ratings for appeal were also "very high"—all above 2.15 on a 3-point scale. In math, "significant gains" were noted. As one item:

- Before viewing, 34 per cent could round off two-digit numbers correctly. Another 31 per cent left these questions unanswered. Then the children watched the rounding-off show. Afterward, 62 per cent gave the right answers. And seven weeks thereafter, more than 60 per cent could still tackle rounding-off and be right.

In attitude, scores did improve—"significantly." But the team discerned that "attitudinal gains from pretest to post-test were not as great as those found on knowledge of math content."

What of the teachers? After eight weeks, 86 per cent of the 36 replying indicated their overall opinion was "positive."

In Canada, OECA's *Readalong* was independently researched in 1976. The object was to "evaluate the appeal and effectiveness" of the series from the viewpoints of grade 1 teachers of beginning readers, teachers of children having reading difficulties, and grade 1 pupils. Researcher Dr. Harry Silverman, chairman of Special Education, Ontario Institute for Studies in Education, found that:

- Children watched "attentively, and laughed, groaned or squealed appropriately in response;"
- "Most children read aloud as the words, phrases and sentences appeared on the screen;"
- All the teachers questioned approved of the series in its content, variety and structure;
- The teachers considered *Readalong* a "dynamic television teaching tool and as a most valuable instructional aid;" and
- The children, in terms of "absolute liking" for the series, gave it a "high rating."

Meanwhile, in the past several years, another kind of research has emerged in the form of investigation of a total statewide system. Recently, two statewide distribution agencies underwent probing analysis. This was the nature of these investigations.

- A six-person team from Battelle-Columbus had the assignment from Georgia's State Board of Education "to address the real day-to-day impact and problems of ITV as it is actually used in the classrooms of Georgia." Another issue was to assess the role of the simultaneous scheduling of programs throughout the state. Interviewers went to 37 schools, talked to half the teachers, and left behind a questionnaire (all teachers filled it out).

  The team concluded that despite the potential in the $10 million statewide ETV network and high grades for the programs, "the use of television in the classroom is minimal." An "overwhelming" problem (familiar far and wide) is scheduling. Growing departmentalization just stiffened the inflexibility. Then too, only half the teachers had a set in their room. ITV was "likely to remain an alien" unless educators in the field could have some substantial role in working on ITV patterns and content.

  Battelle-Columbus' advice: (1) the network should start a film and tape library and use its lines for "instantly transmitting them when needed . . . ;" (2) an in-school recording-and-distribution-system should be piloted to "document its effect on the use of ITV and film" and (3) one of the nine transmitters ought to be made the hub for a local planning effort, to work on the "problem of integration with local needs and curriculum."

- Set up in 1974 by the KET Authority, a Study Commission arrived at some strong

conclusions in its July 1975 final report on the Kentucky agency. It found that:

KET was created and has remained ancillary to, rather than an integral part of, Kentucky's system of public education. This is a fundamental issue which must be resolved if the potential of KET . . . is to be realized.

Further, the commission looked hard at KET's utilization figures (in 1976, 58 per cent of the state's students were seeing KET's ITV "on a regular basis," according to KET Executive Director Len Press). As a result, the investigators urged that KET "substantially increase" its utilization staff, and its field technicians, as well. There should be a step-up in providing secondary-level materials, a push to make all programs "of the highest professional caliber," and promotion and advertising to boost viewer awareness of KET.

One of the major outcomes of this study was the so-called "equipment project." Starting July 1, 1976, the Legislature made available $1.1 million to match school district investments in TV reception gear. By Spring 1977, 175 of the state's 180 districts has decided to participate (they must put up 40 per cent of the equipment cost). As of May 1, 1977, this was how the districts were spending the money as of May 5, 1977.

1,162 TV receivers (worth $539,730) had been bought, as well as 97 videocassette recorders (investment: $132,000); and 77 new master antenna distribution systems have been contracted for, while 67 systems have been repaired.

The scrutiny that all these studies of programs and systems imply is a relative newcomer in ITV's world. The results can hurt: a pilot program might fall flat in a test situation, or a system might be operating in a blatantly inefficient way. If ITV is more visible these days, then it must expect—and capitalize on—this investigative pressure. On balance, the eventual product and school uses of ITV can only be enhanced.

Out of Today, Tomorrow's Possibilities

Far from the researchers' printouts, the realities of ITV in the fall of 1976 could be found in signal areas all across the country.

On an October morning, Massachusetts Educational Television was transmitting on WGBH *Inside/Out*—a unit called "Travelin' Shoes." West of Boston, at the Mitchell School in Needham, Mrs. Helen George's second grade class watched raptly. The program told about a family's move to a new city; the children had strong, divergent feelings about the move. After the TV was turned off, seven-year-old Christine entered readily into the class discussion. Her family was moving in a few weeks; she didn't want to leave. A classmate, Roger, had moved four times. He was more blasé. At recess, the children took their discussion into the playground, talking animatedly.

This was Helen George's fourth year of using *Inside/Out*. She had found that her pupils could identify with its people and events. She had seen that they could watch the same show more than once, getting something new out of it each time. Gradually, her second graders would become more aware of their feelings, more sensitive to those of others.

Almost from the start of her teaching career 15 years ago, Mrs. George has been using ITV. Last Fall, she was using three series. ITV, she has found, can bring in a kind of enrichment unavailable through other means. Yes, using ITV may take extra work; it may be inconvenient to get a TV set for her room and adapt to the WGBH broadcast schedule. But that's all in a day's work for a teacher, she has decided.

These past two years, teachers at Mitchell have been requesting the use of its 12 TV sets more than before. Most of the use has been in the primary grades. Because grades 5 and 6 have been departmentalized, teachers have found it hard to work the broadcasts into class periods. Practically speaking, they could have used cassettes and recorder-players from the Needham Media Center, but none at Mitchell in late 1976 had tried that alternative. Nor had there been workshops to close that loop; no one had asked for them.

This was the story in the 1976-77 school year outside Boston, and undoubtedly in a number of ITV-using communities. Few in the ITV world could remain unaware of the potentials for change on the horizon.

There is, for example, the matter of school enrollment. In Fall 1976, the K-12 population amounted to 44,393,000, according to the National Center for Education Statistics. That was 1,516,000 less than in 1970. And NCES projects a ten per cent de-

cline by 1984. Could a rise in education's unit cost help ITV? Or will greater militancy and political involvement among teachers turn out to be a countervailing force, stiffening opposition to more media use? A clear view of the education community's stance might be drawn from an April 1976 speech by National Education Association President John Ryor. Exposure to commercial TV, he charged, had led students to "expect to be entertained and never bored by learning." Then he added:

. . . we don't intend to package classroom learning as Sesame Street *for a TV generation and put Big Bird in every elementary classroom.*

Very likely this kind of comment scarcely jostles the women and men of ITV. They have heard much harsher comments and have known much harder times.

On the Road Ahead. In rural Taylor County, Kentucky, and equally rural Richmond County, Virginia, the schools have one TV receiver in each classroom. In Fall 1976, a regional taping center opened in South Carolina's Barnwell and Bamberg Counties to feed ITV lessons to 11 schools through three locally scheduled channels. At the same time, those schools could tap into four statewide channels operated by South Carolina ETV.

This kind of evidence suggests that some districts in America may be closer to the future than others—many others. As WVIZ's Alan Stephenson put it, "Utopia is one TV set per classroom, but the yellow brick road hasn't come along yet." In the Cleveland area, schools have one receiver for 78 children; in Virginia, there's one per 100; in Kentucky, you would have found one per 81 in 1976.

These realities have not prevented practitioners from looking beyond tomorrow in search of trends. And while this report has not aimed at bringing back alive a clinically pure sample of nationwide opinion, certain responses over a six-month interviewing phase serve as harbingers of what at least some agencies and people see ahead.

On the technical side, Donald R. Quayle, Senior Vice-President for CPB, offered this forecast in late 1976:

Television is getting more involved in ITFS, and the possibility of multiple channels via cable in the community, and videocassettes in the not too distant future will be as ubiquitous as the audiocassette. We'll be distributing nationwide materials that will never be broadcast—on a cassette, or into a cable head end, or an ITFS system.

In the field, a state ITV program coordinator reported a "quickening" in area libraries. They seemed to have more playback equipment available than she had seen before. She also found a greater district-level commitment to equipment purchases. In 1976-77, one district, which had had no gear before, decide to equip each of 20 schools with videocassette players. Another decided to install these players in each of six junior high schools. Looking further down the road, this coordinator had high hopes for eventual satellite use: "It will allow us to consider some possibilities that we were not privileged to consider before."

In other areas, the bonds between education and instructional broadcasting were improving, in the eyes of several. Said Howard Spergel of the Eastern Educational Television Network:

I see greater cooperation with the education community. ITV started outside the framework of public education. We did it for them but not with them. I see greater partnership coming now.

In a similar vein, Shirley Gillette of WNET, New York, described in April 1977 how beneficial a reorganization of the station's ITV committees had been. Expanding and diversifying their advisory committee and curriculum utilization group proved worthwhile. "They are far more valuable to us now than ever before," Mrs. Gillette explained. "They have a lot to say to us in guiding the directions of the Education Division."

The trend toward high-quality production will continue. Said Spergel: "I don't think the quality of production is as much of an issue as it was when I came into the business in the late sixties."

There has been a tendency to believe that the job of high-quality programming could very well be left in the hands of consortia. As a state coordinator put it:

There's a well-initiated commitment in the consortium concept. The more audacious steps we take, the more our capabilities grow. Now we're into Essential Learning Skills!

The program, "Last Hour Clash," from The Heart of Teaching *series that deals with issues common to teachers is produced and distributed by the Agency for Instructional Television.*

From another state came the report of a shift away from local production and toward consortium products. Energies were swinging there toward a concentration on better utilization. That, said the ITV program director, is where the emphasis should go over the few years. Spergel added this observation:

The issue of teacher acceptance is still an issue. We're going to have to figure out various ways and strategies so that ITV becomes accepted in the classroom. It's going to be a slow battle.

One unique step toward improving acceptance: licensee involvement in teacher training. WNET conducted a three-credit graduate course in 1976 in conjunction with New Jersey's William Paterson College. The course ran five weeks and offered 45 contact hours. Its basic aim was to help teachers understand the place of ITV in the classroom.

Another trend may help make ITV more attractive to the ultimate user. This is the move toward loosening the limitations on usage rights. In recent years, some ITV series have often had a seven-day restriction. To Dr. Malcolm Davis, Director of the Office of Education's Division of Educational Technology—and to others as well—this has seemed "restrictive." A teacher "should have the program on the shelf for use at the most appropriate time," Dr. Davis added. Hence, his office instituted in early 1977 an audio-visual rights-and-usage policy for series it funds. Two of the requirements:

1. A series must be cleared for six years' use on public TV; and

2. It must be available for 12 years' use in in-school situations (including transmission over education-dedicated cable channels, and ITFS).

Elsewhere, a move toward one-year use rights has become visible. The Central Educational Network approved a policy in Fall 1976 that its members must have a minimum availability of at least one year on ITV program series purchased for CEN group buys. The same policy has been put in place at the Southern Educational Communications Association. At EEN, most series have had the seven-day limitation, but increasingly the network has negotiated for extended, one-

year rights. At KCPT, Kansas City, the part played by rights availability in increasing secondary-school ITV uses was cited by Dian Molton, Supervisor of Instructional Television:

Among (the reasons) has been the adoption of a policy to obtain full convenience recording rights for the full school year of all secondary programming . . . In 1975, at the insistence of our Secondary Curriculum Committee, we purchased full convenience rights for all series, enlarged our secondary programming offerings, and began extensive In-Service at the secondary level. The utilization figures more than doubled in a single year.

So, in various respects, the climate for ITV seemed good in 1977. Program content and quality were continuing to improve. The consortium movement, one key to improved quality, was expanding. Research was getting better—as one national observer put it, "because the schools demand it." Stepped-up field services were certain to translate into higher numbers of K-12 users. And more media applications could be seen as one outcome of the drive to make education, faced with higher costs and dropping enrollments, more cost-effective.

With it all, ITV still faces—as very probably it always will—stretches of tough white water downstream. It must adjust to this kind of reality. In 1976, the Children's Television Workshop stopped production on *The Electric Company*. This series worked. Children learned to read better through watching it. Yet, hemmed in by mounting costs, CTW had to make a decision, one reported by Robert Davidson, its Director of Broadcast Relations:

Rather than cut both Sesame Street *and* The Electric Company *into much smaller endeavors, we chose to put* The Electric Company *into straight rerun and keep* Sesame Street *at the same level of strength.*

The effect of this decision: as of October 1977, *The Electric Company* goes into straight rerun (stations and CTW have already paid for rerun rights through the process of PBS's Station Program Cooperative bidding). By October 1980, the rights will expire.

Can ITV ever upstage that act? Perhaps not—or not, at least, until larger sums of regular funding become available for children's instructional programming. Meanwhile, there is some consolation in the fact that the ITV pipeline has another type of reading-instruction series coming along. The Essential Learning Skills project will be ready for air in September 1979, even before *The Electric Company* fades from public TV channels.

In K-12 ITV, the moral would seem to be that the good is getting better. But even the best has no guarantee that it will last.

Appendix I

Structures in ITV's World

Discussions of noncommercial television invariably turn to—and sometimes get lost in—questions of "structure." The preoccupation with this subject is not hard to understand: The sheer number of organizations is confusing to the outsider, and the relationships among those organizations are vitally important to the professional. The danger, of course, is that too much talk about structure may mean too little talk about performance.

We have tried to minimize that problem by organizing this report around kinds of learners rather than kinds of institutions. Nevertheless, many readers may find it useful to take a concentrated if brief look at the players in ITV's game and see where they stand in 1977. Those questions are addressed here.

The crucial conveyor of ITV remains the single-channel noncommercial station. As it was in the beginning, so it remains today. But the station no longer needs to go it alone.

Over the years, new structures have evolved to share some of the burdens of the entire ITV transaction. Earlier pages told of some agencies that produce instructional programs for the national market. Other structures also help. They range from state and regional networks to clusters of institutions—the consortia—and a national interconnection system (PBS). Of them all, of course, the single station has the license to televise ITV or any other programming.

Definitions do get a bit fuzzy here. Some support agencies have a distinctly dual role: they produce programs and transmit them, too. Others transmit only. Still more distribute electronically and stand on the verge of producing programs. The consortia, meanwhile, produce programming but do not operate an interconnected distribution system; stations have to get their materials through library procedures.

For purposes of some added clarity, we offer some specific definitions from *Public Television Programming by Category: 1976* that should establish a standard.

Definitions

1. Public Television Licensee: A PTV licensee is an organization holding one or more licenses to operate an educational or noncommercial television station. Licenses have been granted to four types of organizations: community non-profit television organizations; institutions of higher education; local school boards or authorities; and state boards, commissions, or authorities.

2. Public Television Station: A PTV station is the unit that transmits a single channel. Each station has its own single noncommercial television signal on transmitter, channel number, and call letters; each serves a community covered by the broadcasting radius of the transmitter (plus translators and cable systems). Thus, the Georgia ETV Network operates stations in eight different locations.

3. Public Television Broadcaster: A PTV broadcaster is the organization (or organizations) responsible for a single schedule of programs in the noncommercial system. Such schedules can be broadcast by one or many stations, but a single schedule describes a single broadcaster. One licensee may be responsible for two or more different schedules; and in two cases a pair of licensees are jointly responsible for the schedule of a single station. Thus, a "broadcaster" may represent one or more stations.

The Nature of Different Licensees

Perhaps the most comprehensible part of the entire ITV process is the station itself —sometimes a program producer, always a transmitter. In recent months, there has been some ferment in the station field. It has affected certain outlets licensed to school boards; it has also touched several of the community stations.

The small band of school board stations has faced change in the last few years, perhaps edging toward the minus side. Roland E. Fenz, PBS's Coordinator of Station Liaison, has provided some perspective. He reports that 87 new PTV stations have gone on the air since 1970. Of them, just three were licensed to school boards. In the years

since 1970, one school station split into two separate licenses, two became community-licensed, another seemed headed for community-license status, and three went under. The 17 remaining school stations still had some bright spots to talk about, such as these:

- Fresno County, California, with its school station, KMTF, has been on the air since Spring 1977. For years, the school board has been operating an ITFS system. The step up to an open-circuit station came, in Fenz's words, after "the school board realized community pressure was great enough for them to go ahead and commit themselves." Evidently to broaden service beyond ITV, the school administration has formed a 36-member community management board for its station.

- In three years, KTEH, San Jose, has boosted its budget from $400,000 to $1.4 million, has doubled staff (to 22), has moved into a plant with five times more square footage, and with the Educational Broadcast Facilities grants, has bought three new VTRs and three color cameras.

  The viewpoint of Maynard Orme, manager since 1973: to treat both educational and community TV programming "with equal concern and respect." Happily, his overall boss, Schools Superintendent, Glenn W. Hoffmann, a member of the AIT Board, is "pro" ITV. As his station diversifies, Orme has staked out a course toward "spending more money to do fewer local programs of higher quality."

At least one ITV-committed station, faced with oblivion, seemed to be reviving itself in the winter months of 1976-77. Two community stations had taken themselves out of the traditional ITV business. Still another licensee was moving to regenerate its service. These were the details:

- Licensed to the Oklahoma City Public Schools, KOKH was under a storm cloud in Fall 1976. At least one school board member favored shutting it down. Seeking outside counsel, the public schools brought in SECA President Robert C. Glazier. He urged a new "philosophy of purpose . . . new professional management . . . improved communication with its many publics . . ." During early 1977, under new management, KOKH was still in business.

- When Ward B. Chamberlin took over two years ago as President of WETA, in Washington, D.C., he found the ITV service had been "cleaned out." Transmissions from PTV outlets in northern Virginia and central Maryland saturated its signal. Instead of head-butting with the competition, WETA opted for a daytime mix of public TV fare, adult series, CTW shows, and selected ITV series (such as *Cover to Cover*, made at WETA). Said Chamberlin: "I don't sense it's any loss at all. Once you get locked into the school schedule, it has a lot of disadvantages. . ."

- WTTW, Chicago, moving to a daytime assortment of public TV fare, has drastically changed its approach to instruction since William J. McCarter's advent as President in 1972. Finding "enormous disenchantment with the traditional ITV notion and product" among local educators, he elected in 1974 to build a new kind of education service completely station-funded. WTTW would carry just those ITV series its staff found to be of "super quality."

  As a further step, WTTW urged schools to buy cassettes and set up libraries. It advised them on what programs they could tape off-air. As a result of the changes, McCarter believes WTTW has moved further ahead and has achieved "dramatically improved" relations with the schools.

- Covering almost 95 per cent of the state, the Connecticut Public Television (CPTV) Network has a potential market of 650,000 K-12 pupils. But the network's ITV service has not flourished as much as top management had hoped (annual budgets averaged $83,705 over the past four years).

  In mid-1976, CPTV brought in Milton Hoffman as Director of Educational Services. A long-time staff member at Great Plains National, Hoffman was to "add a sales-like approach" and get ITV "moving ahead." By Fall 1976, Hoffman and his one associate were stepping up contacts with superintendents, starting workshops, and developing a teachers' newsletter.

- In certain states, a statewide network has

taken on all the functions of the typical single station elsewhere. There is, as one example, the Maryland setup—four interconnected transmitters operated by the Maryland Center for Public Broadcasting. The work of ITV is the province of Angela McDermott, Director of the Division of ITV, State Department of Education. Her office, she reported in Spring 1977, usually has four lengthy ITV series in production at any one time. Not always are they for Maryland's school children alone. At least four fairly recent products—all on reading—have gone into national distribution.

Another structural form, one which has served both the ITV and public functions of the noncommercial broadcasting community, has been the regional network. As the name implies, they operate at a broader level than statewide networks. These were some of the facets of the ITV operations within regional networks during 1976-77:

- **Central Educational Network (CEN)**
  About one third of all work in the Central Educational Network has had to do with ITV. CEN's ITV Council got going in mid-1973. Its purposes, outlined by CEN ITV Coordinator Ted Lucas were exchanged through network and library of shared programming, group buying and running workshops to train staff.

  CEN's 340 per cent increase in ITV program activities during 1976, in Lucas's view, reflected the health of ITV in the region. In eight of CEN's eleven states, "all ITV services have expanded . . . ." Preparing for the 1976-77 year, CEN laid out $268,897 for instructional series, a 172 per cent increase over the year before and worth $54,000 in savings through the group-buying strategy. CEN/ITV's 1976 workshop drew 70 participants. At a later long-range planning session, Lucas found "very heavy support (for) educative services (from) station management." His deduction: CEN "is going to be in the ITV field for a long time."

Three characters on the Book, Look And Listen series produced by the Maryland Department of Education.

- **Eastern Educational Television Network (EEN)**
  Thirty public TV licensees from 13 northeastern states and the District of Columbia, along with ten stations in other parts of the country, belong to EEN. This agency actually has its own electronic interconnection system, which operates 24 hours a day, transmitting (along with other programming) 30 hours a week of ITV series. A member station so minded can simply pick up those 30 hours from EEN and broadcast them immediately over its own air. Or it could tape-record them for delayed broadcast.

  EEN has gradually increased the magnitude of its ITV services for member stations. In 1971, it began acquiring series for them—a practice now widely labelled "group-buying." By negotiating with commercial or noncommercial program distributors on behalf of these individual stations, EEN can and does save them valuable dollars. At last count, EEN had more than $300,000 invested in acquisitions for members. In 1974-75, it distributed 51 series for ITV use; in 1976-77, that figure had risen to 101 (representing instructional series produced by members and acquisitions from outside suppliers).

  Along with other instructional broadcasting agencies, EEN has been involved in what Director of Educational Services Howard Spergel calls a "big new trend" in user rights. Hitherto, many ITV programs were confined to a seven-day period: a station could record an EEN-transmitted program, but then had to play it within seven days. Many parts of the ITV community have seen this as far too limiting. It has only made more difficult the already-complex dilemma of achieving a flexible broadcast schedule. During the past year and more, the trend spotted by Spergel has been to get extended one-year rights when a series is leased. Thus, a station could rebroadcast the programs

at much greater convenience within a year.

EEN has offered these other services, as well:

1. Each summer (in July), it previews for ITV personnel as many as 90 possible instructional series. This becomes a great time-saver for ITV directors and curriculum advisors, who otherwise would have to call in all these series on an individual basis.

2. The EEN library provides a mechanism for the free exchange among members of any ITV series produced by any of them. (The best of these programs are also offered to stations around the nation—"not to compete with the other libraries," explains Spergel, "but to give people options.")

- **The Southern Educational Communications Association (SECA)**
  SECA represents more than 100 stations in 17 states, serving them with a five-person staff and through three member-manned councils. Robert Glazier left KETC, St. Louis, in 1976 to join SECA as president.

Late in 1976, part of SECA's energies fixed on experiments with the Communications Technology Satellite (CTS). Ten SECA members were putting up the money to buy the downlinks for signal reception. Nine were to be in place when CTS distributions—12 hours a week of ITV and PTV shows—began. An ITV Users Committee has been refining a satellite-transmitted ITV schedule for September 1977.

Access to the satellite, as it evolves, will offer SECA stations several distinct advantages. It will provide a highly flexible alternative to normally land-based distribution systems.

SECA has set up a "floating library" of both ITV and PTV programs. Some 63 series or program units were available as of October 1976 without charge to members. By "group-buying," SECA had saved membership ITV budgets $90,000 in 1975-76.

At the same time, the network continued to lean on staff training—one of its "prime purposes," according to Glazier. Annual training sessions have drawn 400 or more people. Glazier also had it in mind last fall to "do something with institutions of higher learning to build in among teachers a necessary tolerance to use ITV."

- **Western Educational Network (WEN)**
  Another regional grouping, the Western Educational Network has served 22 stations in Nevada, California, Oregon, Washington, Alaska, and Hawaii. As a practical matter, WEN's ITV services for members have been, in the words of Program Chairman Paul Corbin, "nonexistent up to now." But in early Spring 1977, he was looking forward to consideration by members of a plan to merge WEN with the Rocky Mountain Corporation for Public Broadcasting's association of noncommercial stations in the mountain states. Corbin was hopeful that the merger might be completed by January 1978.

Should merger be accomplished, it would bring together some 35 licensees. It would also open up eventual access to "four or five" satellites, thus providing the member stations with their own interconnection routing. And it would clear the way for a range of ITV services—group-buying, program exchange, possible funding of program production, area-wide public relations, workshops, and availability of postproduction facilities. If the two-agency merger is agreed upon, the composite network's headquarters will be in Denver.

Generally, these regional groupings of stations have been expanding their range of ITV services for members—or, at the very least, have set about planning to establish those services. At the same time, another structure in the noncommercial broadcasting world has also been augmenting its so-called "educational" services. This is the Public Broadcasting Service, the presence of which deserves comment at several points in this report. To start:

- **Public Broadcasting Service (PBS)**
  The Public Broadcasting Service is the member organization of the nation's 154 public television licensees. Owned and governed by the licensees, it serves both as the national distributor of programs to 272 local public television stations and as the coordinator of numerous station services.

PBS has increased the morning schedule from two pre-school and one primary-

grade program series to 24 program series in 1976-1977 which can be used at every instructional level from pre-kindergarten schools through colleges and adult extension courses.

In the ITV sphere, one of PBS's functions has been to distribute certain instructional series during school hours. Stations have the choice of transmitting the programs as the signal arrives from PBS or of "delaying"—tape-recording the arriving program for local playback at another time. In this category of its educational services, PBS transmitted just three series during 1973-74 for possible school use. By 1975-76, it was sending out 22 series (four of them for college credit) between 9 a.m. and noon. The list had grown of 24 programs or series for the 1976-77 school year.

To heighten program effectiveness, PBS has encouraged the development of ancillary study materials and has coordinated the distribution of these materials among the many agencies involved, from developer to consumer. A conservative estimate of the number of ancillary materials distributed to accompany PBS programming in 1976-77 is 150,000.

PBS neither funds nor produces television programming. However, the staff reviews program proposals submitted by the stations and by independent entities to funding sources—government agencies, foundations, corporations, CPB—and encourages the development of an educational component to accompany those series which provide in-depth learning opportunities.

The role of the Public Television Library of PBS has helped in expanding formal learning for adults as well.

Age of the Consortia. Within the past decade, still another structure has taken shape in the ITV industry. This is the consortium, variant of an organizational alternative evident for half a century in higher education. The whole key is the pooling of institutional leadership, strengths, and money to pursue mutually agreed-upon goals.

The effective application of this formula to ITV probably amounts to one of the most important chapters in any account of instructional broadcasting's progress during the seventies. Of necessity, much of the generic paragraphs of that account would deal with the nine consortia formed by National Instructional Television and its successor, the Agency for Instructional Television.

AIT Executive Director Edwin Cohen and his associates got into the consortium game, in his words, "to accelerate the diffusion of desirable change in education." For a time, the combining of resources from different organizations was hardly systematic. Then Cohen and his colleagues saw that:

. . . what we ought to do is regularize the process, rather than do each project on an ad hoc basis. Let's get an organization dedicated to pooling of resources, governed by the key agencies—the state education departments—and see if we can cut it on our own!

That formula dictated the structure of AIT, and the agency has cut it. Step by step, consortium ITV series investments went up—from $1,500 a program, to $500 a minute, to $1,000 a minute. *Ripples* was budgeted at $270,000. That was consortium number one. Essential Learning Skills, the project of the ninth grouping, will run up to the level of $4,250,000.

Looking backward, AIT summarized in 1976 the characteristics of its materials. They should have these points in common:

1. High quality—instructional, creative, and technical.

2. An integration of ITV with other important materials to comprise an entire lesson.

3. A significant body of material, i.e., at least one lesson per week, for half or all the school year.

4. Content "new enough to facilitate change in classroom practice but not so new as to be beyond the grasp of teachers and schools. . . ."

5. The subject must represent a real priority of the schools.

Another aspect has materialized in the shaping of the AIT model: its structure has embodied a cure for the "We-ITV, They-Educator" headache. The agency is essentially governed by chief state school officers. For 1977, six members of the 16-person Board are chiefs in their respective states; two others are county superintendents. This

arrangement has led AIT to make this frank assessment of its stature:

The consortium development process places AIT in the marketplace of education, making AIT a partner with educational agencies in the process of curriculum improvement and reform.

Without question, the premise of bringing educators into systematic association with instructional broadcasters makes manifest sense—and AIT's track record, with its nine group-sponsored projects, substitutes practical results for the theoretical. AIT has come to stand as a model for possible emulation elsewhere.

Under the mantle of the Eastern Educational Television Network, a parallel "collaborative" (as EEN's Howard Spergel labels it) has been under discussion for some two years. In Spring 1977, Spergel expressed the hope that this new agency would be incorporated by August 1977 and "active" by that fall.

The agency's title is the Eastern Regional Council for Educational Television, Inc. It will be open to all state departments of education in the northeastern states. Initially, this partnership between broadcasters and educators will have about ten states represented in it. Spergel defined its broad purpose:

What we want to do is to produce new programs in the EEN region based upon common curricular needs identified by the state departments of education. We will create these projects with them. One objective we have is to integrate TV into the fabric of curriculum design.

The consortium trend has its real strengths. In it lies the probability that ITV materials of genuinely high quality will be turned out. Yet there may be concomitant hazards. AIT's Robert Fox explained one of these in late 1976:

As projects become more and more comprehensive, the decision-making level for getting involved in (them) has to go up and up and up. ITV is being forced up to those high administrative levels to the people who make decisions. In a way, it's very good. But it can be very bad if channels don't exist in a state and you have to work for a year to develop them.

ESAA's Progeny. Resources for program material must also include the role of the federal government, specifically the Office of Education. The story of ESAA needs to be told. But like the books of the Old Testament, it covers many hectares—more than enough for the pre-K and K-through-12 sections of this report (for both of which it is relevant). So the story must be told selectively.

ESAA began with passage in 1972 of an act—the Emergency School Aid Act. Its storyline leads to a dilemma now being confronted in many chambers of the Department of Health, Education, and Welfare (DHEW). The discussions have to do with how, and how much, and how much longer the federal government should support children's TV programming. Like the Dutch Elm disease, these questions have become the target of a search for remedies; like the tree blight, the dilemma will still be around when this report is issued.

ESAA grew out of perceived social need. In the words of Dr. Thomas Fagan of USOE, it was to:

. . . assist school districts to carry out desegregation plans, to encourage reduction of minority-group isolation, or help overcome the adverse educational effects of minority-group isolation.

As Chief, Special Projects Branch, Equal Educational Opportunity Programs, Dr. Fagan administers both the "discretionary" part of the act and the educational TV facet of the program. Major responsibility for operating the ESAA-TV program, including development of guidelines and setting forth resolution to policy matters, rests with Dr. Dave Berkman ESAA-TV Program Officer. ESAA sets aside a minimum of three per cent of its total appropriation for TV projects. Normally between three and four per cent of the appropriation is used for this purpose. To some, this "set-aside" is for children's television. Not so, says Dr. Fagan. Rather, "it's money to carry out one of the purposes of the act, of which television becomes a vehicle."

By late 1976, Dr. Fagan's office had awarded $44 million in grants, since the inception of ESAA, for act-related TV series. As the Nielsen figures implied, preschoolers have watched the product, whether the producer had that precisely in mind or not. Dr. Fagan offered an important distinction about these series:

We made a decision early on to develop shows that would stand by themselves and have a good deal of use in out-of-school broadcast time, as opposed to ITV. We've downplayed in-school purposes out of a belief that the mechanism of delivering things to kids in-school is just not functioning well.

Special Projects Branch has had no locked commitment to distribute series through public TV alone—*Vegetable Soup*, product of the New York State Education Department, ran in sustaining time on the NBC network at 8 a.m. Sundays. Dr. Fagan's office has been much more concerned about reaching children, through either public or commercial TV, and thinks its chances are better in nonschool hours than in-school.

When Dr. Fagan's staff launches a Request for Proposal, it reflects the act's concerns for "integrated children's TV of the cognitive and affective type." In the first year, only national series were funded. After that, the Branch solicited regional projects, "directed at a minority indigenous to a particular region." An applicant has had to prove his concept by doing a pilot, evaluating its impact on target audience, then running the results before the Special Projects Branch.

Seemingly, Dr. Fagan and his associates have had a special kind of problem. Limited to ten projects a year, the office has an easy decision when one takes a header: the project officer just "cuts it off." But, as the Mielke Study noted, a success gives the Branch a more stubborn headache. Even the bell-ringing winners, so to speak, have to resubmit a proposal every year to earn continued funding. In some cases, previous winners have come up losers. *Vegetable Soup* was funded the first year, then not funded in the next year in which it applied, and in Fiscal Year 1977 it is being supported once again. Producers have a hard enough time without that kind of on-again, off-again underwriting. In Dr. Fagan's words:

There's nothing static in this field. We don't decide these things lightly. We try to get a lot of input—from PBS, our primary distributor, and others in the field. We make an effort to find out if others are doing something we might want to, then try to avoid that.

Of the projects funded since 1972 or now in the works, certain ones have had a basic bilingual character:

- KLRN's *Carrascolendas*, 130 Spanish/English shows for youngsters three through nine;
- *Villa Alegre*, a product of Bilingual Children's Television, which will add up to 195 half-hours for Anglo and Latino children three through nine;
- *Mundo Real*, project of the Connecticut Public Television Network, providing 30 half-hour bilingual units for those seven through twelve; and
- *La Bonne Aventure*, which the Maine Public Broadcasting Network is producing for children four through eight who have a French-Canadian heritage, and
- *Que Pasa, USA?*, which focuses on the generation gap in a typical Cuban-American family, is designed for youngsters 12 and above and produced by Community Action and Research Company in collaboration with WPBT, Miami, Florida.

Under the act, projects must hire members of minorities for "responsible positions in development, production, and administrative" staffs. According to ESAA's Dave Berkman, this has meant that between 60 and 70 per cent of those working on a project will be "non-Anglo." In fact, 15 to 17 project directors hired were representatives of minority groups.

While the Special Projects Branch does not control content, this employment mandate has resulted, according to the Mielke Study, "in USOE officials forcing grantees/contractees to make personnel changes." However, Fagan and Berkman indicate they "are aware of no personnel changes which have resulted from ESAA funding" in any operation. They also indicate that Dr. Mielke ignored the ESAA-TV legislation that mandates that the series producers "will employ members of minority groups in responsible positions in development."

Another issue which ESAA raised concerned program rights. A producer is obliged to buy long-term rights and clearances, thus precluding payment of residuals to performers. The ESAA position here is that buying long-term rights does not "preclude" payment of residuals—it simply pays them in advance. Hence, the rights purchase "pays" persons for residuals before they are actually earned through rebroadcast. This obligation led CTW's Robert Davidson to say "we could never have produced *Sesame*

Street under an ESAA grant." Kentucky Educational Television's Executive Director, O. Leonard Press; was even more emphatic:

Produce under an ESAA grant? No thanks! I wouldn't even let the state dictate like that, and don't. We don't let the Department of Education executive-produce.

Still, the ESAA-TV set-aside holds allure. With national awards available of up to $3.5 million, one can understand why: dollars of that magnitude can rarely be found elsewhere.

In their fifth year now, Dr. Fagan and his staff know of some changes they'd like to make. They want better dissemination of product. Says Dr. Fagan: "I think we need to get much more into the distribution end of this. We need to look harder at commercial usage on a sustaining basis."

To promote several ESAA series this year, the office was going to go commercial. "The major thrust here," explained Dr. Fagan, . . . *will be the award of a contract to promote commercial station carriage of the series. Among the tasks which the contractor will perform in furtherance of this effort, will be visits to each commercial station in the largest 60 markets, plus presentations at each of state broadcaster association annual meetings. The major input in the operation of the contract will come from the producers, not the Office of Education; the contractor will, in effect, be the agent of all the producers and will be acting in their behalf.*

At the same time, ESAA was setting out to study the audiences. "We have very little choice," explained Dr. Fagan. "It doesn't do much good to spend millions to put stuff on when you have very little idea as to how it's going." By Fall 1977 Dr. Fagan would hope to have some answers "on where we want to go in distribution to get a target audience."

Appendix II

A Sampling of Utilization Data

As Chapter III noted, teacher usage of ITV is being studied more closely at the local level. Although these local studies vary in design and quality and cannot be assembled into satisfactory national data, they are important in their own right. They provide the best information we have on how much ITV is used, and its impact in the classroom at least until the national CPB School Television Utilization Study is completed in the late Fall of '77.[1]

This section summarizes a few of the investigations that have been completed since 1974.

"Connecticut Instructional Television Survey"

Conducted By: the New England Instructional Television Research Center (NETRC): Dr. Bernard Z. Friedlander, Director, and Harriet S. Wetstone, Research Coordinator.

For: Division of Instructional Services, Connecticut State Department of Education, June 30, 1976.

- Here, the purpose was to analyze "the extent of television use in Connecticut public and parochial schools and factors influencing use or non-use." In its method, NETRC surveyed 2,133 teachers in 711 schools. Responses came in from 65 per cent of the schools and 1,190 teachers (55 per cent). Some 665 added personal comments.

- The breakdown of answers was this:

  1. Sixty-eight per cent of the teachers have access to a TV set (always, 43 per cent; sometimes, 25 per cent);
  2. While 68 per cent have access, only 30 per cent were using the set more than once a month;
  3. At the elementary level, 70 per cent used film strips most often; 45 per cent used film; 24 per cent used audiotapes; and 12 per cent used TV;
  4. Attitudes toward the use of ITV programs came out being more positive than the extent of their use in the classroom;
  5. Almost half the comments showed that scheduling was the "single most influential factor" in determining the use of ITV;
  6. Only 12 per cent had had some training in ITV use, but 58 per cent "indicated interest;"
  7. The majority of comments said that "ITV was an excellent educational tool which they would use more often were it not for problems involved in using it;"
  8. Personal interviews added weight to the survey, showing soft spots in communication between station and teacher, that ITV "suffers from a less than shining image" (thanks to commercial TV), that secondary teachers "almost completely rejected the educational broadcast schedule," and that TV, "marvelous as it may be, is only one experience among many to be fitted into the school day."

"An Assessment of the Utilization of Instructional Television Programming"

Conducted By: Barbara Cole. For: TV Section, Illinois Office of Education, 1975-76.

- A report form went to 84 districts in the Chicago suburbs, each with 3,000 or more students. Thirty-four replied. The purpose was to see how much the districts were taking advantage of ITV series transmitted by WTTW. The answers from 40 per cent of the total showed:

  1. On a list of eight ITV series broadcast, *Bread & Butterflies* ranked first, with 188 teachers in 22 districts using it. Some 101 teachers were working with *Inside/Out*, while 70 were using *The Wordsmith*.
  2. Twenty-four districts had made guides available to teachers; three had not.

1. Preliminary data shows a very high response rate across the nation by Superintendents, Principals and Teachers. Preliminary results are described in Appendix III, p. 53.

3. Sixteen districts reported that all schools had TV sets for classroom use, while 14 answered "some schools" had TV units. One district said no schools had receivers. (IOE's Television Section saw that it would need more data on sets available.)

- A second survey was conducted in two areas of Illinois (downstate, and Chicago suburbs). The objective was to develop a sample of ITV-use data. Eighteen district administrators were interviewed. Some of the results were:

  1. A total of 27.5 per cent said their schools used a "substantial or maximum amount" of off-air ITV in 1975-76. Another 22 per cent used "a minimum of the ITV programming (plus a considerable amount of other media resources . . .)." Then 5.5 per cent used cable, in the main; another 5.5 per cent used local production combined with cable, and 16.5 per cent used no TV or media, or almost none.
  2. About half said that the distribution systems available did not "adequately" serve possible users.

"ITV Utilization in Kentucky"
Conducted By: KET. For: Kentucky Educational Television, November 1976.

- KET's intrastate research efforts represent perhaps the most substantial analysis of ITV uses since *State of the Art*. A mountain of data have been collected. Much have allowed comparisons across three school years.

- The findings must be looked at in the light of a dip in school enrollments in Kentucky. In 1973-74, the total stood at 709,764; the following year, it was 701,373, and then in 1975-76, the numbers dropped once more to 691,612. In that same period, students using ITV have increased. In 1973-74, the average number viewing a single series was 33,477. The next year, it rose to 35,207. And in 1975-76, the average per series was 36,323.

- Over those three years, public schools have shrunk (from 1,455 to 1,407). But the percentage of schools using KET's ITV has held firm—74.77 per cent in 1973-74, 75.10 the next year, 74.58 in 1975-76.

- For 1975-76, KET found that 446,126 students had viewed its ITV. These unduplicated pupils amounted to 58.29 per cent of the total potential. Grade by grade, the numbers make interesting sidebars. An Ivory-pure 99.30 per cent of Special Ed pupils watched. KET Research Director Patty Jones inferred that teachers of these classes "may have the TV on all the time because at least one child can benefit."

  Nine of ten fifth graders were watching (90.17 per cent), and more than eight of ten fourth graders (83.44 per cent). And while an expected slip-off occurred at grade 9, the high school viewership is still of interest: two out of ten ninth graders, 16.22 per cent of tenth grade students, 22.07 per cent of the juniors, and 15.03 per cent of seniors.

- Kentucky's teachers were most responsive in sending back KET's questionnaires. In 1973-74, 99 per cent came back. The next year, 87 per cent were returned. Then, in 1975-76, 15,952 of the 24,600 classroom teachers (or 65 per cent) responded. From their replies, KET concluded that:

  1. Over all, 52 per cent have used KET's transmissions. Of those having a TV set in class or accessible, 66 per cent made use of KET. And 79 per cent of all those actually having TV in class have used the Lexington broadcast service.
  2. What were the major reasons for nonuse? Some 42 per cent said it was because they did not have a set. Next, schedule conflicts (30 per cent) was a major reason. Inapplicability of KET programs, 24 per cent, followed as a reason for nonuse.
  3. Broken out by subject area, social studies teachers turned out to be the largest KET consumers (42 per cent of them). Then, language arts followed with 34.8 per cent; science, 35.5 per cent; math, 30.3 per cent. The lowest consumer group was vocational education with 5.4 per cent.
  4. KET cut the usage figures another way. It found that 70 per cent of the Special Ed, first, and second grade teachers used ITV. Next came 65 per cent of teachers in grades 3, 4, and 5. About 56 per cent of sixth-grade teachers were users, and three of ten assigned to grades 7 and 8. At the high school level, ten per cent worked with the

broadcasts (although two of ten have TVs in their room).

5. As for awareness of ITV-related print materials, KET users in Grade 1 print materials, KET users in grades 1 through 6 reported this way; 80 per cent knew about the materials, and 20 per cent did not. As for nonusers in those grades, 57 per cent were aware of the guides, even though they didn't work the broadcasts into their classes.

- KET took another tack. It surveyed superintendents throughout the state. Of 182 superintendents (79 per cent) replied. These were some of their responses:

  1. To them, the biggest reason for nonuse was the headache of scheduling (four out of ten opinions).
  2. Nine of ten judged ITV as being designed "to improve the level of instruction in the classroom . . ."
  3. Seven of ten said they talked up the uses of KET school telecasts in staff meetings.
  4. The superintendents said they had been visited by a KET person about once a year. Six out of ten felt that KET would do better to have "direct contact with teachers," rather than with an intermediary.

"Use of Instructional Television in R.I. Public Schools, 1975-76"

Conducted By: Research and Evaluation, State Department. For: Rhode Island Department of Education, October 10, 1976.

- This was a pilot survey of principals and teachers that assessed use of ITV.
- Fall, winter, and spring mailings to principals drew 301 replies, or more than 80 per cent of administrators in the state. Among other responses, this one had links to surveys done elsewhere:

  1. Queried on the main limitations to ITV use, 65 per cent identified scheduling difficulties as the main one. Next, 31 per cent cited "available programming not appropriate," while 23 per cent blamed "poor reception." In fourth place: operating TVs not accessible (16 per cent). Teacher resistance ranked fifth with ten per cent. These answers, merged with others in the survey, led investigators to conclude that "school principals do not consider a lack of operating TV sets to be the major problem restricting ITV use."

- In its teacher survey, the department requested a log of TV use, for fall, winter, and spring. These were some of the results:

  1. In elementary grades, nearly 60 per cent said they made some use of ITV. At the secondary level, 27.8 per cent reported some use. In total, 41 per cent said they take advantage of ITV—from less than one hour a week to more than two hours weekly.
  2. Under programs actually logged, elementary teachers showed an average of 1.46 programs a week, while those at the secondary level averaged 0.49 programs a week. The average for the complete sample: almost one program a week.
  3. What hindered their use of ITV? Scheduling (49.1 per cent) and lack of appropriate programming (34.1 per cent) topped the list. Lack of receivers was checked by 19.1 per cent.

  As to the concern over appropriateness, secondary teachers checked that problem more (46.1 per cent) than did those at the elementary-grade level (24.9). The investigators expected it might be surprising for some that more elementary teachers thought scheduling was a problem than did those in high school grades (58.6 per cent to 26.9). "Perhaps scheduling is not a problem," they suggested shrewdly, "unless you have a program you want to schedule."

"Utilization Survey"

Conducted By: Wisconsin Educational Communications Board, 1975-76.

- In a survey bridging instructional TV and radio the ECB reported that 56 per cent of the elementary and secondary school districts in the state were using radio and TV instruction.
- More than one-half of all students were involved in instructional broadcasts during 1975-1976; 652,748 pupils out of a total school population of 1,136,669.

Appendix III
School TV Utilization Study: Preliminary Findings

Just as this book was going to press, the preliminary result of the School TV Utilization Study (SUS) became available. Although these findings are still tentative at this time and represent only a small portion of the SUS data which will be reported more fully in 1978, it was thought important to include them since they represent the best data on the current status of television for instruction in our nation's elementary and secondary schools.

Background

One function of the Office of Educational Activities at the Corporation for Public Broadcasting (CPB) is to gather information about the uses of noncommercial radio and television in instruction. Another function is to document ITV's successes and failures and to encourage the formulation of policies and practices which yield maximum benefits from these media to learners. The provision of timely and accurate data on the condition of education is also one of the missions of the National Center for Education Statistics (NCES).

After reviewing more than 15 statewide studies conducted by school systems, State Departments of Education and public television licensees, it became apparent to both organizations that it was impossible to aggregate the findings in order to derive a nationwide perspective. A nationwide study had to be designed and implemented. The study was implemented by CPB and endorsed by the American Association of School Administrators, Association for Educational Communications and Technology, Council of Chief State School Officers, National Association of Elementary School Principals, National Association of Secondary School Principals, National Catholic Educational Association, National Education Association, and the Public Broadcasting Service.

Study Design

The study involved a stratified random sampling of all public school superintendents, principals and classroom teachers in all school districts in the United States with enrollments of 300 or more. It also involved a sample of elementary school teachers and principals and superintendents from Catholic dioceses (representing the private sector). Questionnaires were designed, field tested, modified, re-tested and sent to 933 superintendents, 1,850 principals, 3,700 classroom teachers. After three rounds of follow-up (which included a postcard reminder, mailgram and telephone call) usable responses were received from 899 superintendents (96.4 per cent), 1,648 principals (89.1 per cent) and 3,152 classroom teachers (85.2 per cent).

Responses were carefully checked manually and by a computer editing process to guarantee accuracy of the data. Westat Research, Inc. assisted in this and the sampling phases of the project.

Preliminary Findings

Detailed analysis of all the findings will require six months to a year. The results of those analyses will be described in a series of publications to be prepared jointly by CPB and NCES. A few of the most important preliminary findings are described here. Although the data presented are based on samples, they are not likely to differ by more than a few percentage points from the results which would have been obtained from a complete canvass of all public school districts, schools and teachers (in districts enrolling 300 or more students) and all Catholic dioceses, elementary schools and teachers. Those numbers are estimated to include 12,000 superintendents, 90,000 principals and 2,275,000 teachers. Specific measures of sampling reliability of the estimates will appear in forthcoming reports.

A somewhat broad definition of "ITV" was used throughout this study. ITV was defined as "any in-school uses of television (either broadcast or recorded) for instructional purposes."

1. **Attitudes Toward ITV.** All respondents in each group (i.e. superintendents, principals, teachers) were asked a series of questions which provide an overall picture of

current attitudes toward ITV. In one instance, they were asked to agree or disagree with a list of nine statements about ITV. Most agreed with the positive statements and disagreed with the negative statements, thereby exhibiting positive attitudes toward ITV. Distribution of responses was similar for superintendents, principals and teachers. Teacher estimates are shown in Table 1.

2. **Usefulness of ITV.** A list of 12 potential uses of ITV was presented and the respondents were asked to rate each as important, unimportant, or neither. Again, there was general agreement among the three types of respondents. Teacher ratings of the uses are shown in Table 2.

3. **Facilitators and Hindrances.** All respondents (both users and non-users) were provided a list of 12 factors which were considered to facilitate the use of ITV in some cases and hinder its use in others. They were asked to check only those which were the major factors in their own use of ITV. (Some were viewed as facilitators by some teachers and hindrances by others.) Table 3 shows the factors and their estimated frequencies.

4. **Availability of ITV.** All respondents were asked whether ITV programming is available to them in their classrooms either directly on-air or by videotape or film. It is estimated that ITV programming is available to 1,627,000 in their classrooms.

5. **Delivery Methods.** Where ITV programming was available, teachers were asked to indicate the delivery method(s) by which it was available. (Since programming is sometimes available from more than one source, the sum of the following teacher estimates will exceed 1,627,000.) These sources are shown in Table 4.

6. **Equipment Availability.** It is estimated that TV sets are available to 1,497,000 teachers throughout the country. Approximately 991,000 have only black-and-white sets, 237,000 have only color sets and 269,000 have both black-and-white and color sets. At least 42,000 teachers who have ITV programming available do not have TV sets available to them. Some respondents indicated that they brought their personal TV sets to school for special occasions.

Teachers were asked directly whether there was equipment available in the school to record and/or playback a TV program; It is available to approximately 880,000. This is substantially higher than the number (585,000) earlier reported to have cassette/film/videotape as a major method of reception in their classrooms. Since both of the questions asked something slightly different, it is possible that both estimates are correct —880,000 have videotape equipment available, but only 585,000 view it as a major source of ITV programming.

7. **Use of ITV.** "Regular use" of ITV was defined as using approximately 75 per cent of all lessons in at least one series. Approximately 727,000 teachers are estimated to use ITV regularly. We estimate that 651,000 could name the series they used and provide additional information about that use.

Of all those using any ITV series, 58.4 per cent reported using two or more series.

The survey instrument asked teachers who use ITV regularly to indicate the number of students with whom they use each series. This did not provide an unduplicated count of students since the same student might watch two or more series with one teacher. Two methods were employed to estimate an unduplicated count. First, if one assumes (a) that the 727,000 teachers who use ITV regularly use it with their entire class (which most do) and (b) that the national pupil-teacher ratio is 20.5:1, then the estimated number of students who watch ITV regularly is about 14,900,000.

The second way in which an unduplicated count of students was estimated was through a parallel student survey which used a subsample of 375 public schools to reach students directly. That study (which was funded in part by the Agency for Instructional Television) found that 35.2 per cent of all the students viewed ITV at least once during the preceding four week period. This converts to approximately 15,400,000 students, an estimate within 2.9 per cent of the estimate derived from the main teacher survey.

8. **Training.** Approximately 17 per cent of the teachers surveyed reported that they had had "training in the use of a specific ITV series or the use of ITV in general." Most of the teachers with ITV training had taught for more than three years (see Table 5.). In fact, more than half had more than ten years teaching experience. This pattern follows the pattern for the total teacher population.

For those teachers with ITV training, the type of training most often received was through college compared to other less formal approaches such as in-service workshops (see Table 6). More than half had received their ITV training within the last three years; less than one-fourth reported that training was required by State/local authorities; less than one-third reported that college credit had been earned for ITV training and one in ten reported that district in-service credit had been earned for ITV training (see Table 7).

When comparing the attitudes toward ITV of teachers with and without training, a distinct pattern seems to emerge. In nearly all of the potential uses of ITV, proportionately fewer teachers with than without training felt "neutral" toward the use of ITV. The training seemed to increase the endorsement of ITV.

The influence of ITV training may be that it heightens awareness of and commitment to a specific ITV activity or position. Teacher attitudes may crystallize—either positively or negatively—after or during training rather than remain indifferent or neutral. New or added information gained from the training may tend to promote distinct positive or negative attitudes.

Training also seems to be related to the amount of use of ITV. Proportionately more of the teachers with than without training were more current users of ITV (see Table 8). They also spent more time per week using ITV (see Table 9) and devoted more time to integrating ITV with other classroom activities (see Table 10).

Implications

With only the preliminary analyses completed, only general implications can be suggested from the findings of this study. However, some patterns are beginning to emerge. Approximately 30 per cent of all teachers use ITV regularly. Slightly more than 30 per cent of all school districts make available in-service workshops on the use of ITV and approximately the same number have someone who has been given responsibility for ITV in the district.

More than 50 per cent of all educators expressed positive attitudes toward ITV, while fewer than ten per cent view it negatively. There is still a large body of educators (approximately 40 per cent) who have not formed strong opinions about the medium.

A major implication which is apparent even at this early stage is that ITV is being used regularly by 15 million children—approximately one out of three school aged children.

The findings indicate that ITV is available in some classrooms where no equipment is available. They also show that almost 30 per cent of the classrooms in this country do not have access to ITV programming. Further breakdowns of these figures by type of school (elementary, secondary, middle-junior high) and further analysis of the relationship between these variables and the extent of use will lead to recommendations and policy considerations.

Further Analyses

Detailed analyses of these data will continue into 1978. The findings will be released in a series of publications from CPB and NCES. Upon completion of those reports, the data will be made available to other serious researchers who might wish to pursue some questions further.

For the first time in the history of the use of television in school, a comprehensive data base exists which describes the status of instructional television. It is the hope and expectation of the organizations which funded this study that the data will be seen by educators as baseline data and that there will emerge from the study a sense of urgency to continue to develop television for instruction and to monitor the progress made.

Table 1: Overall Teacher Reactions to ITV (Teacher Estimates)
Please indicate your reaction to each of the following statements.

	Agree	Disagree	Neither
a. ITV shows great possibilities for stimulating teacher creativity.	1,207,000	155,000	913,000
b. Teachers, when using instructional television, lose some of their importance in the classroom setting.	182,000	1,436,000	657,000
c. The personal relationship between student and teacher is lost when instructional television is used.	283,000	1,234,000	757,000
d. The development of more instructional television programs is a waste of time.	55,000	1,756,000	464,000
e. Teachers don't make enough use of instructional television.	1,119,000	164,000	991,000
f. The use of instructional television makes any subject matter more interesting.	1,145,000	246,000	883,000
g. Instructional television inspires students to greater curiousity and learning.	1,091,000	128,000	1,056,000
h. Instructional television is all right but I feel it has been over emphasized.	277,000	867,000	1,131,000
i. Children watch enough television at home; they don't need to watch more in school.	226,000	1,173,000	876,000

Table 2: Teacher Ratings of Instructional Uses of Television (Teacher Estimates)
Below is a list of uses of ITV. Rate each for its importance.

	Important	Unimportant	Neither
a. To extend the range of experiences available to students.	1,723,000	47,000	505,000
b. To present new materials.	1,694,000	98,000	482,000
c. To provide different approaches for presenting material.	1,870,000	43,000	363,000
d. To reinforce material taught in other lessons.	1,797,000	80,000	398,000
e. To bring new resources and/or per[illegible] the classroom.	1,833,000	79,000	362,000
f. To motivate students' interest in a s[illegible]	1,749,000	85,000	442,000
g. To lighten the teaching load.	539,000	898,000	837,000
h. To allow the teacher to observe the students.	778,000	649,000	847,000
i. To allow teacher and/or students a brief time to relax.	542,000	961,000	771,000
j. To permit individualization of instruction.	1,010,000	403,000	862,000
k. To present subject matter where there is not a special teacher (e.g. music, foreign language).	1,226,000	335,000	713,000
l. To serve as a suitable teaching alternative in emergency situations (e.g. school closings, long-term teacher absences).	776,000	707,000	793,000

Table 3: Teacher Ratings of Factors Which Facilitate Or Hinder The Use of ITV (Teacher Estimates). Check the factors which have been **most facilitative** to or which have **most hindered** your use of ITV.

	Facilitators	Hindrances	Both	Neither
a. There (are/are not) programs available which meet my existing curriculum needs.	798,000	859,000	12,000	606,000
b. Broadcast schedules (and/or not) convenient.	476,000	1,036,000	6,000	757,000
c. Equipment (is/is not) available to me and in good repair when needed.	930,000	783,000	3,000	558,000
d. Reception (is/is not) good in my classroom	834,000	546,000	1,000	895,000
e. There (is/is not) much educational benefit to the students I teach.	965,000	343,000	—	966,000
f. Schedules and guides (are/are not) available early enough for planning.	704,000	683,000	7,000	882,000
g. My school district (does/does not) encourage me to use ITV.	741,000	617,000	3,000	913,000
h. My principal (does/does not) encourage me to use ITV.	782,000	477,000	12,000	1,004,000
i. Students (do/do not) like ITV.	1,077,000	141,000	5,000	1,051,000
j. Parents (do/do not) think ITV is a good idea.	648,000	176,000	10,000	1,441,000
k. Someone from the public TV station or network (does/does not) provide helpful information.	332,000	789,000	5,000	1,149,000
l. Recording rights (are/are not) available for convenient playback of series.	356,000	594,000	8,000	1,317,000

Table 4: Teachers' Sources of ITV Programming

Source	Estimated Number of Teachers
Public TV station(s)	915,000
Cassette/film/videotape	585,000
Commercial TV station(s)	408,000
Cable television	243,000
Closed circuit/ master antenna system	196,000
ITFS	52,000
Don't know	80,000

Table 5: Teachers with ITV training by years of teaching experience. (Asked of all teachers with training)

	Total of All Teachers	Total of Teachers With Training	Elem.	Middle/ JHS	SHS
	(2,275,000)	(390,000)	(196,000)	(83,000)	(111,000)
<1 yr.	2.6%	2.4%	0.6%	1.6%	7.9%
1-3 yrs.	11.0	8.3	7.2	14.2	5.8
4-6 yrs.	19.0	19.0	20.6	14.5	19.2
7-9 yrs.	20.1	16.7	20.7	15.8	7.2
10 or more yrs.	47.3	53.5	51.0	54.0	59.9

Table 6: Sources of Teacher Training, 1976-77. (Asked only of teachers who reported ITV training)

Sources:	Total	Elem.	Middle/ JHS	SHS
	(390,000)	(196,000)	(83,000)	(111,000)
College course work	42%	32%	41%	67%
District in-service	38	41	34	34
Televised ITV in-service series	17	20	11	13
Workshop by local PTV station	11	14	5	11
State Dept. of Ed. in-service	6	6	4	9
Professional Mtg. workshop	31	27	35	36

Table 7: Recency and motivation of ITV training, 1976-77. (Asked only of teachers who reported ITV training)

	Teachers with training
	(390,000)
Per cent completing training within past three years	59%
Per cent reporting training required by State/local authorities	23
Per cent reporting college credit earned for ITV training	31
Per cent reporting district in-service credit earned for ITV training	11

Table 8: Use of ITV, 1976-77. (Asked only of teachers who have ITV programming and sets available)

	Teachers with training	Teachers without training
	(335,400)	(1,248,000)
In past week	38.9%	25.2%
In past month (but not week)	15.8	12.1
In past year (but not month)	21.8	21.8
Not in past year (but sometime)	13.1	20.7
Never	10.4	20.1

Table 9: Average Time Used per Week, 1976-77. (Asked only of teachers who used ITV in past week, month or year)

	Teachers with training	Teachers without training
	(256,600)	(737,600)
None	5.1%	5.2%
Less than 1 hour	27.8	38.1
1 hour or more	67.1	56.7

Table 10: Time spent before and after discussing or preparing for ITV Series Used, 1976-77. (Asked only of ITV series users)

Before			After	
Teachers without training	Teachers with training		Teachers without training	Teachers with training
(737,600)	(256,600)		(737,600)	(256,000)
20.2%	15.3%	None	5.0%	2.9%
53.0	52.0	10 min. or less	43.8	32.8
26.8	32.6	More than 10 min.	41.3	64.4

For the Adult Learner

The potential for serving adults through the national service is overwhelming.

—Rhea Sikes, Coordinator, Educational Services, PBS

We find a number of areas where we can be of service in behalf of small audiences with specifically defined needs.

—Bennie F. Lucroy, Director of Education, Mississippi Authority for ETV.

Nearly one-third of the Alverno student body (of 900) is made up of women over twenty-two who have returned to the classroom to prepare themselves to enter career fields they would never have dreamed of ten and fifteen years ago.

—"Alverno College: Our Commitment and Our Future," Milwaukee, Wisconsin, 1976.

Higher education's days of euphoria are over. The wondrous era after World War II has been packed off to the showers. Post-secondary education (PSE) will survive. However, it hasn't looked like its old self for years. And it may never again.

Consider a few of the tensions in college education today. There is the serious financial aspect. A recent survey, decidedly controversial, estimated that almost one-half of all academic institutions could be diagnosed as fiscally unhealthy. Whether this assessment was exactly accurate or not, it remains clear that the dollar strength of most private colleges and universities has slipped in recent years. In New York state alone, 15 colleges have merged or closed in the past decade.

Beyond the bursar's concerns, another question has arisen: Does a college education mean what it once did? Alan Pifer, President of the Carnegie Corporation of America, wrote in *Today's Education* for November 1976: "Higher education has become the object of widespread skepticism . . . (D)oubts are being voiced as to whether its benefits are not outweighed by its cost and burdens." At the same time, many a college has turned probing lights on its curriculum, wondering if there should be a return to "general education."

In certain ways, then, life may have become more bleak and less heady for the colleges. Still, there is a genuine market—or series of them—for PSE. In potential, it is very sizeable:[1]

- The 1970 Census showed that there were 109 million adults over 25. Just under half (49 million) had three years of high school, or less. Breaking that down, 30 million had not gone to high school at all; 19 million had attended for one to three years.
- Checking trends for 1974 to 1984, the National Center for Education Statistics (NCES) saw only one retreat among nine PSE categories. There will be a nine per cent overall gain in post-secondary education, said NCES, with a 14 per cent increase at the public institutions, against a seven per cent loss at the private ones. Four-year colleges would move up two per cent; two-year ones, 31 per cent. And full-time students would hold even (a zero growth), while part-timers would go up 24 per cent.
- By 1972, the adults in continuing education outnumbered the degree-seeking students. In that year, perhaps 78,000 institutions (colleges, churches, business firms) were providing education for 24 million adults.

1. The data cited here have been drawn in good part from Dr. Jerome E. Lord's July 1976 report titled "Toward Lifelong Learning: Changes & Innovations in Post-secondary Education in the United States—1966-1976."

- The age of college students has edged upward. Two years ago, out of 9.9 million higher-education aspirants, one million were at least 35 years old. Those 25 or older had risen 25 per cent over 1972.
- In 1976, according to the National Center for Education Statistics, at least 20 million adults 17 or older were engaged full-time or part-time in learning activities other than those of a college or university.
- Do adult students want a college degree? Not to any large extent. In fact, the range runs between one and ten per cent. They evidently prefer education that will advance them on the job, or help them cope with life's hazards.
- Characteristic of adult interest in learning, 128,000 registered in 1975 for one or another of 4,200 continuing-education options at the University of California's Los Angeles Center.
- What other learning routes are open to adults? The National Center for Education Statistics estimated that in 1972 7,310,000 adults were getting some education or training through business/industry programs.

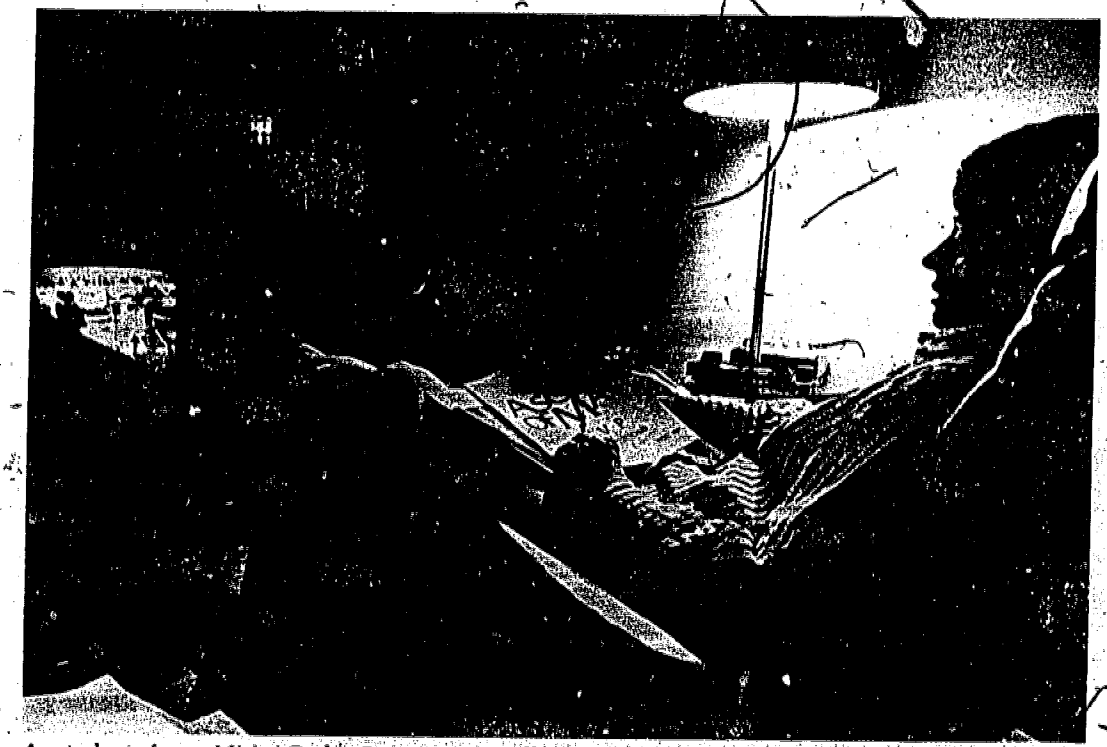
From the record of the past half-dozen years, it is quite clear that public television represents another route to learning—in fact or in potential—for adults both young and old. Without question, public TV could fit in neatly with a lot of PSE. And, indeed, it already has. In the past several years it has been active in the following respects (some of which will be explored more fully on subsequent pages).

Broadcast College-Credit Courses

- In a Spring 1974 postcard survey, 53 per cent of 144 PTV licensees responding said they were televising college-credit courses.

  Aside from these 77 respondents, 21 said they were not broadcasting courses, but were designing and producing them. Fourteen of the 21 were licensed to universities or colleges. It could be inferred that some of them were using closed-circuit systems to spread the courses through a campus setting.

  Among the 67 not broadcasting courses, seven said they had done so before or expected to in the future.
- Formed in July 1974 and based in Lincoln, Nebraska, the campusless University of



A student from Miami-Dade Community College is "attending" the Ascent of Man college-credit course from the Jacob Bronowski popular PBS series on a "individualized, independent study basis."

Mid-America (UMA) has combined nine higher-education institutions in six states. The common aim: to offer adults college-level learning. Public TV has been one of the delivery methods. As of Spring 1977, more than 5,000 have enrolled in UMA courses since the start three years ago.

- Like UMA, the Dallas County Community College District has been using public TV for three years as a way of bringing courses to adults (both on- and off-campus). The District began with one course in 1974. In Spring 1977, it was offering seven over KERA (for about 23 hours of air time a week). For these seven, some 4,146 were enrolled for credit at the District's four campuses; 4,000 more had signed up outside.

College Degree Tracks

- Chicago's TV College accomplished this aim. By Spring 1974, some 400 individuals had earned an A.A. degree entirely through open-circuit TV (public TV station WTTW was the broadcaster).

- During 1976, WNET, New York opened an Office of Higher and Continuing Education and began to study the possibilities of a degree-oriented project.

Credit in Prime Time

- This option is national in scope, as opposed to course offerings by single stations, or perhaps a state network. It has come into flower since 1974, and has entailed building a credit course around a sequential series not originally designed for credit use, and transmitted during evening hours by PBS. Beginning with *The Ascent of Man* in January 1975, five PBS series have been molded into credit options for viewers.

In-service Courses

- Hardly a new phenomenon for public TV, this activity was typified in Fall 1976 by Cleveland station WVIZ's broadcasts of *The Characteristics of Learning Disabilities* (produced by the Learning Disabilities Council of Virginia at WCVE-TV, Richmond). Some 70 teachers signed up to view the series for in-service credit.

Courses for Business, Industry and Professions

- PTV has long offered these. Stations may produce and use a course, then make it available for lease or sale. KET's *The Business of Writing*, completed in 1973, is now marketed by Advanced Systems, Inc., Chicago. KET has earned more than $100,000 in fees.

Of course, public TV hardly has this field to itself. The "competition" would include such firms as the Network for Continuing Medical Education, part of Visual Information Systems. Each year, the network sends out 23 "editions" of "televised medical education" to 750 hospitals.

Remedial Learning for Adults

- Through open-circuit public TV and cassette playback, the *Kentucky GED* series and Manpower Education Institute's *Your Future Is Now* have helped prepare thousands for the rigorous, ten-hour high-school equivalency tests.

- As public TV has realized increasingly, there are more ways to reach an audience effectively than just through open broadcast. Typical of the alternatives: the State University of New York's *Modu-Math*, produced in 1972-73 to help meet the "remedial mathematics problem." These units were expressly designed not to be broadcast. To SUNY, open-circuit use would deny the student the "self-pacing" flexibility he might have at a cassette playback machine.

Informal Learning

- PTV has majored in this activity, and in some ways has turned it into a fine art form. One of the unique formats has been the "outreach" program. Usually this has been a single show about an issue of social concern, such as alcoholism; the show is carried by PBS and is followed in many areas by related programs produced and aired by local stations.

- *The Puzzle Children*, broadcast in October 1976 over PBS, was emblematic of these events. This one-hour show dealt with children's learning disabilities; it was produced by WQED, Pittsburgh, starring Julie Andrews and Bill Bixby. As the special on PBS ended, more than 114 public TV stations did their own, locally oriented follow-up.

As different as these activities might seem, they share strong relevance to post-secondary education. The fact is that non-commercial TV has put in more than two decades of service to PSE. It is worth recall-

ing here that by the mid-fifties, institutions such as Penn State were trying to make the best of a still-primitive device. Leslie P. Greenhill well remembers the trials with Penn State's garage-built Dage cameras:

Our thought was that you could take good professors and extend their influence to larger numbers of students through the use of TV.

In the Spring of 1955, 367 undergraduates at Penn State were enrolled in three closed-circuit TV courses. Ten years later this was how the uses of TV had evolved there:

- There were 7,506 students in 18 televised courses;
- No teachers had been fired as a result of TV use;
- More than three-quarters (78 per cent) of 3,000 students questioned thought TV was either "fairly good" or "very good" as a way of handling large-enrollment classes; and
- A university cost analysis showed a "saving in favor of televised instruction totalling almost $40,000 . . . ."

Coming forward another ten years (to 1975-76), this was how the situation had shifted at Penn State:

- Some 10,594 students were enrolled in TV courses, which generated 31,748 student credit hours; and
- TV was used that academic year in 168 sections of large-enrollment undergraduate courses.

By now, closed-circuit uses at Penn State seem to have hit a plateau. This is the judgment of Dr. Donald W. Johnson, Director of the University Division of Instructional Services. The "modest" cable system on-campus still has its users, but current practice tends to lean toward sending instructional materials on videocassettes to individual classrooms for playback at an instructor's option.

At Michigan State University, the application of closed-circuit distribution has shown a vigorous growth over the past few years. This was the report for 1975:

- Some 15,328 students were using ITV courses on-campus, a 13 per cent increase over 1970. (Some of MSU's 41,500 students took more than one course through the closed-circuit system.)
- In 1975, 394 courses were distributed in whole or in part by TV, compared with 363 in 1974. The 1975 total was 75 per cent greater than the 1970 figure.
- In respect to student credit hours (number of hours delivered by TV), they totalled 63,659 in 1975, an eight per cent rise over 1970.

It is something of an eye opener to come up against the mass-production statistics of an institution such as Michigan State. They provide a springboard for certain generalizations. In televised PSE, there has been a "tradition" of using closed-circuit systems to deliver formal learning in campus settings. It contrasts with that other media tradition in which K-12 instruction has customarily been distributed by open-circuit means.

Now, new technology has come along to diversify the situation. Even on-campus, the videocassette has become a valid competitor to the closed-circuit system. But remove post-secondary education from campus boundaries and the alternatives expand. There, a slim tradition of reaching learners through open-circuit TV has new companions. Wanting to review, the adult student could see a televised lesson in cassette form at a learning center or library. Wanting clarification, he could phone an instructor.

In short, the past several years have seen a healthy increase both in distribution methods and in the alternative ways of learning available to the aspiring adult student. In his article (in Section III), John P. Witherspoon, President of the Public Service Satellite Consortium, describes one of the directions these alternatives may take, in the use of a satellite to create a continuing education network.

A Break for Continuing Education. Beyond the availability for fancy new hardware, another factor has come to the aid of the adult educator. More and more, society has started to require continuing education. This development can open vast opportunities to the public broadcaster.

In many states, laws now require those in certain professions to be relicensed at periodic intervals. Take the doctor. As of September 1976, the American Medical Association told what the practitioner faces in different states:

1. Fourteen state medical associations have a policy to "require continuing medi-

cal education (CME) as a condition of membership."

2. Seven medical specialty societies, such as the American College of Emergency Physicians, had decided to require CME as a prerequisite for membership.

3. All 22 medical specialty boards have set a policy "to provide recertification . . ." Thirteen had set dates (as of September 1976) when that requirement would begin.

Lawyers face this trend, too. In Minnesota, Iowa, Washington and Wisconsin, they must take courses for relicensure. Across *all* professions, there is no fix on the extent of state laws calling for recertification. However, in the words of Lloyd H. Davis, Executive Director of the National University Extension Association, "we know this situation is rapidly changing."

One example of how this trend relates to public TV could become a classic case in its own time. It grew from a federal decision that two million "private applicators" of pesticides be certified by October 1977 in the safe and effective handling of restricted-use chemicals. In 1975, the University of Mid-America set out to respond. It decided to develop "mediated training materials" for farmers. By April 1976, consortium funding was secured to produce a $141,488 package of materials—five broadcastable TV programs, a learner handbook with self-tests, an article which could be run in agricultural publications, and a user's manual. As of January 1977, UMA already had orders for 14,000 study guides. And the completed TV units were described as "the best training films of this type that I've ever seen" by James H. White, Chief of the Environmental Protection Agency Regional Support Branch.

This UMA venture can easily be projected on a bigger screen. If recertification is really gaining strength, then alliances between higher education and public TV would seem to be highly justifiable. The only question that remains is whether they can jointly move into the marketplace before the commercial entreprenuers do.

Even if the ultimate product never sees the light of open-circuit day, public TV still could be—as it has been—fully engaged in designing, producing, and duplicating visual and written components. Those now embarked on this course are making a reality of the "telecommunications center" idea proposed years ago by the National Association of Educational Broadcasters' (NAEB) William Harley—and very probably are closed to the future than their colleagues.

Among the Headlines

Over the past three years, post-secondary education gained visual expression in a variety of ways. There have been definite wins, a loss or two, and a project where the jury is still out. In profile, these projects show the greater dynamics now evident in the use of public TV for post-secondary education.

On the Interconnect. The advent of Public Broadcasting Service series with a credit option for the viewer may well be one of the best public TV-in-education stories of the past several years.

The story began with a remarkable TV series *The Ascent of Man*. When word came in Spring 1974 that PBS would run it the following January, a cluster of academic administrators at Miami-Dade Community College and University of California, San Diego, began to step lively in a most unacademic way. Teams of instructors started writing support materials to expand the TV series into a credit-bearing opportunity. Meanwhile, PBS called together all the disparate components to assure the best possible cooperation on the local level. It was a new game: an extraordinary level of coordination was called for—and largely achieved. To fortify the series further, Mobil underwrote the publication of some 75,000 guides for secondary teachers.

Jacob Bronowski's *Ascent* gave TV a high purpose and meaning. When January 1975 rolled around, his magnetism was felt at the registration box office. Miami-Dade offered the televised credit course on an "individualized, independent study basis." In the Miami area, it drew an enrollment of 1,238 in its first term. None of that institution's 55 Open College courses before or since attracted that many.

In the Coast Community College District of Southern California, it was the same story. There, 2,843 registered to take *Ascent* as a course. Only three other courses out of 53 televised in the district since Fall 1972 had more than half that amount. The impact of *Ascent* was such that in Fall 1976, Dr. Marjorie E. Hoachlander initiated a study "to find out how and why (it) became a widely-used instructional focus for many courses in a

large number of colleges and universities." Supported by CPB and the Center for Advanced Study in Education at City University of New York, Dr. Hoachlander sent her questionnaire to institutions of higher education. (Her report on the results was distributed in December 1977.)

In any event, with *Ascent*, educators had broken the ice for PBS. A model had been built. After that, it became more and more routine to try for added mileage out of prime-time series by molding credit courses around them. In Fall 1975, PBS offered *Ascent* again as a credit option, and along with it, *Classic Theatre*, amplified with a special half-hour "Preview." Institutions could also treat as a credit course of their own the telecasts of Kenneth Clark's *Romantic Rebellion*.

For the young Bicentennial Year, PBS was ready to distribute WNET's *The Adams Chronicles*, which started January 20, 1976, for enjoyment or credit (or both). Coast Community College District had built up the credit aspects to make *Adams* a course; University of California, San Diego, helped by writing a guide for discussion leaders. Backing up its tapes, the producing station, WNET issued a 24-page, secondary-level teachers' guide. Grants from the National Endowment for the Humanities and Atlantic Richfield Company made it possible to run off 65,000 copies. All of them were distributed.

In an historic year, *Adams* charmed people and captured "student body," too. These were a few of its accomplishments:

- A total of 30,000 men and women enrolled as credit students for the two 1976 offerings (winter and fall terms) over PBS. In the winter, 305 colleges and universities agreed to award credit to viewers in their respective neighborhoods. For the fall rerun, 386 institutions made credit available.
- Various books on the Adams family benefited from the upsurge of interest in the Bicentennial and in John Adams, his wife, and their descendants. The marketing of these books broke down as follows:

  1. Some 22,000 copies of Jack Shepherd's *The Adams Chronicles—Four Generations of Greatness* had been sold through bookstores by the end of 1976.

  2. *The World of The Adams Chronicles*

John Adams is sworn in as President on The Adams Chronicles. With this program, the craft of turning a PBS series into a college-level television educational course moved forward with a gratifying degree.

—*Forging Our Nation*, edited by David J. Rothman, had sales of 8,979 during 1976.

3. The sale of *The Adams Chronicles—A Student's Guide* reached 9,584 by the Bicentennial Year's end.

4. Offered together, a "prepack" of these three books sold 11,094 copies.

5. Still another volume, *The Book of Abigail and John: Selected Letters of the Adams Family, 1762-1784* (edited by L. H. Butterfield, Marc Friedlaendar, and Mary-Jo Kline), had a sale of 22,757 by June 15, 1976.

6. One ironic—and still puzzling—footnote: many enrolled for the course, but did not buy the books. At one college, 1,900 registered for credit, yet there were only 300 book-sales, at most.

With *Adams*, the craft of turning a prime-time PBS series into a college-level credit course moved forward to a gratifying degree. The producing station, WNET, worked nine months before the series premiere on the academic components, collaborating with the two higher education institutions on the West Coast. These efforts certainly set the pattern for many a project to come.

Along with the repeat of *Adams* in Fall 1976, PBS made available (on Friday mornings) the poetry series *Anyone for Tennyson?* Produced by the Nebraska ETV Network and the Great Amwell Company of New York, this collection of poetry readings lent itself well to adaptation as a credit course. Then, on a more localized basis, morning repeats on PBS of *NOVA* were used for credit in some places. Higher education had the further chance in Winter 1977 to shape credit courses around PBS's rerunning of *Classic Theatre* and *Romantic Rebellion*.

A distinction has to be made about the credit uses of these PBS programs. With some series—*NOVA* and *Romantic Rebellion*—it has been up to local colleges to devise an appropriate course synchronous with the PBS telecast.

Then, in the case of four series—*The Ascent of Man, Adams, Anyone for Tennyson?* and *Classic Theatre*—central course materials were prepared by small groups of educators. Interested colleges were advised that they could buy the written components from the institutions which had taken the lead in assembling them.

A new, high-budgeted series being offered by PBS in 1977 shows the interrelationships involved. It is *The Age of Uncertainty*, with economist John Kenneth Galbraith. These are the arrangements:

1. The 13 TV programs will be carried by PBS, starting in September 1977, as a credit course. The interconnection transmitted a "preview" in Spring 1977.

2. Described as an "interdisciplinary telecourse" warranting three or four credit units at the lower-division level, the series features Dr. Galbraith as host. He also wrote *The Age of Uncertainty*, one of three books accompanying the course. Houghton Mifflin Company has published the texts, which will sell as a package for about $20.

3. Coast Community College District has prepared the "academic and administrative support manual" as a guide for interested institutions. Colleges and universities can buy it for $50.

4. As the work of planning evolved, these institutions took part at one level or another: British Broadcasting Corporation, Ontario Educational Communications Authority, KCET (Los Angeles), PBS, Coastline Community College, Coast Community College District, University of California San Diego Extension, and Houghton Mifflin.

5. Dr. Leslie Purdy of Coastline was designated as coordinator for the telecourse.

6. Those interested in using the series beyond the open broadcast through PBS were advised that Films Incorporated would provide the course in four formats (16 mm film, three-quarter-inch videocassette, one-half-inch videocassette, and off-air taping). "For the first time," prospective users were advised, "colleges and universities will be able to obtain a legal license to make videocassette copies from the PBS broadcast . . . ."

By February 1977, a description of *The Age of Uncertainty* as potential college-level course had been circulated far and wide by Coast Community College District. All parties had learned that this was hardly too early to start local institutions planning for

a series filmed in 19 different countries over a three-and-one-half year period.

An adult-level educative service building on prime-time series such as these could turn out to be one of PBS's main growth areas in seasons ahead. In late 1976, Rhea Sikes, PBS's Coordinator of Educational Services, explained the agency's outlook on the matter:

The stations look to PBS for the most excellent programming available on any level. With the satellite potential, there's a real challenge to find that material . . . The national service can more easily facilitate services to adult audiences than to K-12, because the adult has a different set of priorities, is available at different times, and has a very flexible approach to education in which he's looking to his own individual growth, rather than completing an institutionally prescribed course of study.

PBS and committed educators have found that this adult will sign up for the national, prime-time credit course. Solutions have been written for many of the problems which have cropped up. The big problem remaining is one that Sikes and others know all too well: where are the truly noteworthy program materials for courses? That is where search parties must put their emphasis now.

High Achiever Among Consortia. One consumer of PBS credit courses has been a cluster of institutions in and around Los Angeles. This is "TELECON," the short-form name for the Southern California Consortium for Community College Television, directed by Sally Beaty.

In business since 1970, TELECON has become its own kind of establishment. Its 35 community colleges—they include the nine of the Los Angeles Community College District and the three of Coast Community College District—range over six counties from Bakersfield to Palm Springs, and from Barstow to Mission Viejo.

In the years since TELECON's start in 1970, it has enrolled more than 170,000 in credit courses delivered through open-circuit TV. (Strictly speaking, some of TELECON's customers may have taken more than one course.) While the consortium has not had its own TV facility, it has had ample access to TV transmission capability in the Los Angeles area. In fact, it was using six TV outlets in Spring 1977—three of them public (KCET; KOCE, licensed to Coast Community College District; and KVCR, San Bernardino), and three, commercial (KABC, KNXT, and KTTV).

The student growth curve since 1974 has been intriguing. In 1974, 26,474 enrolled in five courses (four produced by TELECON, one leased). The next year, registration jumped to 61,680. In that year of 1975, nine courses were offered, three of them from the PBS national feed. Then the numbers tumbled in 1976 to 35,317. The main cause: a change in veterans' educational benefits. No longer was this an "appealing giveaway program," as Ms. Beaty put it. In 1976, 11 courses were listed (six, consortium-produced; three leased from others; two airings of *Adams*).

TELECON raised its sights higher in 1977. It planned to broadcast 16 courses by year's end. Of three currently in the design/production process, an astronomy telecourse is a co-production by TELECON and consortium-member Coast Community College District. Its pilot won a 1976 "Best of WEST."

In TELECON, forward planning is a must. By Winter 1977, production had been projected to 1979. Ms. Beaty elaborated:

We're very much committed to instructional design. This will make our courses much more acceptable to other institutions. It should stimulate cooperation because we're playing by the same ground rules, with the same standards of academic and production excellence.

The consortium has begun looking even further into the future—to the mid-eighties—to see "where we're going in curriculum development." The commitment as of 1977: to produce at least three courses a year. Two will be in general education; the third, in an area of "popular appeal and need" (like personal finance). It happens that this option is in the works in mid-1977: it was at the top of viewers' requests.

Sad Day at Mac's Place. When it set to planning *Feeling Good*, the Children's Television Workshop knew there was a public need for a health-information series, even if there might not have been an explicit request for it from viewers.

In the words of Dr. Edward Palmer, CTW Vice President for Research, the series was

"an ambitious attempt to use television in innovative ways to influence health behavior." Twenty-six weekly hour-long shows were to start airing in November 1974. CTW hoped for a broad audience—"all socioeconomic levels, including, but not exclusively, viewers from lower-income circumstances." More time went into designing segments for lower-income viewers, "simply because their needs were seen to be greater and corrective action more difficult to achieve." The planners also leaned toward "popular" TV formats "to compete with popular commercial programs . . . ."

The start was shaky. After a dozen shows had aired, the "only question" in Joan Cooney's mind (as recalled by Robert Davidson, Director of Broadcast Relations for CTW) was "whether to cancel completely, or if we had time to save it." Revolving around a studio home base called "Mac's Place," the cast was beginning to reach as many people as the "top one-third" of the adult series on PBS. But for CTW, the product still wasn't good enough. *Feeling Good* was pulled off the air and sent back to the shop for repairs.

Through late Winter of 1975, a new CTW team reworked the series. Those were agonizing weeks. Bob Davidson explained the impact of the temporary shutdown on the local PTV stations:

Very few stations did not laud the decision to try to make the series better. But it left them with a technical problem of what to do with their schedule for 13 weeks. We wouldn't let them rerun the first shows. This tended to destroy the momentum of the outreach programs.

CTW had encouraged public TV licensees to present local health information as an accompaniment to this series. "When we withdrew the show," said Bob Davidson, "it threw this effort into chaos."

After 13 weeks, the mended *Feeling Good* went back on the air. Dick Cavett was host in a half-hour format. No more Mac's Place. Topic emphasis swung toward "dramatic" issues, such as cancer, heart disease, alcoholism.

In spite of the therapy, the "Season B" version of *Feeling Good* did not make it. So CTW decided to scrap it after one season, even though there had been some important, positive findings. The series, Dr. Palmer reported, "attracted enough viewers to place it above average prime-time PBS programs." It also produced "a number of significant, measurable effects . . ." As just one sample, 40,000 wrote in for a Smokers' Quitters' Kit. That put CTW in a bind: it only had money for 25,000, so it had to pursue a grant to print up the rest.

Boiled down, this was CTW's postmortem judgment on *Feeling Good* (as voiced by Dr. Palmer):

. . . we now seriously consider whether any weekly, half-hour, extended series on preventive health, presented in expensive entertainment formats in prime time on public television could attract a great enough audience to justify the investment . . . Even Season B . . . failed in our view to achieve a combined reach and impact great enough to warrant continuation in light of its very substantial costs.

The investment had been substantial. More than $7 million went into the series, about $1 million (which CTW paid itself) for repair work after Season A. Even if the series has made it, CTW would have faced a major problem, one directly related to the funding issues explored in the pre-K chapter: how was the Workshop going to pay for it in a second season? But that issue evaporated. Embalmed after one season, *Feeling Good* was, to Davidson, "an example of what is possible on PTV that never could happen on commercial television. It was a high-risk experiment."

Forestalling Failure. In 1973, the widely respected educator Dr. Cyril O. Houle took a look at "The External Degree: How to Determine Who Wants It, Who Needs It." He built his answer on a foundation of these figures:

- As of 1971, he reported, there were 18 million dropouts in America. By 1990, there would be 20 million.
- Those with a high school diploma but no college experience numbered 38 million as of 1971. Two decades from then, there would be 58 million.
- As for those with some college but no degree, there were 11 million in 1971, with 22 million projected for 1990.

In short, adults by the million could become consumers for some type of education; and the millions are increasing.

While failure could torpedo any adult, it's more liable to broadside the person who never made it through high school. For that individual, the "GED" tests of high school equivalency have become a useful countermove. And broadcast TV has turned out to be one way of studying for those challenging exams.

In the mid-sixties, Manpower Education Institute, New York-based, made a 60-part TV series to help GED candidates brace for the tests. Later, the Institute brought in a second-generation version, *Your Future Is Now*. These programs have played in many states for more than five years. One place where they have been used has been in northeastern Alabama. In a five-county area there, the Top of Alabama Regional Education Service Agency (TARESA) serves eight school systems and a population, in the overall, of some 200,000. It is typical Appalachian Mountain territory. This was TARESA's experience with *Your Future Is Now*:

- From 1972 to 1976, the agency had the series broadcast, and offered with it coordinated texts, learning-center study, home tutors, and diagnostic tests.
- The first year, there were 600 GED recipients. By 1975-76, there were 1,600. The total for the four years: 5,000.
- David Marxer, Director of the Huntsville ETV Center, described the series as "a highly effective educational adult education series in Alabama . . . ."
- Of prime significance in the case of this series (and a lot of other instructional materials as well) was this further point by Marxer, noting that there had been:

> *Statistical proof that its greatest effectiveness is accomplished when there is on-site coordination and visitation by trained staff . . . The successful completion of the GED series is increased by as much as tenfold in the areas where such coordination has been provided.*

By September 1974, Kentucky Educational Television was ready to broadcast a like series, usually known as *Kentucky GED*. The following January, KET put the 34 half-hour units into national distribution. Six months later. It turned over the marketing to Cambridge Book Company, with a percentage return to KET. Through Winter 1977, sales had grossed about $1 million.

KET's GED series had been used in a variety of ways in Kentucky. In the open-broadcast phase, some 2,000 enrolled directly through KET. When playback gear was installed at ten learning sites, "enrollment retention and progress" increased. Meanwhile, all of the state's correctional institutions had used the programs over an 18-month span. One result: instructors had "overwhelming enthusiasm" for them.

Evaluations of several uses of KET's GED package have been summarized by William Wilson, Cambridge's national utilization specialist:

1. From 1973 to 1975, the Appalachian Education Center at Morehead State University analyzed achievement of adults in the GED track. These individuals had studied for the tests in different ways. The overall judgment held that:
   - "No single teaching/learning condition appears to be more effective or efficient than another . . . ."
   - Achievement seemed to be hinged to "the nature of the client . . . ."
   - "ETV teaches, and does so as well as existing systems do," and
   - KET's series seemed to contain "all the basic ingredients for instruction."
2. The Oregon Division of Continuing Education had these conclusions about KET's GED:
   - TV was the best recruiter for GED study, followed by newspaper ads;
   - Enrollment in KET/GED was "effective" in helping individuals pass the tests. Out of 1,500 enrollments, a random sample of 100 showed that 41 had taken and passed the exams;
   - Generally, students thought the program elements and instructional strategies had satisfied their reasons for signing up;
   - Only ten per cent were reluctant to concede that they did not have a high school diploma; and a "clear majority" was married and had children;
   - The students were "not looking for entertainment . . . ." They preferred a

direct approach to learning. This was "serious business not to be taken lightly."

Among his recommendations, Wilson called for an ongoing awareness drive keyed to GED. Further, he saw the need for "some kind of minimal support" for the broadcasts. Reflecting the point made by Huntsville's David Marxer, it had become clear to Wilson that "person-to-person contact" was the "critical element" to gain student involvement and eventual achievement.

Certainly *Kentucky GED* has had its followers across the country. Based on book sales and station reports, Wilson has estimated that 150,000 watched the series in 1976 to prepare for the tests.

Over West Virginia's Hills. At West Liberty State College, Wheeling, West Virginia, the PBS telecasts of *NOVA* have become a continuing college-credit course. It is a circumstance that could have real meaning in other states.

Like colleges elsewhere, West Liberty has had its problems in keeping enrollments up. *NOVA* may not be the only antidote, but the evidence suggests that it could help change the picture. Capitalizing on *NOVA* broadcasts over WWVU, Morgantown and WQED, Pittsburgh, just to the northeast, an enterprising professor turned the science series into an interdisciplinary course. In Spring 1976, he had 35 enrollments; the following Fall, 50; and by Spring 1977, there were 45.

Overall, West Liberty has had more than 200 enrollments in academic year 1976-77 in TV or newspaper courses. And the college is beginning to note that TV students are showing up on campus, evidently willing to commit themselves to learning of a more traditional kind.

In more ways than one, West Virginia would not seem to be a likely place for post-secondary-education delivery through TV. The ever-present hills fight good reception from the state's three public TV stations, one a VHF (WSWP, Beckley), the other two, UHFs (WMUL, Huntington; WWVU, Morgantown). The stations get the PBS feed, but there is no state network. Hence, tapes must be bicycled from one to another. Right away, that can become a nightmare for anyone trying to plan a coordinated promotional campaign. Then, too, the population is fairly small (1,755,000 as of 1975) and quite dispersed, with only seven cities over 25,000.

Still, a very young effort to use TV for credit-course distribution seems to be catching on. The beginnings coincide with the first PBS broadcast of *The Ascent of Man* in January 1975. That same month, Michael Helmantoler arrived on the scene as Instructional Media Manager for the Office of Radio, Television, and Motion Pictures at West Virginia University. Since then he has been appointed Program Associate for Mass Media for the American Association of Community and Junior Colleges. It was his task to work back and forth between the three PTV stations and the state's 24 colleges.

At first, very little happened. Only one college did anything with the first run of *Ascent*. For guidance, Helmantoler visited the Maryland Center for Public Broadcasting. That Fall of 1975, the program gained energy. Ten colleges made use of five broadcast courses (including *Ascent* and *Classic Theatre* from PBS), and enrolled 567 for credit. Various courses were offered in 1976, and by year's end, according to Helmantoler, colleges were inferring that the televised *Ascent* had led some students to take more traditional science on-campus, while *The Adams Chronicles* had guided others to sign up for American History.

In Fall 1976, 11 colleges made use of the broadcasts of the University of Wisconsin-Green Bay's *Consumer Experience* series. Some 161 took it for credit. As a sequel, a move developed among the higher-education institutions to expand the uses of TV. Out of a new statewide committee came a plan to use a series of six courses in the 1977-78 academic year. Two of them (*The Age of Uncertainty* and *Anyone for Tennyson?*) would be PBS-delivered. As of Spring 1977, 75 per cent of the public and private colleges in West Virginia had agreed to take part in this concerted effort.

Fortunately, public TV course delivery fits well with the state's "Regents B.A. Degree Program," started in February 1975. More than 2,000 adults have enrolled in this degree-by-exam program; 516 degrees had been awarded by Spring 1976. TV has become part of the accepted distribution system for courses.

Looking to the enlarged delivery planned for Fall 1977, Helmantoler reported the coordinating committee's estimate that as many as 200 students per course could be

anticipated. That would mean 800 a semester using TV as their vehicle for learning. And it would draw an exciting growth curve in a state where these efforts are less than three years old.

South Carolina ETV. For anyone concerned about network output, South Carolina ETV becomes an absorbing case study. In 1976, it was still building, still growing, with bigger projections for the future. A few numbers tell the story:

- Students for higher education courses: up from 5,407 in 1975 to about 6,000 in 1977;
- Teachers taking in-service courses: from 5,552 in 1974 to about 8,000 in 1977;
- An estimated 19,000 enrollees in medical education in 1977, against 8,875 in 1974 (the increase attributable in part to expansion of the health-education network);
- Law enforcement: stable at about 3,500 a year;
- GED and like programs: 17,500 in 1974-75; edged closer to 18,000 in 1976; and
- Business men and women: around 53,000 will be served in 1977 by the network, compared with 47,000 in 1974-75.

Lumping all ETV's students together—at all levels—the total has climbed from 384,458 in 1976 toward about 445,000 in 1977. Commented Robert E. Wood, Director of ETV's Division of Education: "That's quite substantial when you consider we only have 2.5 million people in South Carolina."

At the higher-education level, ETV's lines have been used increasingly to reach people. The University of South Carolina has offered a televised MBA degree, for example. In it, 14 subjects have been televised live. Those watching in different locations throughout the state have a chance to question the instructors through a talkback mechanism. Several times a semester, students meet on-campus for a weekend's concentrated study. Texts, papers and tests buttress the live TV transmissions. In 1976-77, some 1,000 had enrolled in this MBA program statewide.

By the end of the Spring 1977 term, ETV expected to have transmitted all of 75 college-level courses this academic year, including the 14 MBA series and 28 in a Master's in Engineering sequence. This says nothing, of course, about the other types of educational activity in ETV's schedule of 130 programs each day during the school year.

One of ETV's in-service products, *The Teacher As Manager*, has played to more than 2,000 of the state's 24,000 teachers. During 1976, 333 viewer-users were surveyed about the course. On the strength of an 80 per cent response, investigator Ronald G. Midkiff of Columbia College reported these findings:

- About 86 per cent had certificate or degree reasons for watching the series for credit;
- Three-quarters of the respondents had been teaching anywhere from one to 15 years, eight per cent had taught for 16 to 20 years, and 11 per cent had been a teacher for more than 20 years;
- Comparing the TV course with others taken in the traditional way, 87 per cent rated the TV as the same or more valuable;
- About 88 per cent thought the TV series had been "about as" interesting or "more" interesting than conventional instruction they'd received;
- More than nine out of ten (95 per cent) said they would take other, relevant TV courses;
- Almost all (97 per cent) found the TV-taught concepts and skills "workable" for them; and
- Questioned if the course had made them a better manager, 92 per cent checked off "Yes."

The survey covered other provocative territory. Six out of ten said they had not met with a teacher during the 26-segment course. Of those who had, half saw an instructor twice. Twelve per cent met with a teacher once. Seven out of ten felt they had had "enough contact" with an instructor.

Summarizing, Midkiff inferred from his data that:

. . . it appears that the convenience of an ETV course was what motivated many of the students to take the course. Teachers who were not willing to drive at night to a campus or who had small children and could not leave them at night found this ETV

course an answer to their desire to take a graduate course and were grateful for it.

In round numbers, *The Teacher As Manager* cost $110,000 in out-of-pocket charges (for consultants, actors, film processing, transfers to videotape, evaluation). Actually, that figure represents an investment of $55 per student-user to date. And, according to the evaluation, the course works. So, it has to be seen as a bargain. Fortuitously, some of the original expenditure will be coming back to South Carolina. In early 1977, Syracuse University began using the course on a lease basis.

Advocates for Open Learning

In February 1977, two California educators were on the agenda for the Atlanta meeting of PBS members. Dr. Bernard J. Luskin, President of Coastline Community College and an officer of KOCE-TV as well, and Dr. Martin N. Chamberlain, Assistant Chancellor, Extended Studies, University of California, San Diego, went to Atlanta as proponents of adult-level learning through TV.

During that same month in early 1977, officials of the University of Mid-America—still a child among America's higher education institutions—met with the Director of the government's main educational R & D agency, the National Institute of Education (NIE), to talk about short- and long-range funding for UMA.

Only short months beforehand, Franklin G. Bouwsma, Miami-Dade's Vice-President for Instructional Resources, was chairing a CPB/ACNO task force on Post-secondary Formal Education. Virtually alone, he had drawn together the resources, human and otherwise, to create *Man and Environment* in the first two years of the seventies. This adult telecourse became, in various ways, a prototype for other course generations to follow, such as *The Ascent of Man*.

These three items—involving Drs. Luskin and Chamberlain, the UMA people, and Frank Bouwsma—have this in common: the individuals concerned believe in applying media to reach off-campus adults with college learning materials. In each case, their work in this cause has come into focus in the seventies. One conclusion is sure: they did not get as far as they have by thinking small.

Writing in *Planning for Higher Education* in August 1976, Barry Schwenkmeyer reinforced this conclusion. In visiting Coast Community College District, he had found "a strong flavor of educational entrepreneurism" in one Coast Office, i.e., Dr. Luskin's. The justification seemed clear. Putting together top-notch adult telecourses

. . . is big business, but Luskin and his associates have learned (as, have such other institutions as Great Britain's Open University) that if education is to get the most

One of the advocates for Open Learning has been Miami-Dade Community College, Florida. One of its educational television series in distribution is Man and Environment. *Above, a film crew on location.*

from TV, educators have to think big, and learn to deal with the large-scale producers and distributors of televised material.

One of Schwenkmeyer's concluding "Rules of Thumb"—lessons that Coast and Dr. Luskin could teach other institutions—was simply this: "Be bold when circumstances demand it." Then he added:

The Coast district would not be where it is today were it not for a few imaginative men who were fascinated with the potential of various instructional technologies.

Thrice-Told Tale of UMA. The very same, with adjustments for climate and topography, could be said for the University of Mid-America (UMA). Were it not for the vision and persistence of men like President D. B. Varner of the University of Nebraska and UMA Executive Vice President Jack G. McBride—and parallel vision in foundation and federal-agency offices—UMA might not have survived bl. zard and scorching winds as well as it has.

UMA's story began in the sixties when "Woody" Varner got the idea of using Nebraska's ETV network to send courses to adults at home. Three months l ter, a study commission had filled in the blanks. It recommended forming "SUN"—the State University of Nebraska. Planning began.

On July 26, 1974 SUN underwent metamorphosis. What had been a Nebraska-only venture turned officially into multi-state UMA. Federal funders at the National Institute of Education had become convinced that only a regional institution could attract enough enrollees to justify HEW grants. That fall, the first two courses went into distribution (in Nebraska only)—*Accounting I* and *Introductory Psychology*.

Slowly the bonds tightened between UMA and Washington agencies. The new consortium came to represent HEW's largest open-learning experiment. As of June 2, 1976, $7,059,238 had been spent on SUN and then UMA; of that, $4,741,940 had come from three HEW offices. Not until March 1977 did UMA staff in Lincoln get final word that for the fiscal year beginning October 1976, NIE would allocate another $1.2 million to the institution (NIE had provided a tide-over grant of $200,000 in Fall 1976).

The institutional size of UMA has grown bit by bit. In January 1977, the University of Minnesota and South Dakota State University joined. This broadened the consortium to include nine institutions in six states (Minnesota, South Dakota, Iowa, Kansas, Missouri, and Nebraska).

While the consortium has gained strength, its enrollments have yet to show the kind of volume that UMA would like. Going back to the start in September 1974, the total enrollments have added up to something over 5,000. The first semester, 680 registered for two courses. During Fall 1975, the figures peaked, with 1,260 signing up for eight subjects. In Fall 1976, 750 registered for 14 subjects. UMA knows all too well the importance of building a larger constituency in its six-state area.

Who have been the consumers? In profile, the first 2,000 looked like this:

- They had a mean age of 37;
- More than three-quarters were female, and 79 per cent were married;
- Just under half had an annual income (before taxes) of less than $10,000, while 68 per cent made less than $15,000;
- Some 46 per cent had had secondary, trade or business school education, or less; one-quarter had gone to college, 15 per cent were college graduates, and 12 per cent had taken some graduate study;
- For 74 per cent, it had been at least a year since they had taken part in formal education, while 47 per cent had been away from academia for at least five years; and
- About 37 per cent had no interest in a degree, while 63 per cent hoped for "some degree."

Since its start, UMA has produced course packages itself or, when necessary, rented them from outside. By early 1977, it had completed three courses, and was producing six more; eight others were in the concept stage.

There have been tough blows along the road. For one, the National Endowment for the Humanities (NEH), decided in mid-1976 not to put any more money into production of a UMA-initiated course, *Great Plains Experience*. As it was well into the project by then, UMA decided to go ahead with it "on our own . . . . " Since then, NEH has decided to put $185,000 into another series also well along, *Japan: The Living Tradition*.

As a footnote, surely one of UMA's biggest hurdles almost from its very first day has been trying to track down adequate resources to make high-quality courseware. As of June 1976, the institution had raised money from at least 15 different sources for course development.

Almost no outsider has been closer to UMA than NIE's Dr. Jerome Lord, Chief of its Open Learning Systems Branch and project officer for NIE's grants to UMA. He cites several big accomplishments by the University of Mid-America:

- As much as any institution, UMA has "kept at the forefront of people's thinking about the possibilities of open learning . . . particularly open learning that was consciously allied to use of mass media."
- Further, "One of their particular strengths in UMA has been in managing the multistate grouping."

At the same time, Dr. Lord has seen a need for certain changes. UMA, he observed in Fall 1976, should switch to "producing research that is of general utility to the outside world." Then, the "management capability" should be reinforced. He argued too that UMA should narrow the gap between learner and the project, which is based in Lincoln. "This project belongs right there with your students," he said. "They've got to localize . . . ."

A six-state collective of this nature could hardly spring into being fully armed, fully protected, against the ancient quirks of higher education. Among many, Dr. Lord has seen that UMA could not complete all its castles in a year or two. In fact, he said, "evidence of organic substance won't come until the end of the decade."

On the Associate Degree Track. In many ways a young institution, the University of Mid-America was still grappling in midwinter 1977 with whether its courses should lead a student toward a degree. Elsewhere, that decision had been faced some years ago, and telecourses have been worked into students' degree-seeking directions.

One such site is the Milwaukee Area Technical College. Operating on four campuses, it meets some of its outreach needs through two public TV stations, WMVS (Channel 10) and WMVT (Channel 36).

Since September, 1971, MATC, College of the Air, has produced and broadcast telecourses to help its students meet their requirements for an A.A.S. degree. These are individuals, in the main, who are interested in vocational-technical careers. Over a five-year span (through 1976), MATC offered 44 telecourses (including some repeats), with these results:

- The courses had a total enrollment of 11,258;
- Over the five years, completions averaged 82 per cent;
- *Basic Economics*, produced at MATC in 1973, was broadcast five times, and 2,155 students completed the course; a social science course titled *American Institutions* had a registration total of 2,200 for six broadcasts.

As of Winter 1977, it was theoretically possible for a student to meet almost one-third of his degree requirements (21 hours of the 61 needed) through TV, and his transcript would not reflect the fact in any way.

In the first years, MATC has concentrated on completing the core courses that every student must take—hence *Basic Economics* and *American Institutions* and *Communication Skills*. It has also put some of its energies into producing vocationally oriented series, such as *Police Science* and *Introduction to Commercial Art*.

Perhaps two-thirds of MATC's College of the Air Courses have been produced right at MATC's public TV facility—in color; following instructional design precepts; using film clips, videotape inserts, role-playing and other means to distinguish the product from the standard lecture format. MATC has been turning out about one course a year at a cost of roughly $60,000. To round out its inventory, it has acquired courses from Chicago TV College, Great Plains, UMA, and Miami-Dade Community. All MATC's courses are being distributed by GPN.

A Milwaukee resident, whether matriculated or not, could easily pick up MATC's courses over Channels 10 and 36; the two transmit the credit series (with at least two repeats for each) for a total of more than five hours a day, five days a week. Do students like the TV alternative? Surveys have shown a positive response "all the way," according to WMVS/WMVT Manager Otto F. Schlaak. "Students like it. Many felt they

were too old to come back to school. But they found they could do the work. TV's been a leader for us."

Oranges, TV and the Computer. Far to the south, on farm fields, urban renewal sites, and an old Air Force base, the 60,000-student Miami-Dade Community College has put together its own "Open College" over a six-year span. Providing courses with TV, radio, phone, and computer support, Open College has counted 19,319 enrollees since Winter 1971. That would seem to spell good acceptance anywhere.

Like UMA, Open College has felt a number sag over the past two years. The Fall 1975 total was 2,219; then, in Fall 1976, it skidded to 1,495. The College's Dean for Administration and Open College, Dr. J. Terence Kelly, pointed to several causes for the decline—a rise in college tuition, tighter veterans-benefits regulations, elimination of a 100 per cent fee waiver for teachers in the local schools. But by Winter 1977, there were signs of new vitality. In the second semester of 1976-77, 2,675 signed up for 12 Open College courses, a "substantial" increase over the same semester the year before, according to Dr. Kelly.

Equipped with broadcast-worthy TV gear, staffed in good part by commercial TV escapees from the cold north, Miami-Dade has been quite able to do its own production thing. *Man and Environment* came first; 5,628 students have taken it at the college. Since then, Open College has adapted other materials or brought in acquisitions. It has offered *Ascent* six times (four times by open-circuit broadcast, twice by cassette for independent-study purposes), drawing a total of 2,742 registrants.

For all TV-based courses—such as *Classic Theatre, Ornamental Horticulture, Writing For A Reason, Introduction to Psychology,* and *Cultural Anthropology*—developed by other institutions, Open College has worked up support services (radio, phone interaction, computer). These extras, said Dean Kelly, help "learners at a distance" feel less lonesome, more motivated.

The manufacturing side of Open College falls into Frank Bouwsma's domain. There, a producer might build a whole course. Or, as with *America,* staff might make a curriculum "allied unit by unit with the videotape episodes . . . ." (*America* will be ready for use, as will a similar adaptation of *Civilisation,* in January 1978.)

Drawing on what it learned with *Ascent,* Miami-Dade developed a course to go with ABC's *Roots* in January 1977. Executive Vice President Robert McCabe wrote to colleges about the unique challenge posed by *Roots:*

. . . these gripping dramatic presentations should leave millions of Americans with a desire to learn more. What a beautiful opportunity to attract students to your course!

Miami-Dade, surviving well in a land of bravado, believes that Open College has been a success. To support that, Dean Kelly cites these figures:

1. It costs Miami-Dade $1,400 per full-time equivalent student, while
2. A TV course can be offered "at a cost of around $1,100 per FTE student."

As for faculty productivity, he reports that one full-time teacher "produces" 400 credits per term. In the open-learning program, one person doubles that output, with 800 credits a term.

Apart from economics, what makes Open College "so successful," in Dean Kelly's words, is the "RSVP" component. RSVP stands for Response System with Variable Prescriptions. In a sentence, it is a "faculty-computer partnership directed toward individualizing instruction while managing up to 5,000 students in any single course, whether the course is presented on campus, as independent study, or in a remote setting." RSVP was started in 1972. As of December 1976, the college was ready to sell its software to others.

Quite simply, RSVP reacts to information it gets from a student by "giving him prescriptions for the questions he missed and commendations for those answered correctly." Term after term, students have given "the highest rating" to this Open College component, according to Dean Kelly and Research Associate Dr. Kamala Anandam. Does it affect performance? Miami-Dade researched that for Fall 1975:

1. Among RSVP participants (67 per cent of the whole):
   - Dropout rate was 11 per cent;
   - For grades, 20 per cent received A's, 28 per cent got B's, 18 per cent had C's, seven per cent were at the D level, and 12 per cent had an F or an incomplete.

2. Among those who did not take part in RSVP support (33 per cent):

- Some 46 per cent dropped out;
- In the grading, the list looked like this: A's, one per cent; B's, four per cent; C's, six per cent; D's, three per cent; F's, six per cent; incompletes, seven per cent;
- For the rest—73 per cent—they missed one or more exams, failed to request an incomplete, and wound up with an F.

Dean Kelly has labelled RSVP "the single most useful component of all the components in the open learning system, including the actual television programs." The moral? High-class TV may motivate, but the evidence seems to call for other ingredients in a total learning package. By now, Miami-Dade has played its RSVP games carefully enough to give firm validation to that kind of statement.

Except for needing access to noncommercial air waves and promotional support, Open College has grown up as progeny of Miami-Dade. In many other cities, the public TV outlet has been the lead horse in televised post-secondary education. As Dr. Houle's figures declare, there's enough to do in post-secondary education for both public TV and colleges alike—working separately, or, one would hope, together.

Problems Still Persist

For its part, public TV over the years has offered innumerable learning moments and sequences for adults. However, it has not built up enough escape velocity to leave behind these problems:

1. There is only so much air time disposable for adult learners. Could cassettes help with the jobs at hand? Should PTV agencies gear up further for ever more flexibility, based on a rigorous assessment of a target audience's needs and unique traits?

2. PSE needs utilization fully as much as ITV—maybe more so.

- George W. Eyster, Executive Director of the Appalachian Adult Education Center at Morehead State University, believes that utilization in adult education "is teetering on the brink of emergence or abandonment as a teaching/learning system of considerable importance." Writing in *Adult Leadership* for December 1976, he added that some person-to-person contact is crucial to student involvement, retention, perseverance, and achievement.

3. How will the adult pay for his learning?

- Dr. Lord of NIE has cited an American Council on Education report that "part-time students on the whole are massively discriminated against in federal and state student and institutional aid programs . . . . "

4. Who knows what is the best way to educate an adult?

- Exploring this, Dr. Lord recognized that "there is no one particular alternative to the in-school, face-to-face process that works for most people." However, "something works for everybody, but we don't often trouble to find out what it is." Yet, wrote Dr. Lord, "the variety of available methodologies is breathtaking."

Recognizing all the problems, one point of even greater magnitude remains: the needs among adults for post-secondary education are immense. In the October 1976 *Change*, Walter F. Mondale, then a Vice-Presidential candidate, asserted that:

We must now return to the job of providing greater access to learning for all Americans, regardless of age or social and economic position.

We have obviously not finished this task when . . . one in five persons cannot read well enough to understand a help-wanted ad, one in three cannot figure out how to read a newspaper grocery ad, and one in six cannot perform the most basic of writing skills. And there remain untold millions, often in mid-career, nearing retirement, or past retirement age, for whom learning is as crucial a need as for those of traditional college age.

Section 2

Radio

Education Through Radio: A Status Report

Every Saturday and Sunday morning I awake with wonder and expectancy for your fine broadcasts which bring me knowledge through listening.
—A listener to National Public Radio's *Options in Education.*

I like these radio programs better than T.V. The children listen better and form their own pictures in their mind. I really like radio!
—Primary school teacher, Greenwood, S. C., about the new instructional radio service in that state.

The "Higher Education Applications of Radio" project proves to us that the way in higher education is by radio, not by television. Every time we breathe in higher-education television, we lose a fortune!
—George Hall, Director, Virginia Public Telecommunications Council, October 1976.

Forty-nine stations (26 per cent) have not provided educational services in '75-'76 . . . but indicate they will either independently plan or will be encouraged to begin or expand a service if (National Public Radio) provides programs and print materials intended for local development of educational activities . . . .
—National Public Radio's Educational/Instructional VOTAB survey of 189 public radio stations, Summer 1976.

When it comes to vying for a student's attention, chances are that instructional radio knows better than other media what the word "competition" means. For one thing, stations offering this service have been at it for many years, in a part of the broadcasting industry that faces its 60th birthday only two years from now. Some, in fact, have been doing good works for a very long time indeed.

In early 1977, this use of noncommercial radio for instruction and less formal education received a potentially important boost: National Public Radio began to consider what its role in education might be. The problems facing NPR as it pondered many options ranged far and wide. Nevertheless, it decided to square off against alternatives through an intensive educational study.

Meanwhile, there were other hints of change. The Office of Newark (N.J.) Studies moved closer to converting that city's 28-year-old school station to a full-service public radio outlet.[1] This was consistent with a trend that has begun to take shape elsewhere in public radio, a move toward a broader spectrum of services.

In another seeming trend, subcarrier transmission and the use of audiocassettes for aural instruction gave evidence over the past two years of being on the increase. In her article, Dr. Elizabeth L. Young, Director of The Ohio State University's Telecommunications Center, explores some of these alternatives.

Coupled with them has been an intensified use of instructional design techniques to improve the product.

In at least one state—South Carolina—instructional radio has taken a giant step forward since 1974. Four 100,000-watt stereo stations began broadcasting classroom materials there in February 1976. By that spring, the Educational Radio Network was measuring its audience in the thousands.

All in all, the climate for instructional

[1] A study on the use of subcarrier transmission and audiocassettes by Newark Schools will be available in the Winter of 1978.

ra[illegible]ems to have moderated a bit. The various changes give advocates an obligation to look more closely at what their role should be in the future.

Part of the Scenery

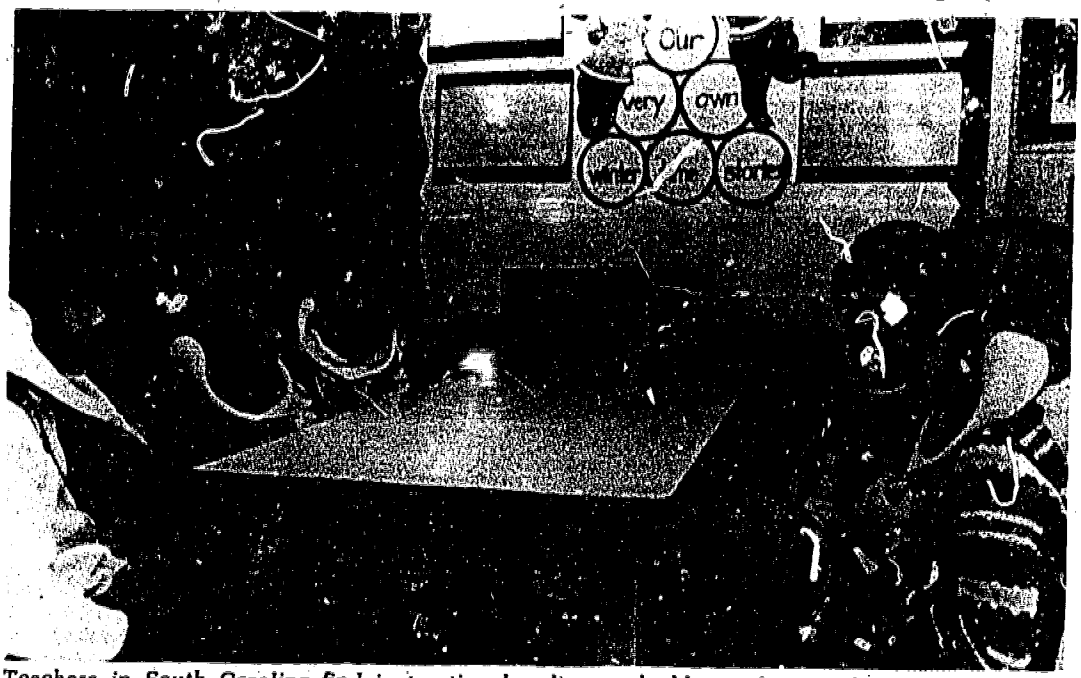
For years, radio has been ingrained in the American way of life. We own more than half the radios in the world. Almost 99 per cent of our homes were radio-equipped in 1976; the typical household had at least five sets. As an average, adults listen to radio three hours and 20 minutes a day; eight out of ten tune in to radio at some point every day.

Narrowing the focus to public radio, it has undergone real growth during the seventies. In 1969, only 47 per cent of the nation was being reached by public radio. Eighty of the 457 noncommercial radio stations then operating had a permanent staff of at least three. The average budget was below $10,000 annually. More than half the stations were ten-watters. In other words, the service, as earnest as it may have been, was not widely audible.

Operating under its legislative mandate, CPB came forward in 1970 to join with the stations in strengthening the noncommercial radio community. Certain criteria were set down; licensees would have to meet them to qualify for CPB dollar support. In that first year, they had to have at least one full-time and four half-time employees. Some 93 met that test, and therefore received a grant of $7,500 apiece.

By 1976, "qualified" stations had to have at least five full-time staff members, and broadcast a minimum of 18 hours a day, 365 days a year. At the end of 1976, 175 public radio stations had reached these goals, earning a basic grant of at least $22,800 each from CPB. The average full-time staff had grown to 13, and the average budget had passed $165,000. The roster of noncommercial stations had swelled, too—from 457 in 1969 to more than 800 in early 1977.

The results of this growth and change have become highly visible in Minnesota. There, Minnesota Public Radio (MPR), a network of six stations reaching nine-tenths of the populace, has come to be something of a showcase for noncommercial broadcasting. Budgeted at $1.9 million a year, the network transmits 163 hours of programming a week. Eighty per cent of those hours explore the performing arts; the balance, news and public affairs. Used as a national production center for drama, the Network in cooperation with the University of Wisconsin produces *EARPLAY*. This major project creates contemporary radio dramas, sustained by a handsome budget ($450,000



Teachers in South Carolina find instructional radio a valuable teaching tool. Shown above, a group of pupils at Spartanburg, S.C. Clifton Elementary School listen to one of the educational radio programs.

for FY 1978). In another important activity, the Minnesota system's Radio Talking Book Network turns out 19 hours a week of readings for the visually handicapped, using the network stations' subchannel as the means of delivery.

Public Radio and Education

Noncommercial radio has been at work in American classrooms for decades. Just how much, though, has been a real question. A concerted search for an answer began in 1976. It grew out of a December 1975 decision by NPR's Board of Directors to study how the agency might expand the educational side of its services. With CPB aid, NPR made plans for an Educational Services Study Project, and hired Don Holloway to direct it.

Among other steps, Holloway set out to conduct a ten-question survey. Its goals were these: to see how much public radio stations had been doing in education and instruction during 1975-76 and then to learn how likely it was that these licensees, working on their own or with NPR support, would increase their output of an educational type over a two-year period or begin that activity. With persistence, Holloway got answers from all 189 stations[2] on his list. This is part of what they told him:

1. A total of 85 stations (44 per cent) transmitted educational service "for either K-12, post-secondary formal or post-secondary informal education."

2. Of the 189, 44 (23 per cent) performed services for the K-12 spectrum.

3. Thirty (16 per cent) both produced and aired programs for post-secondary-education credit.

4. Almost three out of ten offered programs for adult informal education.

5. As for possible expansions of educational activities, these were some of the replies:

a) Some 61 stations had no plan to begin a new educational service or bolster what they were doing.

b) A larger group—73 stations—intended to "begin a new service or increase the present service."

c) A sizeable segment (128 stations) replied that they would be "likely to use" NPR Educational Services."

d) Of those 128, 104 would have a "dependence" on NPR for these services.

e) Indicative of the impact such NPR service might have on licensees, Holloway also learned that more than a quarter of those not made available any educational services in 1975-76. Yet they said they would plan on them, or would begin or augment a service, "if NPR provides programs and print materials intended for local development of educational activities . . . ."

Realistically, the survey was limited in dimension. Yet its results showed clearly that at least some public radio stations had a definite interest in instructional services. This response called for a closer investigation by NPR of the alternatives available.

Actually, six-year-old NPR has been supporting educational activity for some time. As one instance, it has maintained an Instructional Programs Service, i.e., a library of school-usable series produced not by NPR but elsewhere. The 1976-77 catalog itemizes 43 series—20 for the elementary grades, six for high school use, and the balance for the grades in between. Nine stations and the Wisconsin Educational Communications Board had developed the programming. Leading the list with 11 series: WNYE, New York; KBPS, Portland, Oregon; and KUOM, Minneapolis-St. Paul, each turned out eight of the program packages.

A Spectrum of Services

In some places in 19[illegible] public radio played the role of teacher. It was instructing grade-school children of Oregon and South Carolina. It was serving doctors, dentists, nurses, and paraprofessionals in half a dozen northeastern states. It was bringing college-credit courses to adults in Indiana, Nebraska, and other midwestern states.

Demonstrating public radio's be[illegible] versatility, SCA (Subsidiary Communications Authorization) and audiocassettes continued to take on assigned educational duties, as offshoots of open-circuit, main-channel delivery. Cassettes became partners to TV and texts in bringing credit courses to adults at home. As a reciprocal, slides and film

[2] Defining terms, the project director noted in his summary that a decision had been made "to treat each transmitter and its potential audience as an independent entity for a total of 189 stations." Hence, "station" here equals "transmitter."

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embellished audio in continuing education.

These were a few of the activities that drew on these many means during recent months:

On the K-12 Scene. The booklet had the imprimatur of South Carolina's first citizen of public education, Dr. Cyril B. Busbee, State Superintendent of Public Instruction made his outlook very clear to teachers receiving the 1976-77 *South Carolina Instructional Radio Resources* catalog:

It is with professional pride that the State Department of Education announces the addition of a new and exciting medium to your resources—INSTRUCTIONAL RADIO. . . . Let me urge each of you to utilize this new instructional medium.

Joined as a network in February 1976, FM stations in Greenville, Charleston, and Columbia, and a transmitter in Sumter, brought K-12 series to school systems from 8:30 a.m. to 3 p.m., Monday through Friday. A fourth station was to be on the air in 1977; two others were slated for 1978 and 1979. With this new development, South Carolina, a dominant force in ITV for years, has now drawn the attention of instructional radio specialists in many places.

Actually the network came into being under the guiding hand of the existent ETV Network. The academic work—course acquisition and development, field utilization—fell to the Department of Education's Office of Instructional Television and Radio. Clyde H. Green, Director of the office, had brought in Ms. Pat A. Conner in mid-1975 to get the radio venture launched.

For the network's February 1976 debut, the State Board of Education approved the acquisition of 20 series for the K-12 grades. This followed "widespread" evaluation of the choices by teachers, students, and others across the state. But that was only part of the work. As Conner recalls, people were still saying "instructional what?" This demanded an awareness drive "that rivaled the London blitz." Press releases, promo spots, cross-plugs with TV, interviews, uncounted speeches—they were all aimed at telling school personnel that radio could do a job, too, and that it was about to become available.

One big deficiency was receivers. Many schools, hit by a budget pinch, were "so highly motivated to incorporate radio" Conner remembers, "that teachers voluntarily brought radios from home." In time, matching funds were generated to help schools buy fix-tuned receivers (they're less tempting, should vandals visit).

In May 1976, three months after the kick-off, a survey was made to see how many were listening. The staff learned that:

1. All of 10,502 students were using classroom radio;
2. They were in a total of 996 classes; and
3. Total radio series enrollment was 23,938.

Beyond these basics, teachers rated all of the series they had used as "good to excellent." A number wrote to say that while they could not get equipment for that first season, "1976-77 would see radio as an integral part of their school plan."[3]

Gearing up for the 1976-77 academic year, the Office of Instructional Television and Radio produced a 117-page catalog. Here, a teacher could find a crisp rationale (drawn from the National Educational Radio Task Force Report of 1973) for using radio to instruct:

1. Radio involves the student by stimulating his imagination;
2. Radio helps to teach listening skills;
3. Radio brings immediacy into the classroom;
4. Radio implements newest curriculum approaches; and
5. Radio permits use of a variety of formats.

Evidently, teachers heard the message. As of May 1977, Pat Conner had in hand an interim report on the uses of instructional radio in the network's second academic year. Across the board, there had been a highly gratifying 152 per cent increase in all categories over the year before. This was the 1976-77 breakdown:

1. Some 20,287 students had listened to radio courses, a 93 per cent increase over 1975-76;

[3] In the September/October 1976 *PTR*, Conner wrote an absorbing description of the network's beginnings. Her "Letter From South Carolina" was a very useful source of some of the information that follows.

2. Radio was used in 2,048 classes, a 112 per cent rise;

3. Enrollments had gone up by 106 per cent to 49,419;

4. Schools using radio—they numbered 92 in the first year—climbed to 232; and

5. Where schools had 153 radios the first year, they owned 609 in 1976-77, a 300 per cent jump.

At the start, the network had had to depend on outside course materials, such as *Makers of the American Revolution*, produced by WNYE-FM, New York. The Office of ITV and Radio saw, however, that it could not depend wholly on suppliers elsewhere. South Carolina would have to have its own series "to meet local needs." By the Summer of 1976, that process was underway. The first homegrown series dealt with vocabulary skills for middle-school grades.

To attack this task, Conner formed a production team: a producer/director, a writer, and herself as executive producer. After brainstorming, draft scripts went to reading committees of teachers and students. Why the latter? "It would be foolhardy," explained Conner, "not to maintain contact with the ultimate consumer of a product." Following rewrites, the scripts were routed to subject-area consultants, and then into production. Next came classroom testing of each program before releasing the package for distribution. This, in its very first production, the new network staked out a commitment to the latest design techniques.

Stimulating schools and teachers to use radio called for no less an intensive push. To aid the network in utilization, a six-member team of consultants has been put to work. Writes Conner: "They preview programs, recommend strategies for individualizing radio resources, and serve as facilitators in areas of technical concerns." She has found their presentations "essential in integrating instructional radio into the educational mainstream of South Carolina."

Meanwhile, a utilization film was in the works early in 1977. It was being designed to show students reacting to radio courses. Once the film has been finished, Conner will have it presented over the state's eight ETV stations and closed-circuit system.

Statewide use of radio has had an added lift from the September 1976 publication of a book titled *Guide for Relating Instructional Television and Radio Resources to the Curriculum Requirements of the Defined Minimum Program*. In other words, after curriculum weaknesses had been pinpointed, the Office of Instructional Television and Radio suggested specific series to help meet those needs.

In only a matter of months, Conner and her associates have put some real substance behind their effort to prove that radio is not only alive and kicking; it's a mover and shaker in South Carolina. Some proof is already in hand in the form of letters from teachers. In March 1977, elementary school teacher Jan Hartz of Brunson, S.C., wrote this endorsement:

My classes have really begun to listen carefully. The programs are presented in such a lively, humorous, and interesting style that they want to listen. The programming is varied and versatile so that it covers many grades, subjects, and interests. The students want to know every day if we will be listening to the radio. Some have asked for the station call number so that they can listen at home.

Many Signals for Young Minds

More and more, flexibility is the password. Purdue University's work with the Gary high schools explains the point.

To give fast-track seniors a leg up toward college, Purdue has sent them nine taped radio courses, along with two on videocassettes. They can be played back at teacher convenience. A phone option helps students interact with instructors at Purdue. As a "sales" device, the university has also provided a special videocassette. On it, teachers of the audio courses explain what they cover in the sound series.

Pat Conner (left) conducting one of the in-service radio workshops for teachers in South Carolina.

Then there is the programming generated so persistently by KBPS, Portland, Oregon. This is one of 16 school stations on the air in Winter 1977. Of these, ten have used their main channel to air classroom instruction.

For its part, KBPS is licensed to the Portland Public Schools and is based at Benson Polytechnic School. A 1,000-watt AM, it operates 18 hours a day, seven days a week. Its weekday marketplace is 125 schools. In recent years, the student population has slipped from 80,000 to 60,000, with families moving to outlying areas. Another development has been decentralization. This has meant the loss of various central curriculum supervisors; many teachers have turned to KBPS as a source of expertise in these areas.

Station Manager Patricia L. Swenson is accustomed to this kind of challenge. At the outset, she knows what the boundaries are:

An audio resource, if it is to undergird your curriculum, has got to fill a teacher need. It has to be something they can't get in any other way or as quickly. Otherwise, why use radio? The best things we have done have been [illegible] teachers have an expressed need [illegible] a general push in an area of weakness.

To [illegible] and creatively, Pat Swenson draws on her own experience, as well as the talents of two staff members. One "does all the creative drama with children, and is the utilization specialist, too." The other is a producer, a "technical perfectionist," according to Dr. Swenson. The station may call in a freelance writer—perhaps a teacher (KBPS has money to cover release time). Then, there is "no end of acting talent" in the Portland schools and community at large.

Faced with teachers' needs, KBPS has produced these series (among others) over the past several years:

1. *For career education:*
   - In *Who's Behind It?* the program began with a product—a bottle of pop, or a pizza—and then fanned out to discover who made it, and how it was done.
   - For a higher grade level, *This Could Be You* sent two high school students to interview people at work.
2. *For consumer education:*
   - *Wise Choices*, a "Best of WEST" winner in October 1976, covered possible problems with using credit cards, and such experiences as dealing with door-to-door salespersons.
   - *Whatcha See Is Whatcha Get* won the first CPB children's program award in 1975. Using a tongue-in-cheek style, it dealt with consumer advertising, and other subjects such as supply and demand in the oil business.
3. *For mathematics materials:*
   - *Math 'N Rock* featured a local NBC disc jockey, current rock hits, and tough math problems. Listeners were to work on the math as the rock beat pulsed.
4. *For values clarification:*
   - To explain this tricky subject to children in grades three to five, KBPS came up with *Who Cares?* A planning team (a professional in valuing, a writer, and three teacher/consultants) made this one of the station's "most expensive" series. Open-ended dilemmas in dramatized form set forth the issues. (KBPS won a 1975 Ohio State award for this project.)
5. *To make up for the loss of a subject-area supervisor:*
   - In art, the station came up with *Arnie's Art Shop*. Children were asked to look around and see the sizes and shapes of classmate's heads. Or Arnie would paint a person, and listening pupils would, too. Every school had an Arnie's Art Gallery. Teachers were so pleased with the series that KBPS did another 12 units.
   - In music, *Catch a Sound* also was the response to loss of a supervisor. Mr. Note, who lives in a sound shop, is addicted to electronic music. Attracted by the sounds of a Moog synthesizer, Melody and Clef come to the shop and are invited in for some musical experiences.

KBPS also has a commitment to children's drama. Two mornings a week, the studio is assigned to live productions involving children, and afternoons often find other student dramas being produced. Dr. Swenson is delighted with KBPS's creative abilities. She only wishes she had "an equal amount of money for classroom utilization specialists." Her conviction, probably gratifying to

any field representative's ears, is that a utilization person is to be coveted at the same level as a fine writer/producer.

Radio-Delivered College Credit

"Dear Listener," the letter began. "If this is the first time you have thought about taking a university course by radio, you might be surprised to learn that Purdue leads the nation in this type of instruction."

Then, Richard O. Forsythe, Director of Purdue's Office of Instructional Materials Development, went on to explain that the university's AM station, WBAA, 5,000 watts strong and 55 years old, was "broadcasting more courses to more people than any other radio station in the United States . . . ." It has been immersed in that type of programming since Fall 1969.

In Fall 1976, listeners to the West Lafayette, Indiana station could have signed up for four credit courses—*Women and the Sciences, Human Development, American Humor*, and *Introductory Sociology*. The first carried one credit; the others, three each. Registration was just $5 a course (along with a $25 examination fee for part-time students), and there was no penalty for failure.

Going back to Spring 1974, Purdue summarized this use pattern over a two-year period of WBAA course broadcasts:

1. Some 38 courses were offered over the span of six semesters. There were repeats: *Personal Finance* ran three times, then, after revision, twice more.

2. In that period, Purdue took 1,654 orders for course manuals—43½ per course.

3. Some 1,121 took the tests, that is, 68 per cent of those ordering manuals. Of them, 771 passed, or just over 68 per cent of those who tried.

4. In five of the 38 courses, all of those who took the test passed.

5. The course with the best response: *Marriage and Family Relationships*. Some 97 ordered manuals, 65 took the exam, and 59 passed. Next in line was *Human Development*.

Going back to 1969, Forsythe's figures show that by June 1976, 33 different courses had been offered over radio. A total of 9,523 had registered. Of them, 2,691 took the tests and earned credit—or 28.2 per cent.

Who were these individuals? Three-quarters of the credit-seekers turned out to be full-time Purdue students. The rest were off-campus learners. Many of the latter indicated, according to Forsythe, that "radio provides the only means for them to continue their education."

Until recently, Forsythe picked up courses virtually as they were presented in lecture halls. Now, stemming from a reorganization within Purdue, he can apply design procedures. Reflecting that, he concentrated in the Fall of 1976 on producing one course—for 1977—*Personal Finance*. In the previous year, they might have had four in the works at once.

It will take a year to finish *Personal Finance*. This is not hard to believe, as you look at the ten "Procedures" that Forsythe's office calls for:

1. Draft content outline and behavioral objectives.
2. Project team review.
3. Revision.
4. Advisory council review.
5. Revision.
6. Script program and manual material.
7. Record actualities and get releases.
8. Produce program.
9. Evaluate program and manual material.
10. Revision.

Forsythe projected that the 36-program, three-credit course would be available for use in the fall of 1977. From his description, it will be "a far cry from going into a classroom and miking the professor."

What lies ahead for college-credit radio, Purdue style? Dick Forsythe sees:

. . . much more instructional design, much higher quality, much better developed materials. I see us establishing new and different criteria for our radio courses. Now we have many other delivery options: television, film, print, our Independent Study Center, and various audio-tutorial formats. We'll look at radio delivery as something unique. We don't have to rely on it to do the total job any more. We'll look for those courses that seem to do best by audio treatment. We'll do fewer things, but we're going to be increasing the effort and the money spent.

Virginia's HEAR Project.

From the sound of it, the old ad hoc days in instruction by radio are over. Or at least they seem waning, if the design efforts at Purdue, South Carolina, and KBPS represent what is going on elsewhere. From the HEAR (Higher Education Applications of Radio) project account, one would have to say that they have accepted the forecast in Virginia, too.

In September 1976, the Virginia Public Telecommunications Council (VPTC) issued a final report on HEAR. This undertaking, VPTC concluded, "opened doors" between higher education and public radio in the state, and was, in brief, "highly successful."

Planned as a year's exercise costing VPTC $62,055, HEAR was to "experiment with and develop continuing uses of radio broadcasting (and related audio forms) by which state-supported institutions of higher education could more efficiently fulfill their various 'off campus' instructional, information and cultural missions." The contractees were four public radio stations (WRFK, Richmond; WTGM, Norfolk; WVWR, Roanoke; and WMRA, Harrisonburg). From each one the council proposed to buy (1) air time, (2) studio production and program assembly time, and (3) the services of a "producer/designer" for at least 80 per cent of his time.

Work began in July 1975. State-supported colleges and universities in the areas covered by each of the stations were invited to send a delegate to a HEAR committee. As it worked out, 30 of the 39 institutions did something—produced programs, provided speakers, developed public service materials, and/or used the series turned out under the HEAR mantle.

Cooperation varied. In the Tidewater section, only one institution joined in the course-making process. In contrast, both Richmond and Roanoke committees agreed to develop cooperative programs. As one instance, four Richmond-area colleges joined in doing *Virginia and the American Revolution*. Each college could use the series as it thought best; usually, it was the nucleus for a full course. In all, seven college courses came out of station-college efforts during HEAR.

As the project wound down, station personnel laid out their comments. Among the lessons learned:

1. For similar projects down [illegible] staff-member should work [illegible]

2. There should be more contact with college representatives.

3. Given more time, the stations could have found the right contact at each college. "In many cases those appointed . . . did not have the time or interest required."

4. One year for the project was not long enough. "Schools had to be introduced to the capabilities of radio before any programming decisions could be made. Four-year colleges need several years lead time to introduce new curriculum such as a radio credit course."

5. In the future, money should be budgeted for faculty working on a series. In HEAR, instructors often volunteered their time because they were interested.

There were counterbalancing advantages. Perhaps more than anything else, HEAR made institutions aware—"in many cases for the first time"—of local public radio. These stations could perform services for higher education, and at "minimum" per-student costs. These other positive points were singled out:

1. The radio courses had led to larger enrollments at several colleges. As a result, they were leaning toward more broadcast efforts.

2. Stations found that HEAR had opened up "an area of activity and income" untapped before.

3. Professors got satisfaction—indeed "greater recognition"—from working on a course.

4. The project had led stations to assemble "diverse programming" which they would not have otherwise done.

At the VPTC, the staff concluded that for slightly more than $62,000, Virginia had received quite a bargain. The dollars had bought a greater variety of programs, more interest in using radio for college courses, and a better exchange between stations and higher education. The Council's former director, George Hall,[4] summarized the under-

[4] George Hall now is President for West Central Illinois Educational Telecommunication Corporation.

taking in an almost rhapsodic vein:

We're just delighted! That American Revolution course was superb! We had Dumas Malone and the biggest names in American History. The programs were diverting, and they cost a little! The materials are now on an audio cassette in a number of schools, and will be used for years. We couldn't be happier!

Messages for the Professional

It would be remarkable to find someone in public radio not familiar with WAMC's continuing education broadcasts over its subcarrier. This FM of Albany Medical College, Albany, New York, reaches many miles from its mountaintop transmitter in Massachusetts. In fact, they say this vantage gives the station "the second highest broadcast coverage" of any FM in the northeast.

Another asset of the station: its gregarious manager, Albert P. Fredette. He has been on the scene since WAMC began broadcasts for doctors in 1955.

For its interactive SCA transmissions to health professionals, WAMC by late 1976 had linked 68 hospitals and nursing homes in six northeastern states. Along with serving doctors, the station was feeding out instruction through two-way radio conferences for six other groups (nurses, dentists, physical therapists, radiologists, technologists, dietitians, and medical technologists).

This output is no casual matter. All WAMC's conferences have been okayed by an accrediting agency—the American Medical Association, and the state nursing association. By listening, the health specialist can earn real-time credit, right at his or her hospital. The only element missing, says Fredette, is the "visual confrontation, and as you and I know, that isn't essential."

Actually, WAMC works in visuals, anyway. Oftentimes, slides are used at each receiving location to accompany the radio lecture. The listening M.D.'s can ask questions; there is printed matter as well.

WAMC has become quite thorough in taking attendance. "We know every person who's attended one of our two-way conferences," says Fredette. Every time an individual shows up, he completes a card, which includes an evaluation. As a result, WAMC was able to report that during 1975-76:

1. Some 7,513 physicians and others took part in radio conferences. That compared with 9,514 the year before.

2. Doctors rated the conferences on a one-to-four scale, with four high. Over two years, these were their judgments:

	1974-75	1975-76
a) New information received during this conference	3.05	3.01
b) Value of the information in practice	2.96	2.97
c) Rating of the presentation	3.22	3.14

3. In the nurses' conferences, attendance for 1975-76 was 5,354. The previous year, it was 6,587.

4. Among dentists, attendance dipped from a total of 766 in 1974-75 to 595 in 1975-76.

5. Dietitians declined, too—from 1,117 to 936. Physical therapists showed an increase over the two years. WAMC reached 469 in 1974-75 and 503 the following year.

Commenting on these figures, Fredette said that "the general drop in attendance is due to the fact that a grant for line interconnect has expired and therefore fewer hospitals outside of our broadcast coverage area are able to participate in the system at present, as opposed to 1974-75."

This WAMC service has met a need for years, but it does not pay for itself. In fact, the station only receives about half of its conference costs from practitioners. So it has to knock on doors to raise the balance —at foundations, pharmaceutical companies, and other sources. "We try hard to keep the costs down," notes Fredette. "In trying to motivate physicians, cost can be a deterrent to their participation."

In the Fall of 1976, the Albany station was making a plan for the future. It was looking "at those disciplines which can initially pay their own way"—banking and the law. Then, too, Fredette sees the station's using its SCA experience to feed credit courses for a higher-education consortium. The familiar hazards of inter-institutional cooperation are being worked on during 1977 by a task force from 15 colleges and universities in the Albany area.

Whether this new service materializes or not, WAMC's years of duty for health professionals (and its significant broadcast

schedule for the public certainly legitimize the bold slogan emblazoned on a billboard beside the Albany-Schenectady highway: "Not to Kill Time But to Enrich It—WAMC."

Messages for the Blind

Week-nights in early 1977 on SCA, the Radio Talking Book service in Minnesota had a timely offering for the 3,000 visually handicapped in its audience. Each evening, Neil Duffy read from Alex Haley's *Roots*. This put the listeners into closer touch with what 80 million Americans had seen on ABC-TV.

Like WAMC's conferences, this service for the people of Minnesota and South Dakota has been around for a while. Minnesota was the first state to start a reading network (in 1969) on the FM stations' subcarrier. It joins Minnesota Public Radio and Minnesota State Services for the Blind and Visually Handicapped. The SCA transmissions use the network's facilities for almost 20 hours a day.

Strictly speaking, is this education? That depends on your interpretation. On a morning in February 1977, you could have heard part of Cass Canfield's *Sam Adams' Revolution*. Two hours later, you would have been listening to *The Vicar of Wakefield*. To the imaginative and curious mind, these excursions into American History and English Literature might have more than overcome in themselves the lack of an instructional context.

The Radio Talking Book "teaches" in another way, as well. Through discussions and interviews, it presents the blind rehabilitation attitudes, information, and even some skills. There might be facts about community resources or job requirements. Through these means, the network tries to "stimulate the imagination of the listener to an exploration and anticipation of his own unrealized possibilities." How does this differ from education in the ideal?

Minnesota Public Radio, the conveyor of the *Radio Talking Book* programs, has made its mark broadcasting news, drama and other cultural events. In its use of the subchannel for the blind, it has also shown in

John Merrow and Barbara Reinhardt, the new co-hosts of Options in Education, the popular weekly series that was carried by 82 per cent of NPR stations in 1977.

an exemplary way that public radio can be versatile.

Another Option

John Merrow
(Producer, *Options in Education*):
Why shouldn't the schools just teach reading, writing and arithmetic, and stay out of the rest?

John Ryor (President, National Education Association):
The concept of reading, writing and arithmetic as the sole function of the schools is something that really hasn't existed since the forties. The fact of the matter is our society has changed. What was adequate in an agrarian function in the one-room school house . . . I think simply does not meet the needs of an educated decision maker in today's society.

This was a typical exchange in a public radio series quite unique in national broadcasting: a weekly, hour-long assessment of education in America. This series, *Options in Education*, was being carried during the 1976-77 season by 82 per cent of NPR stations. Thanks to a grant renewal from the National Institute of Education, the programs were going to reach listeners weekly throughout 1977.

To the purist, *Options in Education* might not be instructional; no sequential education here, with grades or credit as the brass ring. But these programs *do* offer sequential illuminations, for sure. How better for a teacher to learn regularly about problem and solution in his or her profession than by listening to a professionally produced *Options in Education*? Isn't this what continuing education is all about?

To generate this series, NPR and the Institute for Educational Leadership at The George Washington University have joined together. It began in June 1974 as a biweekly. In November 1975 it was converted to a weekly. By June 1976 it had attracted 3,500 letters, less than a dozen of them critical. And more than 6,270 transcripts had been distributed as of July 1, 1976. (NPR makes them available at cost.)

With help from NIE and funds from the Carnegie Corporation of New York, the project staff designed a survey in 1976 to learn more about their listeners. A questionnaire was sent to 6,000 individuals. In time, NPR got 1,574 returns (33 per cent). These were a few of the findings:

1. The audience was youngish—55 per cent under 41, with a median of 35.

2. They were split evenly between males and females, with 64 per cent earning under $20,000 a year.

3. They were well-educated: 79 per cent had a college degree, or more. One-third (34 per cent) had been in graduate study beyond the Master's level.

4. Almost six of ten were in education. One-third taught.

5. Asked to name the major problems in education, they concurred that the biggest were: (1) lack of financial support, (2) poor curricula, and (3) parental lack of interest.

6. They were very loyal fans. Some 56 per cent listened at least every two weeks, than average. Only one per cent said it was worse than average.

7. Was *Options in Education* useful? One-half (52 per cent) said the programs were helpful in their teaching or professional development; 80 per cent said they discussed the topics with others; and 39 per cent had read more about the issues taken up by the broadcasts.

8. At least one distinct problem (for NPR): 71 per cent said they had found the series by spinning their radio dial. Conceded an NPR staff member: "Our promotion efforts can be improved."

Frequently, *Options in Education* has treated topics in clusters. On February 28, 1977, the show was the second of two on community and junior colleges. At another time, there was a five-part subseries on gifted children. Teacher Joy Copp of Carol Stream, Illinois, was emphatic about the value of this group:

The gifted series is terrific! I am a school teacher struggling every day to meet the needs of 28 students in science with I.Q.s ranging from 78 to 147. I found your broadcast extremely enlightening.

With *Options in Education*, NPR is working for an audience just as much in need of updating as doctors. It is doing this for about $3,533 a week (exclusive of NPR's in-kind services, research, and promotion

funds for re-use). And, of significance, the information in the programs is directly useful. Teacher David Heikinen of Houghton, Michigan wrote in to applaud the series:

. . . very informative show about jobs and schooling. I plan to discuss this topic in my Junior High School Social Studies classes.

Log for Tomorrow

For some time now, the educational facet of public radio has been undergoing metamorphosis. The substance has improved; new markets have opened up; changes have occurred in form, too. It is all part of public radio's effort to broaden service on all sides, an effort that finds some of its men and women moving quickly to harness alternative ways of delivering education through sound.

In the area of substance, one need only listen to a few practitioners to realize how much the program materials are changing—Pat Conner of South Carolina citing the careful design of a middle-school series on vocabulary skills, Dick Forsythe on Purdue's systematic, year-long preparation of a credit course, Pat Swenson of Oregon listing the extra help brought in to make a values-clarification serie meaningful for primary-school pupils.

Then, a new mix of ubstance and form has become more and more evident. It has involved the use of alternative means in instruction-by-sound, that is, methods other than open-circuit, main-channel transmission. Illustrating the point, there is the plan being worked out by WAMC's Al Fredette for health professionals:

> *develop individual packages tors would pay for on an in- . He would buy the cassettes, a receiver, and a reduction in tuition, particularly in teaching programs in outlying communities. The professionals could make a choice of vario modes—in-person, cassette, radio, perhaps even some television elements.*

For a certainty, this represents the catholic view. In early 1977, one did not hear much dogmatism about methods. There was a readiness to pick media best able to do the task at hand, and perhaps even to use several for one assignment.

In its first course, *Accounting I*, the University of Mid-America (UMA) used not one but five ingredients to teach (text, study guide, TV, newspaper features, and audio tapes). Through an assessment, UMA gained some valuable insights about the relationships of these media:

1. Students in that course's second use (Spring 1975) said that on the average they had not seen six of the 15 TV units. Scheduling problems or other factors had gotten in their way. Further the students had "moderately negative" views about the TV programs. They wanted greater seriousness, more content.

2. As for *Accounting's* audio tapes, almost all enrollees said they listened to all of them. They were rated "highly in importance and general helpfulness . . . ." Students were "enthusiastic" about the helping aspect of these components. Their negative reactions had to do with "entertainment" elements. As with the TV, the learners didn't care for non-instructional tapes in the audio.

3. In UMA's summary, "the text, study guide and problem presentation portions of the audio tapes were well received and highly rated" for this course.

The nub of this is that media-oriented educators in different places now seem ready to accept a package approach. Along with audio components, there could be a text, study guide, TV programs, learning-center work, self-tests, mail-in written exercises, two-way interaction by phone, and computerized letters. There is no longer an insistence on a one-and-only method.

Just as substance is changing in public radio's educational activity, so are some of the forms. As an outgrowth of its 1976-77 Educational Services Study Project, NPR is sifting through the choices it has for widening its work in education.

NPR's broader role might include tie-ins to institutions such as UMA. Were that so, NPR would have a big part in making audio components for UMA courses. Then, activity has already taken place with NPR working on *Courses by Newspaper* in a new series by Henry Steele Commager. However, NPR has a distance to go before making a formal assignment of people and dollars to educational activity. What might be the structure of an education office? What services would it undertake? What types of production—and how much—would it do?

NPR was hoping to have the answers to these questions and others by Fall 1977.[5]

Inevitably, such a change at NPR will be accompanied by differences in opinion. So too is another shift in form, that is, the switch of a school-licensed station to the broader portfolio of a diversified public station. This process was underway during late 1976 in at least one city. WBGO-FM, licensed to the Newark (N.J.) Board of Education and in operation since 1948, was being transferred formally to Newark Public Radio, Inc. The procedure was to be wrapped up by December 1, 1977.

There is a bit of history behind this change. Nationally, 8.8 per cent of CPB-qualified stations are licensed to school boards. This means 16 in all. In trying to stimulate public radio's growth since 1971, CPB has held that stations ought to offer more educational, cultural, and information programming. Its rule of thumb, worked out with licensees: a minimum of 50 per cent of a station's broadcasts must be in those three categories.

Obviously, this does not say there can be no instruction at all. Rather, instructional transmissions cannot be more than half of the total. The whole idea has been to encourage public radio to expand its offerings and to reach beyond just one or two target audiences. Of course, any station could ignore this stipulation. By doing so, it would forfeit CPB's community service grant.

A few in public radio have fiercely opposed CPB's criteria. Said one of the Corporation's most outspoken critics last fall: "They have no right to indicate to any school superintendent or any institutional licensee what the Corporation prefers . . . It's none of their business."

Was CPB, as some claimed, trying to drive the school stations out of business? Diana Calland, Associate Director of CPB's Office of Radio Activities, explained:

We're suggesting that they should probably expand their business by doing public radio for a generalized audience on the main channel and then also provide through alternate delivery mechanisms the in-school programming.

In that pattern, instruction could be packaged in cassettes and sent to teachers for flexible, individualized scheduling. Also, through the FM subchannel, a point-to-point service could be delivered. The combination of cassettes and SCA distribution would mean the greatest possible efficiency and cost-effectiveness, in CPB's radio office's thinking.

Recently, some of the debate on this issue has revolved around WBGO-FM in Newark. Back in 1975, CPB Radio Activities made a planning grant to the Office of Newark Studies, an agency formed to provide staff and research assistance to the City of Newark and administered by Rutgers-The State University. Under this grant, the Office was to study setting up a full-time public radio station. (New Jersey had no full-service public radio outlet, at the time.) WBGO-FM became the object of the Office's research.

This station had good coverage (20,000 watts). Yet it was broadcasting only 35 hours of instruction a week, and nothing more. After some discussion, the Board of Education decided in August 1976 to work with the Office of Newark Studies on forming Newark Public Radio, Inc. A station Board of Trustees would include representatives from higher-education in the city, the Board of Education, business, and the community at large. The new agency would be charged with expanding WBGO's services to 18 hours a day, 365 days a year, with a mix of educational, news, public affairs and cultural programs.

Of particular importance here, the new corporation "committed" itself, in the words of Project Director Robert G. Ottenhoff,[6] to broadcasting "at least 25 hours a week of educational/instructional programming." Hence, there would be "no reduction in the audio instructional services" for Newark schools. Further, the Board of Education and the new corporation had decided to form a joint committee to "review, approve, develop and initiate educational/instructional programming." To formalize the license transfer, papers were filed in Winter 1977 with the Federal Communications Commission.

One other aspect of this episode would seem to have significant implications for a number of licensees. During 1976, the new corporation applied for and received from

[5] Frank Mankiewicz was named President of NPR in August 1977. New management will have to sort out educational issues.

[6] He was recently appointed General Manager of Newark Public Radio by the new Board of Trustees.

CPB a grant of $45,000. These funds, as explained by Ottenhoff, have been earmarked for studying "alternate delivery systems for audio instruction," and amounted to "visible signs of the corporation's commitment to continue instructional programming." Staff will be trying to find ways to:

. . . encourage teacher acceptance and utilization of audio instruction. The study will assess and measure teacher and student attitudes and utilization for four delivery systems: FM main channel, FM subchannel, audiocassettes and school intercom systems.

The results of this analysis, expected to be in hand by December 1977, could say a lot to other public broadcasters who also see themselves as expanding their range of services. The study adds up to a declared commitment to improve [illegible], to increase the usefulness of [illegible] tion for those who will be w[illegible]q w[illegible]—the teachers, administrators, [illegible]y beneficiaries, the students.

For years, advocates of public radio's role in education have known the worth of a slogan used in early 1977 by the Radio Advertising Bureau. "Radio is the solution. Alternative. It works!" the RAB commercial said. Public radio managers, producers and instructional specialists have been saying this right along. If any change has occurred recently, it has been in the direction of making instruction-through-sound work better for wider audiences. By early 1977 the teaching voice of public radio seemed to be stronger in certain respects that it had been in years.

Public Radio in Education: An Overview

by Dr. Elizabeth L. Young

"Public radio in education:" The phrase sounds important even provocative, but what does it mean? *Is* public radio in education? Should it be? If so, in what ways and what goals?

Much discussion about instructional radio follows a time-honored pattern in responding to these questions. The typical article begins with some variant of the assertion that "instructional radio has been around for over 50 years, but it is still largely unknown and under-utilized." The article then proceeds to document current uses of instructional radio, attempts to prove its value, and concludes optimistically that there is a role for this service—and that it should receive increased support.

Such articles have helped to keep us up to date, but they tend to avoid a key question: if instructional radio is a successful teaching tool, why does it remain obscure? Surely, after all this time, the reasons must have to do with something more than lack of support from school administrators. Perhaps a tool that has failed to "catch on" after 50-plus years stands in need of radically new assessment.

Dr. Elizabeth Young

This is not to suggest that public radio has no role to play at various levels of the teaching-learning process. But its role may, and probably should, depart significantly from traditional patterns of instructional radio use. Because of recent developments in educational-instructional technology, alternatives to radio are more numerous and more promising than ever before. These alternatives must be kept firmly in mind as we assess what radio can do, and what it need not do, in the service of education.

Terms and Distinctions

At the outset, we need to define our terms. "Instructional" and "educational" radio have become umbrella descriptors for a variety of types of services. To clarify what we will be considering, let us adopt the following stipulative definitions:

1. "Public radio" will be synonymous with "noncommercial radio" and will encompass all services by stations licensed or performing noncommercially.

2. "Educational radio" has often of late been used to mean public radio. So, to avoid confusion this article will not use the term "educational radio."

3. However, education itself can be defined somewhat more broadly than instruction. Education will be taken to mean that realm of services and activities that improve learning, whether or not such services and programs are tied to a specific course, curriculum, or institution.

4. "Instructional radio" will describe those broadcast services intended to

achieve a specific educational goal, often course-related, sometimes resulting in academic credit and usually prescribed by a school or other formal educational institution. We will recognize as instructional radio everything from elementary-secondary programming to professional post-graduate series. Thus, Wisconsin's School of the Air, Purdue's Open University via WBAA, and WAMC's (Albany Medical College) two-way medical programs will all be seen as facets of instructional radio. A program like NPR's *Options in Education*, while not instructional radio, can be defined as an example of educational programming on public radio.

One further distinction needs to be stressed. "Audio" is the generic term referring to the entire range of programs, materials, and modules that are transmitted by means of sound. Obviously, then, various forms and formats of audio—discs, tapes, cassettes—can be distributed by radio but also can be used apart from the broadcast mode. This distinction is obvious, but it becomes important when we look at existing research regarding instructional radio. For we must begin to ask whether the research has really evaluated radio, or whether it has evaluated the aural medium.

Audio Distribution

In his comprehensive monograph "Instructional Radio: A Position Paper," [1] Richard Forsythe has summarized much of the available research dealing with the effectiveness of instructional radio. This summary is still reliable (as suggested by its inclusion in other, more recent reports) because little new information has been accumulated or analyzed since Forsythe wrote.

Forsythe's general conclusion is that "radio is an effective instructional tool." This conclusion has also been reached by others,[2] although the volume of research and experimentation is far smaller for public radio than for public television. (Research on the effects of instructional radio has been very sparse in recent years, and foreign research cannot safely be assumed to encompass variables or environments common to the American educational experience.)

When one looks more closely, however, it becomes clear that even the limited evidence we have often deals with the efficacy of *audio*—not necessarily radio—as a distribution mode. In fact, some tests actually use audio tapes and discs rather than radio broadcasts.

Suppose that what we think we know, then, is that *audio* "works." What next? Two immediate questions come to mind. First, what do we know about radio as a distribution mechanism versus other mechanisms? Secondly, is radio ever preferable to alternative distribution means?

In his Educational Services Study Project, conducted for National Public Radio, Donald Holloway notes that "there are few comparative studies which deal with cassettes or SCA as alternate distribution systems." [3] Indeed, as we have seen, most of the research supposedly concerned with instructional radio does not distinguish among distribution systems. We do know from this research, however, that discs, reel-to-reel tapes, and cassettes have been successful in achieving educational objectives in certain settings.

To approach our two questions more carefully, let us look at instructional radio in its two traditional roles—transmitting material to elementary-secondary classrooms, and providing college-level courses.

Elementary-Secondary Instruction by Radio

While more and more public stations explore programming for higher education, the number of stations serving elementary-secondary schools has not increased significantly over the past two decades. There is one notable new experiment—the South Carolina educational radio network, which now includes four FM stations—but the number of stations continues to remain around 30. As we examine the service more closely, it appears that there may be further shifts in coming years.

What are some outstanding examples of the success of audio as a learning aid?

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[1] Richard O. Forsythe, "Instructional Radio: A Position Paper," revised version, Stanford, California: thte ERIC Clearinghouse on Media and Technology, December 1970.

[2] See: Monty Stanford, "A Review of Recent Research on Instructional Television and Radio," *State of the Art*, prepared and edited by John P. Witherspoon, (Washington, D.C.: ACNO, 1974), pp. III, 10-22. Also: Donald Holloway, *Educational Services Study Project*, (Washington, D.C.: National Public Radio, November 1976).

[3] Holloway, *op. cit.*, Attachment #1, "Research Literature," pp. 5-6.

One is the audio-tutorial approach (originally developed in conjunction with elementary science sequences),[4] in which the student uses an audio tape or cassette, plus other working materials, to move step by step through lesson or series of lessons. Another has been the use of tapes and cassettes by the Wichita public schools. In Wichita, no public station carries instructional programming. Rather, the schools rely on a well-staffed and well-equipped Instructional Materials Center to provide films, video and audio tapes, much like a library service. In the school year 1975-76, for example, the city's six high schools, 16 junior high schools, and 90 elementary schools all participated in the use of some 1,500 audiocassettes.[5] These cassettes contained materials related to numerous subject areas. The majority of programs regularly involve use of workbooks and other supplementary learning aids so the audio does not stand alone. However, some of the tapes are used without other materials. An annual catalogue is made available to all teachers, and the use of the audiocassettes has been growing steadily. A cable distribution system planned for Wichita will eventually be used by the Center for distribution, supplementing the current mail and truck deliveries.

From the foregoing, it seems safe to say that instructional audio can be distributed with educational effectiveness by a number of means. We have no evidence that would refute this contention. It may be that in some sense a radio broadcast has "presence" that enhances the programming and its effects. Further research might reveal this and would, therefore, be useful. In lieu of such evidence, however, any claims for radio as a superior medium cannot be substantiated.

If we delve further into past evaluations of instructional radio, we find some weaknesses. A major problem inhibiting its wider adaptation (as with instructional television) has been its lack of flexibility. As Forsythe notes, "As a mass medium, radio must contend with the problems inherent in the presentation of single, fixed instructional messages to large and often heterogeneous groups."[6] Or, from a teacher in South Carolina who is enthusiastic about the new experience of instructional radio, "I feel that instructional radio has greatly enriched our curriculum. *I would like to make tapes available to use with small groups.*"[7] (*Emphasis added.*) A number of public radio stations broadcasting instructional programs have tried to overcome the flexibility problem by encouraging off-air taping and even by providing equipment for this purpose. In Chicago, for example, radio receivers with built-in cassette recorders are distributed to the schools by WBEZ. Close to 4,000 such receivers are now in as many classrooms and have replaced the older receivers that did not include recording capability.[8] Despite all attempts to overcome the problems, the basic question still remains. Is radio broadcasting the best means of providing instructional audio services to the K-12 constituency?

It would be naive to assume that the answer will ever be determined solely on the basis of empirical evidence about the relative effectiveness of various delivery systems. In the "real world," political and economic concerns often have more influence in swaying decisions than do test data. A number of public radio stations now in existence derive the majority of their support because of their instructional broadcasts. Many are licensed to schools and boards of education. It is unlikely that these stations would or should be radically converted overnight, and it would be unwise not to consider carefully their potential in determining future possibilities for the distribution of instructional audio services. We will have more to say about their role.

Setting aside the political and economic factors, the answer to the question about radio as the "best method" is probably a qualified "yes." The reason is that while many programs presently provided by main

[4] For a description of this approach, see: S. N. Postlethwait, J. Novak and H. T. Murray, Jr., *The Audio-Tutorial Approach to Learning through Independent Study and Integrated Experiences*, (Minneapolis: Burgess Publishing, 1972).

[5] Conversation with Dr. Ben Wolfe, Director, Instructional Materials Center, Wichita Public Schools, Wichita, Kansas, January 26, 1977.

[6] Forsythe, *op. cit.*, p. 11.

[7] Comment quoted in *The Listen-to-Learn Service*, a brochure published by the Office of Instructional Television and Radio, South Carolina State Department of Education, Columbia, South Carolina, 1976.

[8] Conversation with Carole Nolan, Station Manager, WBEZ(FM), Chicago, Illinois, January 26, 1977.

channel radio might be better distributed by other means, certain types of instructional programs could not survive without a station. This is most true of timely broadcasts, e.g., news reports specifically tailored for students and of broadcasts involving two-way response. For example, public radio station WFBE in Flint, Michigan has since 1953 offered short, live newscasts produced for fifth- and sixth-grade students.[9] While the format of these weekly 15-minute reports has varied, the content demands live dissemination to students while in their classrooms. Follow-up discussions often enhance understanding of the content.

The dual-audio experiment conducted in conjunction with WUHY, Philadelphia, also necessitated "real-time" broadcasts of the audio portion, since the audio had to be available during the pauses and silences in television programs that children were watching simultaneously. (In this experiment, however, children listened and watched while at home, not while in school. The audio portions were "fed" on radio during breaks in the TV dialogue. The audio was designed to aid children in vocabulary comprehension.)

To cite another example, WNYE has conducted "conference calls" between a master teacher and as many as ten home-bound students following the broadcast of an instructional radio program. Of course, it would be possible for these students to listen to the programs on tape at their convenience and then participate in the conference call scheduled at a fixed time each day. And it is possible that these services could be distributed on cable radio (very little used at present) or via some form of immediate, simultaneous distribution.

Aside, from timely programs, two-way programs, and certain special services, there would seem to be little rationale for providing by main-channel radio many of the elementary-secondary programs now offered. The options are: cable radio, SCA, reel-to-reel tapes, cassettes, and discs. Broadcast radio is expensive. As we have seen, it also may be inflexible. Considering the modest costs of audio tape technology and the concomitant flexibility, we must seriously consider whether it is in anyone's best interests—students, educators, or those of us who run public radio stations—to continue using main-channel radio to disseminate programming intended for use in school classrooms.

Post-Secondary Instruction by Radio

As soon as we talk about audio programming intended to reach *beyond* the classroom, the use of radio as a distribution mechanism becomes more attractive. This is undoubtedly one of the reasons t colleges and universities are beginning to form more partnerships with public radio stations to broadcast credit and non-credit courses at the college level. As the program director of one public radio station explained,

We were into college credit courses quite heavily but got out five years ago when interest seemed to dwindle. Now, our institution is pushing the idea of reaching the non-traditional student, and the concept of life-long learning is surfacing, so our station is back in the credit-course business again.

This trend is emerging across the country. Many states face close to zero population growth and eventual declines in full-time undergraduate enrollments. At the same time, the scope and nature of post-secondary education are changing:

Since 1969 more students have participated in post-secondary education on a part-time basis (credit and non-credit) than on a full-time basis by a substantial margin. . . . Between 1969 and 1972 the number of part-time students in post-secondary institutions increased at a rate of 2.3 times faster than full-time students. . . . In 1972, for the first time in American history, approximately half of the students (degree credit, non-degree credit and non-credit) in collegiate institutions of higher education participated on a part-time basis. . . . Enrollments of collegiate part-time students are increasing more rapidly in two-year institutions and in graduate programs than in other segments of the field.[10]

Another factor in the changing educational pattern is that of adults who want to continue their education. About half of these adults would like additional occupational training—but they prefer to get such training through employer-sponsored courses,

[9] Conversation with John Szucs, Public Affairs Director, WFBE(FM), Flint, Michigan, January 26, 1977.

[10] National University Extension Association, *Special Report*, I, 2 (March 1974), p. 2.

community programs, or other "nontraditional" means, rather than by participating in traditional campus study.[11]

How, then, to reach these potential learners, especially those who do not wish to come to campus? Use media. Fortunately, radio is being included in this planning, and it can be quite effective on its own or in conjunction with television and other media. Don Holloway in his recent study for NPR suggests that NPR explore future relationships with *Courses by Newspaper* at the University of California-San Diego, and with the University of Mid-America.[12]

The author of this article has had experience with the successful production and distribution of college courses via radio at The American University, Washington, D.C. In the process of working on both music and theatre history courses, it became evident that WAMU could produce programs that not only met specific academic objectives, but also succeeded as entertaining general audience programs. In the 1975-76 academic year, 298 students enrolled in eight college-credit courses offered by WAMU. The courses included material about the ecology and women's studies.[13] Another example—listening to radio components of Great Britain's Open University—also bears out this thesis. If a half-hour program about the history of Britain's labor unions can be fascinating (and, complete with sound effects and music, it was), then any instructional program can have wide appeal.

If the case can be made for other-than-radio distribution of audio instruction at the grade-school level, then why do we need radio to reach adult learners? There are several differences between the two situations. First, audio for the classroom is for a discrete audience, virtually all of whom are in contained spaces (classrooms) at fixed times. Thus, equipment can easily be purchased and assigned to distribute audio tapes or discs in these places. SCA receivers, too, can be distributed to a finite number of classrooms but less easily to a changing, heterogeneous audience "at home." (SCA receivers currently retail between $70 and $150, depending on sophistication; an acceptable receiver for a school room could be acquired for $70 for example.) Also, as we have noted, the adult course material is more likely to have broad audience appeal, so that the programmer can plan on reaching beyond the target student audience. With The American University courses, some students registered for credit, some for non-credit (they then paid only for auxiliary materials); other listeners simply tuned in to enjoy the programs. It is true, of course, that college-level materials can also be disseminated by cassette and other nonbroadcast methods. However, a wider audience can be reached as conveniently (and inexpensively) with radio in this case as by alternative distribution means.

In the public radio system, approximately three-fourths of all stations are licensed to colleges and universities. Thus, the stations have (at least potentially) a talent pool and built-in impetus to become involved in broadcasting post-secondary instructional materials. Such outstanding successes as the Albany Medical College's two-way medical programming from WAMC (and its related network of stations) and the Purdue/WBAA experience in attracting students to higher education via radio certainly illustrate that this type of instructional service can be vital and enduring.

Other Roles for Public Radio in Educatiton

In addition to the traditional roles of instructional radio just outlined, at least two other major services can be provided to education by public radio.

One of these—which has not been much in evidence—involves the use of stations to inform educational professionals and the lay public about educational matters. The best examples are found at stations like WDTR, Detroit, which broadcasts citywide teachers' meetings, or WCBE, Columbus, which carries the Columbus Board of Education meetings live. Some stations provide regular opportunities for school administrators to talk to school personnel by radio. These services, although often provided by stations that also program in-school series, could be offered by any public radio station, regardless of its commitment to broad-

[11] Results of a study conducted by the Commission on Nontraditional Study, reported in: *The NAEB Memo on Instruction*, IV, 2 (February 1973), p. 1.

[12] Holloway, *op. cit.*, "Summary Findings," p. 21.

[13] Conversation with William Brown, Program Director, WAMU(FM), Washington, D.C., January 31, 1977.

casting curricular materials.

Broadcasts to parents about the schools' daily lunch menu, about upcoming PTA meetings, and other local information, also fall into this category. Such programs have sometimes been bilingual. At WHRS, in Boynton Beach, Florida for example, messages to parents were broadcast in both English and Spanish during the time the station was delivering programming made possible by a special federal grant.

On the national level, information about educational matters has been provided effectively by NPR's *Options in Education*, now a weekly program. The series focuses on problems, developments, successes and research in education. British and European observers of American broadcasting and especially of our public broadcasting system have found it odd that we do so little reporting about the educational scene in our country. *Options in Education* is a start. Judging from requests for tapes and transcripts following certain of its broadcast features, it is reaching a serious and interested audience.[14]

Such examples of reporting about education are not abundant, but they demonstrate that such reporting can be an important service.

The second major service public radio has provided for education has been its use as a training ground. Many if not most of the noncommercial radio stations not qualified for CPB support are run by students. While the majority of these stations are not linked with a academic department or program, a few are. Perhaps the most educationally sound development in this area has been the nucleus of stations, usually low-power, licensed to and operated by high schools where a faculty member supervises the training and activities of students who actually run the station. In a number of instances, students acquire third-class broadcast licenses, considerable experience and even course credit.

Of course, it is not desirable to establish such stations if their sole mission is to train students for jobs that may not exist in an industry that is already overcrowded. However, in situations such as the one about to be described, students and the public can benefit from the high school stations. The students gain technical, managerial and aesthetic knowledge that will be useful in many later endeavors. The public receives a broadcast service that is quite local in nature. Just as the student newspaper, the debate team and the football team do not merely train potential professionals but strengthen broader educational and social skills, the high school broadcast station can take its place as a worthwhile aspect of the community and the school.

One such station is WSHR-FM, licensed to Sachem High School in Holbrook, Long Island, New York. The station has 2,000 watts effective radiated power, reaches a population of well over one million people, and has been on the air for ten years. The station is soon planning to experiment with quadraphonic broadcasting.[15] The author of this overview conducted a study of the station's operations and programming after its first three years and found that the students were obtaining a valuable learning experience, while the community did look to WSHR for local programming, especially for school news. Students hold all positions at the station and are guided by a faculty adviser. Those interested in political science are encouraged to work in the news and public-affairs areas and actually go out into Holbrook and environs to cover stories. Other students concentrate on management and engineering. Those in the latter group are helped to apply for and earn their third-class licenses. Running the station is considered both academic work (there are tests and course credit) and service to the community.

A number of the CPB-qualified stations also train students. In a few cases, those students are of high school age (although the majority of student participation is at the college-licensed stations). Thus, the public radio system has demonstrated that a number of educational and service goals can be met successfully within the confines of a single operation in which students and professionals combine talents.

If one wishes to stretch the definition of education, it is possible to classify such programs as SCA reading services for the print-handicapped as educational. There is no question that such programs are valued and valuable. However, for the purposes of this article, such programming will not be con-

[14] Holloway, *op. cit.*, "Introduction," p. 8.

[15] Stuart Harris, "High School Station to Go Quad for Tenth Anniversary," *Broadcast Management/Engineering*, XII, 12 (October 1976), pp. 52, 54.

sidered as directly instructional or educational and thus will be beyond our purview.

The Policy Questions

If local and national decisions about public radio's future in education are to be made intelligently, they must be based on the best possible data and on an honest appraisal of all variables. Probably "the best" evidence is never available in one place at one time. Nevertheless, let us try to see where we are at this point—what we have reason to believe and what our questions must be.

We know that available evidence supports the thesis that instructional audio achieves results in certain learning situations. We have also seen that there is inadequate proof to determine whether one audio delivery system is better than another in terms of educational efficacy. A number of delivery systems are currently in use, although there are no comprehensive statistics regarding, for example, how many schools use audio discs and cassettes. Over the past several decades, it has been observed that instructional radio services for elementary and secondary schools have not increased substantially. On the other hand, radio distribution of programs for higher education is growing.

We have noted that for certain kinds of educational services, radio distribution seems indispensable. The following program types will probably always require "live" or simultaneous distribution: news for in-school students; coverage of educational events such as teachers' meetings; news for the general public about educational issues and events. It has also been suggested that radio is the preferable (but *not* only) means of disseminating post-secondary audio instruction. Of the types of instructional and educational services described thus far, it would be possible to deliver all but the dual-audio, the adult educational materials, and the general-audience programs via SCA.[16] According to CPB research, there are currently SCA services for the print-handicapped on 42 stations.[17] With approximately 180 of the CPB-qualified FM stations having the potential for SCA (and there are some 600 additional FM stations not currently qualified), SCA must be considered a real alternative to main-channel broadcasting for any number of specialized programs. Stations such as WAMC, Albany; WKAR, East Lansing; and WUOT, Knoxville, have experimented successfully with the delivery of post-secondary instructional materials on SCA, so the necessary models exist.

The use of public radio stations to train future broadcasters can be challenged on two fronts. First, the station is, of course, licensed not to train students but to provide programming. Secondly, student training can be accomplished with closed-circuit facilities and carrier-current stations. However, a case can be made that a few of the training stations now operating do meet both criteria of service and training. There may be no substitute in a student's experience for gathering "real" news and producing "real" programs that go on the air even if the student's ultimate career goal is not broadcasting.

What are the implications of all that has been said for the national organizations charged with furthering the growth of public radio, specifically CPB and NPR? A bold suggestion will be offered here: there is little need for greatly increased central coordination or production to interface with public radio stations serving education. As Holloway has correctly observed, "[a] basic concept is localism of education."[18] Based on the knowledge we have about educational policies and practices in this country, it is extremely difficult to argue that educational programming policy should be set at the national level. Where a kind of national cooperation has worked well (e.g., with the AIT consortia programs for television), one can maintain that this has occurred because the nearly prohibitive costs of first-rate ITV production mandated such cooperation. And, interestingly, this kind of leadership in ITV programming has come not because of CPB or PBS but through independent organizations, albeit with the assistance of federal funds in some cases.

[16] SCA would not be optimal for the dual-audio projects because too many widely scattered youngsters must be served. However, it is worth noting that the dual-audio experiment in Philadelphia ended because the public radio station involved apparently felt it could reach a wider—more affluent?—audience with less specialized adult programming in place of the dual-audio. This kind of conflict raises a philosophical question about public radio's "proper" role. In technical terms, however, main channel distribution of dual-audio works.

[17] Conversation with Cheryl Strange, Radio Activities Office, Corporation for Public Broadcasting, Washington, D.C., January 19, 1977.

[18] Holloway, *op. cit.*, "Introduction," p. 14.

If the distribution of certain kinds of instructional audio moves away from public radio stations, it will be difficult to justify CPB's role in direct funding of instructional audio production. CPB's mission is to develop public radio and television stations. A coordinated effort is underway within the Office of Education, HEW, to find funds for support of new and improved instructional audio services, especially in their production for K-12 use. Indeed, many public radio stations have previously received assistance from various titles of education acts. The important thing is to see that a distinction must be made between content (educational materials) and distribution mechanisms. CPB's objective is primarily to support one type of distribution mechanism: public broadcasting stations. Naturally, this objective includes concern for and funding for programming, but CPB's programming support activities should be devoted to programs designed primarily to meet the needs of the general public outside the formal classroom.

It is always theoretically possible that a convincing case will, after all, be made for public radio as the primary distribution mode for elementary-secondary programs. The South Carolina system bears watching as the only recent attempt to revitalize the use of radio for instruction. If there is a national revitalization, CPB will certainly want to look at increased, special grants and assistance for stations providing this service. The Corporation may even want to encourage more stations in this direction. Nevertheless, most evidence seems to indicate a move away from the use of public radio stations' main channels for instructional audio.

Even where educational services can and should be supplied by public radio stations, CPB's role should be confined to the following areas. First, there could be special grants over a fixed period of time (three to five years) for stations that wish to experiment with, for example, increased local reporting on education and coverage of educational events. Secondly, CPB could be very helpful (directly or by contracting with other agencies) in acting as a clearinghouse for an exchange of information among stations, and even by publishing handbooks that would include models for types of instructional/educational services. Thirdly, if it proves true that post-secondary programs are being effectively distributed by an increasing number of public radio stations, CPB may want to actively encourage such programming by production grants, regional conferences, and like activities. If the Corporation concludes that some stations providing dual student training and public programming are fulfilling educational and community-service needs, there might be a special series of modest operating grants for such stations, over and beyond the Community Service Grants to CPB-qualified stations. Aside from these somewhat indirect support programs, it is difficult to see what CPB could do, given its congressional mandate and its own recently adopted "mission and goals" statement.[19]

What of NPR? It, too, has a mission that is primarily national in scope and directed toward public radio programming. The organization was established to provide the kind of national public affairs and cultural programs that local stations could not produce or obtain on their own. NPR has continually reviewed its role in instructional/educational services, but few detailed goals have been established. Even the Holloway report speaks more about the need for additional planning and exploration than it does about specific programs and activities. Largely as a result of the Holloway recommendations, NPR is in the process of adding staff in the programming department to explore further what can be done with instructional services. The tasks of this new office are being defined, and one gathers the impression that an immediate objective is to facilitate communication and exchange among stations that are engaged in instructional programming.[20] NPR is also considering a relationship with the University of Mid-America, which is housed in Lincoln, Nebraska, whereby NPR would assist in production and distribution of audio courseware.

While there is room for exploration of several options, NPR and public broadcasters should not use the excuse that we know nothing about instructional services or public radio in education to postpone making some hard decisions now.

[19] For Mission and Goals statement, see: *CPB Report*, VII, 33 (November 22, 1976), p. 3.

[20] Conversation with Joe Gwathmey, Assistant to the Vice President for Programming, National Public Radio, Washington, D.C., January 27, 1977.

NPR has proved it can produce a first-rate, timely national program about educational issues with *Options in Education*. NPR has acted and can act as an exchange mechanism for stations wishing to share instructional programs. Whether NPR should continue in this program exchange coordinator role can be determined purely on demand and economics, not on any philosophical principles about the "worth" of the materials. If the participating stations can exchange their instructional programs more efficiently by using another agency, they should seek to do so. NPR may, however, be the best agent for a variety of less-than-national programming, including specialized materials for minorities, the handicapped, and other subgroups with specific needs. This type of activity can be an adjunct to the primary program production tasks, but for NPR to establish a new department to produce instructional programs for elementary-secondary use does not seem at all warranted. Production of post-secondary materials can probably best be done by local stations in cooperation with their colleges and universities, although a few of these series might be produced jointly by NPR and stations if a combining of national and local resources seems useful.

In one other area NPR could increase its service to education. The network could work actively to ensure that secondary instructional uses of its programming would be possible. NPR has had a contract with a west coast firm that "spins off" certain programs into cassette form and markets them to educators and schools. The company has been less than aggressive in this venture, so a new arrangement may be desirable, perhaps with an organization like the National Center for Audio Tapes at Boulder or with Great Plains National Instructional Television Library. The latter now has the audio audio (as well as video) distribution rights for eight *Open University* series from Great Britain. This is an area that requires further research by NPR. If it is found to have potential, NPR should be encouraged to do all its program planning and production with such secondary uses in mind. Early in the development of a series, for example, thought could be given to print materials that would eventually accompany program segments or modules to be used for educational purposes. Like CPB, NPR may want to encourage and facilitate dialogue among stations active in educational programming projects. In terms of acquisition and primary production of instructional radio programs, however, NPR would be well advised to stand aside in favor of local, state and regional efforts.

CPB, NPR and other national organizations can provide funds and coordination for the educational radio services perceived as optimal and growing. Care must be taken, however, to evaluate which services deserve this support. To continue a service simply because it is there, perhaps at the expense of what could be there, is poor management.

Conclusions

Public radio is a versatile medium, and it is growing. Its initiatives in education should be most closely tied with local and state entities and policies. But where stations can benefit from national assistance, they should not be shy about making their needs known. There is a real question about what agency or agencies at the national level should be concerned with the funding of instructional audio materials, especially if one agrees that radio should not be the main distribution means for these materials. There are additional questions about the funding of models for new educational services. But these questions must be tackled.

At the outset of this article, we asked whether public radio should be in education. The answer is that it should be if we are willing to accept the fact that its historical role will need to be reviewed and that its future role may change. Great care must be taken to evaluate not only the circumstances under which audio is a desirable learning mode but when and where broadcast radio is the most efficient medium. Public radio can do more to explain and interpret education to its audience. It can report on education just as it reports on national political and social issues. Most important for the future, it can serve the growing needs of adult, nontraditional learners. Public radio is just entering its adolescence after a long childhood when it was undernourished and virtually ignored by many. What it needs now is explorers who are willing to seek and fight for its future. Part of that future undoubtedly belongs in the realm of education, from which, after all, public radio evolved and to which it still has much to contribute.

Summary:
To Harness the Potential

Without question, the installation of the television system at Lincoln Heights (Elementary School) and the frequent and discriminating use by the teachers has resulted in some positive happenings. . . . The records show that reading scores rose dramatically in at least two grades in a year's time.
—Marjorie McKinney, ITV Director, WCET-TV, Cincinnati and Wanda McCollum, Assistant Principal, Lincoln Heights; "A Project that Paid Off," January 1977.

As instructional radio grows in South Carolina, we find ourselves continually refueled with enthusiasm based on the responses of students and teachers.
—Pat A. Conner, Instructional Radio Specialist, Office of ITV & Radio, South Carolina Department of Education, November 1976.

Television as a medium for post graduate and continuing professional education is gaining substantial acceptance, with 40-55 per cent of students saying they prefer it to classroom courses.
—Dr. Stuart Cooney, Director, California Instructional Television Consortium, June 1976.

No one ever questions a teacher's using a film strip, even if it's 50 years old. But somehow you have to justify the use of TV.
—Marsha Rosen, member of Friends of Channel 13 Education Committee Speakers Bureau, New York, October 1976.

Television, the most powerful medium ever, is here to stay. We do not fully understand its impact and the degree to which it has changed our lives but there can be no doubt that it has enormous power. We need to be aware of its hazards, harness its potential and recognize its possibilities.
—Eda LeShan, author and family counselor; in WNET's "Television For Learning" supplement to *The New York Times*, September 19, 1976.

On the Tuesday after Labor Day 1976, Hardy Sydner put in six hours on the road. As Technical Utilization Coordinator for Central Virginia Educational Television in Richmond, he had two appointments out east in Middlesex County, bordering on Chesapeake Bay.

It was a typical day. For an hour, Sydner showed the principal and teachers of Middlesex Junior High how to use a videocassette recorder. Later, at the Wilton School, he checked out a noisy ITV system, found the wrong connections, and made the changes called for.

It was one day's work in a month when Sydner would rack up 3,000 miles (he has covered more than 112,000 miles on his job over the past three years). The assignments were quite characteristic for him as WCVE's engineering man in the field. On a given day, he might work on master antennae, or recorders, or cameras. At other times, he'll talk to school people who are leery about technology. In a year, he may advise as many as 300 different individuals in 53 school divisions and other schools served by WCVE.

For Hardy Sydner, it's a long day's journey. Yet, his is the kind of personal contact that the realistic educational broadcaster knows is vital if the instructional service is to be used effectively. Sydner's work exemplifies the up-to-date approaches to TV/radio education that you might have heard about in 1976. It was one of the hints of

better things to come in a field that has needed all the help it could get for so many years.

The Debate Goes On

While the Hardy Sydners plied their trade in 1976, the marathon debate about it continued. Was education-through-broadcasting alive, dead, or just comatose? Individuals disagreed, as they have for years.

The views of the debaters are useful here. They help define dilemmas still to be resolved, and they play up strong points. A few of these comments are worth reporting for their contribution to a better understanding of the state of the art in 1976.

On the instructional radio side, the sounds of contention have been more muted. There has been some tilting over the stipulation that CPB-qualified stations must be full-service in output, i.e., at least half of the broadcast hours must be in the areas of education, culture, and information. There has been discussion too about how active National Public Radio (NPR) should become in developing educational services for its member stations.

As for the health of educational radio, the eye-opening growth of Minnesota Public Radio triggers this question: Can a stronger educational radio service be far behind? There's support for this inference in a comment from Pat Conner, South Carolina Department of Education's Instructional Radio Specialist:

The latest state accounting equipment survey revealed over a 300 per cent increase in radio receivers! This in a state that hadn't heard of radio a year ago! It is a real tribute to the medium and what it can do for learners and educators! And at long last, we are into local production efforts.

Real numbers went from 92 receivers to over 600.

In a word, the fortunes of instructional radio do show signs of improvement. Debate over it, while existent, has been a bit more private than the jousting over ITV.

In the land of education-through-TV, there were more than a few points of view to digest in the past several years. Oftentimes, even the most optimistic attached caveats—and some were far from optimistic.

Members of the PTA share in listening to National Public Radio's program, Options in Education, *a series that deals with educational issues at all levels.*

The man who put the first ETV station on the air 24 years ago—Dr. John C. Schwarzwalder—has a dim view of the outlook for educational broadcasting. Speaking out in 1976, he appraised the changes resulting from the presence of CPB and PBS on the national scene. In his judgment, "Only lip service and tokenism (and very little of that) will be available for education, either formal or informal." Then, in his windup, he intensified the assault:

Mr. Truman, (F.C.C.) Chairman (Paul) Walker and Commissioner (Frieda) Hennock are not around to see what has happened to what Miss Hennock once called "the finest young school teacher ever to come to the aid of American education." This may be just as well because CPB and PBS have taken that young school teacher and turned her into a call girl for the country club set.

No less sharp in his criticisms over the years has been Dr. Frederick C. Breitenfeld, Jr., Executive Director of the Maryland Center for Public Broadcasting. To him, the health of ITV "remains the same" in 1976-77 as it was in 1974. Elaborating, he wrote:

The obvious conclusion is that under certain circumstances, in certain locations, because of certain activities and people, ITV is terrific. In too many cases, because of political circumstances, the people involved, etc. . . . it is, wishy-washy, ill-conceived, poorly executed and unused waste of people and machinery. What's missing, and has always been missing, is the real commitment to educational services on the part of the big decision-makers—mayors, governors, archbishops, etc.

Following this line of argument, the key to greater ITV is commitment. (Later in this chapter, we'll examine some signs that this commitment may be somewhat greater than it was, say, ten years ago.)

George Hall, former director of the Virginia Public Telecommunications Council has applied this need for commitment in shaping his own argument on strengthening ITV. He laid out his view in the keynote speech to the 1976 NAEB Conference on Instruction. For ITV to be directly helpful, he said:

We must realize our own mission objectives: that we insist on the primacy of learning; that we undertake significant curricular tasks only if they emphasize measured learning and relate effort to outcome. This means that we should become far more selective and demanding about the tasks we undertake.

If advocates cannot put together "the conditions needed for a radically more efficient cooperative educational paradigm," then, said George Hall, "our advice to the political community and our admonition to the educational community will be: turn off the technology—or at least turn it down to the 'visual aid' status which is a sort of residual fate." (Those who know Hall might concur that before this happened, he would certainly be on the main line of resistance.)

The sentiment expressed by George Hall belongs to a family of argument that says: "ITV is O.K. But it's going to have to do this or that if it is to survive and be meaningful." AIT's Director of Research Saul Rockman has written in this vein, too. School television "is alive and well," he has said, and it has "a fine future as part of education." But:

1. Public TV's school services must adapt to "changing patterns of in-school television use," that is, recognize the cry for "nonbroadcast program use" and line up rights, accordingly.

2. The stations must also begin adding services, such as "better local program production to serve local needs more effectively."

3. Other services ought to be expanded, such as preparing teacher and student materials to go with instructional broadcasts, and utilization efforts by state, local, and station personnel.

Some general assessments of ITV are quite pessimistic, compared with Rockman's qualified stand. Included among the pessimists is Dave Berkman, ESAA-TV Program Officer in the U.S. Office of Education. Berkman's outlook was epitomized by his lead sentence in a May 1976 *Educational Technology* article:

It's not that instructional television—indeed, I would submit all of instructional technology!—is dead, for one cannot attribute death to that which has never shown life.

What has been at the core of the problem? To Berkman, it is simply that "as education

becomes more and more teacher-dominated, the chances for ITV become slimmer and slimmer." Before anyone can deal with the problems of injecting media into education, he wrote, it would be essential "to come to grips with the vested ego-interests in traditional methods of teaching . . . ." Berkman is not sanguine about that possibility. If TV ever does offer effective instruction, he wrote,

it will not come about as a function of programming designed for use in schools where they never will be used—but through programming like Sesame Street *which is broadcast in after-school and weekend kid-time hours.*

A shadow of pessimism hung over the response of another observer, an experienced professional in one of the regions. He spoke of "a big subliminal fear within the industry" that ITV "will never become important enough to have either significant support or serious opposition." Still, there was a glimmer of hope: while it has been plagued with a "bad case of bronchial pneumonia," ITV "will never die." On balance, it seemed "somewhat stronger" than it was 20 years ago, "with a great deal of improvement yet to come."

By the nature of their duties, regional network practitioners can look panoramically at ITV. In late 1976, Robert C. Glazier, President of SECA, wrote with zest about the subject. "I see a great future for ITV nation-wide," he said. "In fact, the broadening of ITV to include many efforts at family and adult education will give it new vitality." Meanwhile, the ITV Coordinator for the Central Educational Network, Ted Lucas, observed:

The current state of ITV in the Midwest is very good and growing. With the exception of three states, all ITV services have expanded and are beginning to look beyond K-12 services.

From the evidence, this matter of "looking beyond K-12" merits close study by anyone dedicated to the broadcast of education in the immediate years to come. Another sighting of this option has come from Robert H. Ellis, General Manager of KAET-TV, Tempe, Arizona. Ellis wrote with the perspective of someone who had found it "extremely difficult" over the years to get Arizona State University faculty to buy the use of TV for instruction.

To Ellis, "a different type of instructional service" is on the horizon. Unlike the 1960's-brand telecourse, it consists of "quality programming that can be used for college credit . . . programs that don't threaten faculty and yet are valuable instructional tools . . . such as *Ascent of Man*." As more of these series become available, as they improve, "so must local productions, because the public will make comparisons between these programs . . . ."

These various comments on instructional broadcasting represent a vestpocket sample at best. They hardly settle the ongoing skirmishing over whether ITV is alive, dead, or just entranced. Yet, the sense of what participants seemed to be saying in 1976 was that things are better. True, there is no room at all for complacency, and no case for freezing commitments. On the other side of the coin, there was hardly any justification for turning off the switch.

The State of the Art: A Personal View

After travelling about in 1976-1977 listening to a number of men and women engaged in instructional broadcasting, and scanning the stacks of documents they have ground out, this reporter arrived at certain distilled observations. They do not say that we stand at the threshold of Utopia. But they reflect a firm conviction that the recent work in this field has not all been an insubstantial pageant.

Since 1970—even since 1974—new strengths in instructional broadcasting have come to light. They imply quite clearly that education-through-broadcasting is no longer the creaky, gray-streaked affair it once was. Great tasks lie ahead, to be sure. With a new conviction, they can be undertaken on the basis of these positive changes in recent time.

Larger Budgets

New levels of dollar investment have been made or planned.

Once, ITV was almost literally a nickel-and-dime proposition. It showed. Today, in many places, that it is no longer the case—and, again, it shows in the product.

Take one example. AIT's nine consortium-backed projects add up to a total of $8,716,000. In the first (*Ripples*), members paid $190,000 toward a gross of $256,000; some

$3,000 went for evaluation. For AIT's latest venture (Essential Learning Skills), the price tag is $4,246,950. Of that, $575,000 will go into design alone; evaluation will cost $666,700.

More and more, federal and quasi-federal agencies have contributed sizable amounts to instructional series. As of June 2, 1976, three offices of HEW had invested $4,741,940 in the University of Mid-America, or 67.2 per cent of the total spent on it, going back to its roots in 1971. The National Institute of Education has put $245,000 into National Public Radio's *Options in Education* series. NIE has also committed $3.6 million to a West Coast consortium's "Television Career Awareness Project." Meanwhile, the Special Projects Branch, Equal Educational Opportunity Programs, in the Office of Education, has awarded grants amounting to $35,049,680 for 22 program series, virtually all of which have aired—or will air—on public TV.

There are risks in these infusions of of federal-agency dollars into instructional or educational projects. One has to do with possible duplication. Several steps have been taken to get all these funders talking to each other. Art Sheekey of USOE brought together major participants in the fall of 1976. In Spring 1977, CPB chaired a similar session for representatives of USOE, PBS and NPR. Conceivably, these devices could help forestall an interagency traffic jam in which educational broadcasting would come out the loser.

Strong National Commitments

National agencies have made important new commitments to support education through public broadcasting.

For its part, CPB formally defined a commitment to education in an April 13, 1976, "Goals and Objectives Statement." Nine months later, the Corporation's Board voted $218,424 for "an experimental and pilot production phase" of AIT's Essential Learning Skills project. The significance? This was CPB's "initial participation in the funding of programming developed primarily for in-school use."

At PBS, meanwhile, there has taken shape what one official called "a commitment to move more aggressively into the education field . . ." A "major breakthrough" occurred in 1974: the series *America* was "reorchestrated" into half-hour segments so that it could be used in schools. That same year, the PBS interconnection carried just three series from 10 a.m. to 2 p.m. for possible use in schools. In contrast, the PBS schedule for 1976-77 called for morning-hour transmissions of 24 series for the benefit of schools and colleges.

NPR has also taken steps toward deeper involvement in education. It has planned to fund a "staff component" to concentrate on educational/instructional services. The agency had in mind developing instructional facets for general audience programs. At the same time, it looked forward to working on cooperative educational projects, such as UMA's history course with Henry Steele Commager.

At the National Association of Educational Broadcasters, an existing commitment to support the improvement of instructional services has, if anything, been strengthened. Through 1976, the NAEB had sponsored 25 intensive instructional design seminars over half a dozen years; these reached more than 300 individuals. In Fall 1976, the NAEB was scouting for an advanced design course to offer, to keep pace with the spread of awareness among players in the "Plan Efficiently" game.

Greater commitments have been made in higher education, as well. The University of Nebraska's formation of SUN and then UMA has given a new impetus to open learning through the vehicle of multi-media courseware. In parallel, the involvement of institutions such as Coast Community College District, the University of California at San Diego, and Miami-Dade Community College has made its mark in the very new annals of nontraditional study by adults through media.

New Leaders

New leadership has come forward to spearhead the processes of educational broadcasting.

In some instances, individuals have moved into a prominence scarcely typical in past years. In other cases, new kinds of teams have evolved. AIT's management group represents a blending of educators, producers, researchers, and utilization experts. The ranks at CTW offer wholly similar strength; several of its functionaries have earned a place at the forefront of their re-

spective crafts—not simply in educational television—but in the entire field of broadcasting.

Some of the new leaders have brought a special kind of drive to the tasks confronting them. It took that drive to create *Man and Environment* at Miami-Dade, to work out course materials for *The Ascent of Man* in 1975, and to thrust Coast Community's KOCE-TV so squarely into the still-quirky business of televising college-credit courses.

Shoring up the new leaders, a number of dedicated individuals put in long hours at their specialized tasks. Often they have stretched too thin: the Eastern Educational Television Network's 1976 survey showed that ITV staffs at 24 stations averaged three people. That's scarcely enough to make the instructional broadcasting banner very visible throughout a licensee's signal range. But support for the efforts of these staffs is on the way.

Added Awareness Efforts

New activities have been started to make communities more aware of instructional broadcasting services.

As earlier pages have noted, awareness campaigns have existed on a more-than-local basis only since 1975. EEN has initiated two "TV For Learning Weeks." A third is in the works for September 1977. Capitalizing on these efforts, CPB has funded a national awareness push, implemented by PBS. As part of this effort, PBS ran a series of regional workshops in Spring 1977. Public information and ITV staffs of stations came together, in the words of PBS's Coordinator of Educational Services Rhea Sikes, "to begin to build a foundation out of which a national awareness campaign can be created."

There have been the makings of a real trend in this activity. With Exxon underwriting, WNET prepared a "Television For Learning" supplement to *The New York Times* in September 1976. At about the same time, Virginia's Governor proclaimed "ITV Week." In the midwest, CEN's awareness committee is already planning a "TV For Learning Week" for the regional network. Wisconsin's Educational Communications Board was on a similar trail, with an eye toward making both legislators and parents more aware of the impact and value of ITV.

One route toward greater awareness lies in the area of teacher training. To accomplish this—to assist "teachers and administrators to make more practical use of television in the classroom"—New York State Education Department's Bureau of Educational Communications has produced a "Visual Learning" package starring *Today's* Gene Shalit. Taken broadly, these materials seem to be saying that the ITV advocates can no longer afford to use demure Coolidge-era ways of "selling" their approach. There is too much at stake—and the competition from book-and-map-and-film peddlers is too tough.

More Variety In Delivery

New acceptance of alternative ways of delivering the educational message.

No longer are practitioners single-mindedly locked into open-circuit broadcasting as the conveyor of instruction. In radio, there is a mix of open circuit, SCA and audiocassettes. And similarly in TV, the design-oriented manager picks the best medium for the job—or a combination of them.

SECA's Bob Glazier pinpointed the new outlook as of Fall 1976. He wrote that "videocassette equipment has breathed new life into ITV across the country, and it will continue to provide assistance in final distribution to students." The manager of a southern station had also found that these recorders were spreading throughout the schools, "thus enabling teachers to break out of the lock-step broadcast schedule and use programs in a more timely fashion."

There are other alternatives in place, too. In 1976, Chicagoans could watch closed-circuit courses distributed by the Catholic Television Network of Chicago's ITFS system. In the south, SECA was using a CPB grant of $60,000 to relate a satellite to other means of delivering instruction. And at various points on the cable-television map, systems were providing time on local origination channels to various educational institutions. The Berks-Suburban TV Cable Company, in Reading, Pennsylvania, was experimenting with an interactive linkage dedicated chiefly to helping senior citizens learn and communicate.

In time, the video disc will come along to shake up the suppliers of education even more. It is already clear, however, that in 1976-77 only the myopic were insisting on having just one string on their fiddle.

Greater Majority

The educational broadcasting community has displayed a new kind of seasoning.

The coordinators, the ITV directors, the consortium managers—on balance, they have become more seasoned campaigners. In the words of CPB's Doug Bodwell, "the system has matured far more than people realize."

Learning more about instructional design and top-quality production methods, the educational broadcaster has begun producing better-looking and more effective materials. One result: larger enrollments. At KAET, Phoenix, student registration for college-level telecourses was "considerably higher" in 1975-76 (3,199 enrollments) than it had been before. Why the increase? Better course design, production, and publicity, according to ITV Coordinator Ted Christensen.

Men and women in the trade have taken a harder look at their wares. You only need to scan the 37-page *Summary Evaluation of the* Feeling Good *Television Series* by Keith Mielke and James W. Swinehart to understand this point. This analysis found that *Feeling Good* had reached about a million adults a week. Even so, there still did not seem to be a formula for "producing effective health education material to reach a general audience of voluntary viewers."

Increasingly the educational broadcaster has understood that probing research must be done, before and after the fact. Increasingly he has recognized that staff members will have to hustle more to step up ITV uses in-school, awareness at home, and understanding in the places where big money decisions are made.

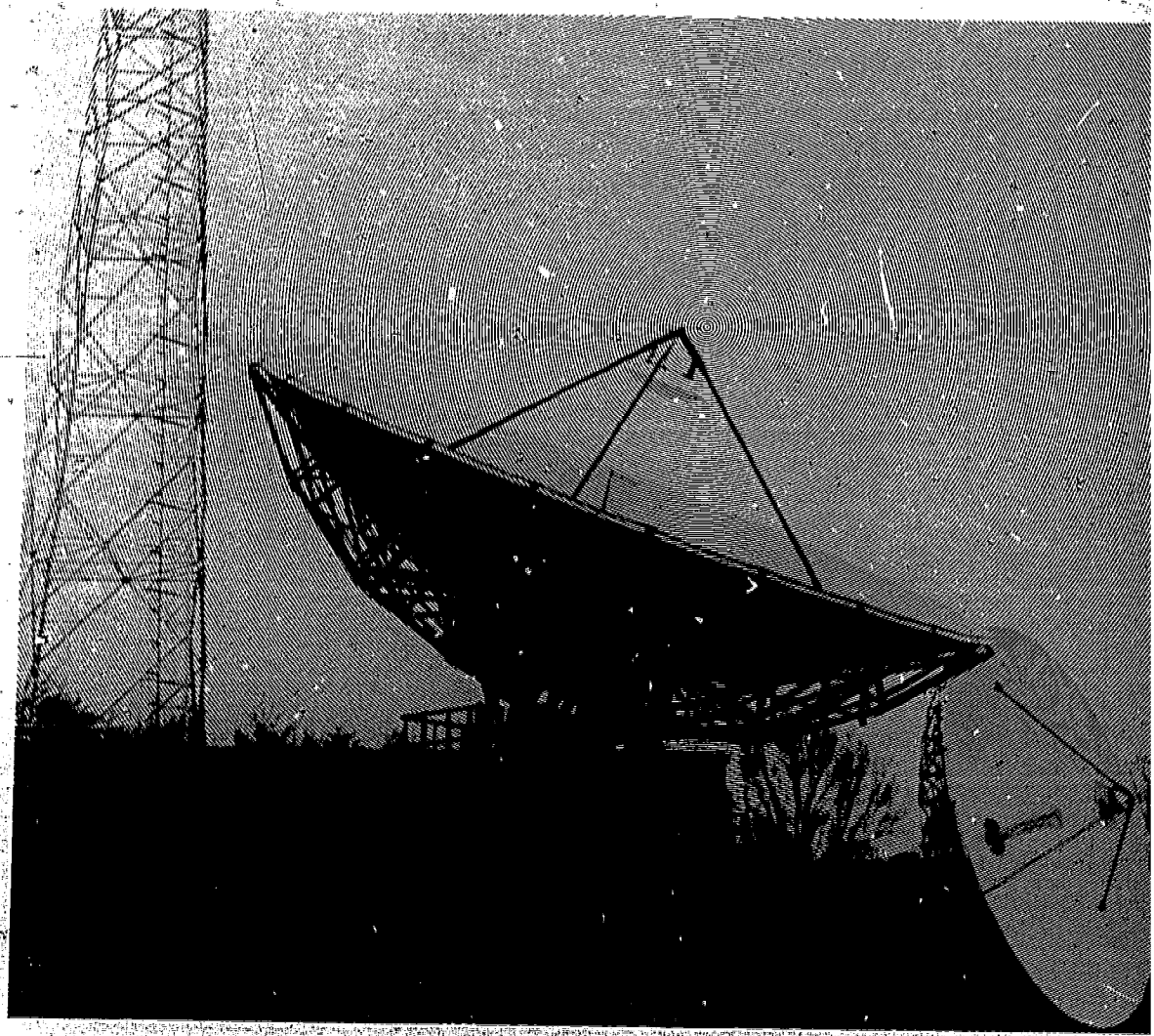
Then, too, no one needs to remind him any longer that his is a service profession. Society has become troubled about the teaching of basic skills. AIT's enterprising Essential Learning Skills project is one response. Other concerns have arisen—about educating the young on careers, or metrics, or consumer tactics, or social behavior and self-understanding. In each case, a producer came forward with a broadcastable antidote. This response mechanism has even carried over into the adult arena: when regulations stiffened on the uses of pesticides, the University of Mid-America produced its current series on *Pests, Pesticides, and Safety for the Private Applicator.*

But look at the size of just a few of the audiences to be served. More than seven out of ten adults interviewed told the prestigious Commission on Non-Traditional Study in 1973 that there was something they'd like to know more about, or to do better. Some 23 million American adults evidently are not able to cope with a train schedule. Then there are the swelling thousands—National Center for Educational Statistics estimates a 24 per cent rise between 1974 and 1984—lining up for part-time post-secondary learning.

So the marketplace translates into millions of people. And it is growing. The electronic gear to reach them is there—TV sets are fixtures in 68.5 million homes, and there are radios in 99 per cent of residences (the average: four sets a home). In sum, the educational broadcaster's tools were sharper, and the techniques better. If anything, the men and women in the trade were more adept. This is fortunate, because the untilled acreage before them stretches for miles.

Section 3

Articles



Satellite Technology: Satellites and Public Service Telecommunication

by John Witherspoon

Among the major organizations concerned with telecommunication and the public service, the Public Service Satellite Consortium is the new kid on the block. The purpose of this article is to describe why PSSC is here, and how the neighborhood is changing.

Nominally, the Consortium is an outgrowth of the first year of health care and education experiments which were conducted with the use of NASA's ATS-6 satellite. When the satellite was dispatched to India for its second year of service, those domestic users who had been experimenting with this remarkable spacecraft were left with no way to apply what they had learned. With the encouragement of the Department of Health, Education and Welfare, the White House Office of Telecommunications Policy, and the National Aeronautics and Space Administration, the Consortium was formed.

More fundamentally however, the first ATS-6 experiments were not a reason but a rallying point. The reasons for the formation of PSSC existed before ATS-6 was launched. These reasons are related to the nature of public service and the potentials of modern telecommunications technology, and not to any particular satellite.

Public Service Management: The Benevolent Dilemma

In the United States most major public services, including education, health care, library services, and even public safety, are fundamentally local. We believe in the local school district, the separate university, the individual medical practice, the community hospital and local police and fire services. True, some state and federal standards and controls apply to aspects of these services, and their practitioners sometimes feel burdened by distant bureaucracies. But basic management begins at home, and the distant bureaucracy is resented as a deviation from fundamental principles. We don't want Big Brother teaching our children. We want our doctor to know us as individuals. We don't want a distant, brooding police presence looking over our shoulders.

And so, while acknowledging the need for involvement by state and federal agencies, we put our faith, our votes and our money in local institutions of public service. One result is that there is no such thing as (for example) the American Education System.

Most of us believe that this decentralized approach—for all of its redundancies, presumed inefficiencies, uneven quality and regional mismatches—is the best course for our society.

Along with the strengths of this arrangement, however, there is a dilemma. The diffusion of control makes it difficult to make decisions which cross jurisdictional boundaries. Among such decisions are many related to telecommunication. For example, some telecommunication decisions (e.g. those dealing with instructional television) require the consensus of a critical mass of users to achieve cost effectiveness; others require agreement on curriculum content,

John Witherspoon

or agreement on what constitutes delivery of service, or agreement on technical standards to be applied, or the machinery of accreditation, or the fair apportionment of costs, or any of a multiplicity of issues.

We're all familiar with the feeling that a given idea is "a good one, but the budget can't stand it." How often is it not a matter of dollars but of feasibility, related less to the amount of money in the budget than to the realities of making and executing the decision? One must ask himself whether he really has jurisdiction over the area to be affected by his decision. With the diffusion of authority in much of American public service, it would be very surprising if many administrators spent much time on the implications of modern telecommunication. In the field of education, for example, nobody from the local superintendent through the chief state school officer to the Secretary of HEW has enough of a voice to make a basic decision regarding the application of modern telecommunication.

And thus we arrive at one of the core tasks of the Public Service Satellite Consortium: aggregation.

The Heart of the Matter: Aggregation

By and large, American public services have not been served very imaginatively by communication carriers and suppliers. From the standpoint of someone in the communication business, education or health care or libraries or many other services are disaggregated markets. The potential may be huge, but there's no handle on it.

One of the prime purposes of the Public Service Satellite Consortium is to act as a mechanism for aggregation. PSSC works at aggregation on four fronts:

1. Aggregating requirements, so that maximum use may be made of facilities and software, enhancing the feasibility of otherwise marginal activities and minimizing costs for all.

2. Aggregating resources so that costs are spread over a broad base.

3. Making possible bulk arrangements for facilities, so that first costs are minimized.

4. Providing a milieu for cooperative aggregated decision making which would not be feasible for individual administrators.

The Concentration on Requirements

The orientation of PSSC is not toward particular technologies but toward the requirements of public service. These are not technical requirements, but mission requirements—service requirements—to which telecommunication technology may provide a response. Thus the technology becomes part of a reasoned answer, not the purpose for the question.

The PSSC concentration on requirements is centered in a multi-year, multi-part project which was launched at the end of 1976. The overall project title is "Public Service and Telecommunication: Status, Requirements, Prospects." The idea is to build a continuing, up-to-date information base on the requirements of public service that are related to communication, together with data on the present status of public service telecommunication applications and prospects for matching service requirements and technology that is or will be available.

In making these examinations, there are no foregone conclusions about the nature of the communication service to be rendered. Many people had their first exposure to satellite technology via coverage of moon landings or the Olympics, and thus television is a natural assumption when satellites are discussed. But it is crucial to examine service requirements carefully, with one eye on the bank balance. Video is attractive, but it can be prodigiously expensive, while some forms of data transmission are both very useful and very inexpensive. Audio services are sometimes assumed to be second choices, but audio is simple, inexpensive, marvelously flexible, and perfectly capable of communicating most of the information required in most situations. The same audio-quality channel can also convey hard copy very efficiently.

PSSC, then, does not start with services to be offered for sale, but rather with public service requirements to be met. It then attempts to respond by arranging services carefully designed to meet the requirements effectively and at minimum cost.

The Continuing Education Network

The first PSSC inquiries about the requirements of members yielded a basic fact: an overwhelming number of them are concerned with aspects of continuing education, and they are interested in the potential of

satellite communication in helping to satisfy continuing-education requirements. In mid-1976, PSSC announced a major planning effort toward a Continuing Education Network, directed initially to the continuing education of such professional groups as physicians, other health care professionals, teachers, engineers and lawyers.

Although the concept is referred to as "The Continuing Education Network," in fact the final result is likely to be a varied set of distribution arrangements, with PSSC acting as broker to bring together those who wish to provide educational services and those who have the means of distribution.

As of early 1977, the Consortium is preparing an overlay of service possibilities and distribution possibilities, in order to determine both technical and economic feasibility.

The interest of the Consortium in continuing education is by no means limited to the professions. Many professional groups have urgent requirements, however, and these groups are supported by a national infrastructure of professional societies which makes broad-scale education services not only acceptable but customary. As the Continuing Education Network idea matures, PSSC anticipates that other sets of users will make use of the system.

The Prior Question: Why Satellites?

The PSSC members are concerned about meeting service requirements. For all the gee-whiz and glamor surrounding the development of space technology, the core questions involve getting the right messages to the right places at the right price, and not whether the nearest relay station is on top of the local bank or in geosynchronous orbit. Why then should social service groups form a Public Service Satellite Consortium?

Satellite communications has several characteristics that make it very attractive to professionals in health care, education, library service, public safety and other major services.

These include:

1. For many classes of service, satellite technology should be less expensive than the terrestrial alternatives. For all their space-age sophistication, satellite systems are operationally simple. They have relatively few components. They are distance-insensitive: that is, any point within the "view" of the satellite is for practical purposes equally distant from any other such point. One concrete result is that trans-atlantic telephone rates have decreased substantially since the advent of satellite service.

2. Satellite systems are flexible. New points can be added to a network by installing an earth station, without regard to the difficulties of distance and terrain which plague the installation of terrestrial systems. This is particularly important to the delivery of services to remote rural areas. New systems, making use of smaller, simpler earth stations, will make this characteristic even more attractive.

3. Satellite systems tend to offer increased choices in the kinds of services available. Broadly speaking, satellite carriers offer "bandwidth in bulk," while terrestrial carriers offer individual services.

4. Some needed services are simply not available from terrestrial carriers. For example, National Public Radio, most members of which are FM stations, cannot now deliver a program which technically matches the quality of the local stations' transmitters. The planned NPR satellite network will deliver four full-quality channels simultaneously.

5. Present satellite technology provides some intriguing glimpses of promising future service. Emergency medical services such as mobile ambulance communication, reliable communication instantly available at disaster sites, locator systems for dangerous cargoes, sensors to monitor water supplies or forest fire conditions and many other valuable ideas are immediately in prospect.

PSSC and the Public Broadcasting Interconnection System

Some of the reasons above impelled the leadership of public radio and television to develop a new national satellite-based interconnection system. For television the system will provide much more programming flexibility at approximately the same cost, with a likely increase in technical quality. For radio, the system's benefits will be substantially more dramatic. As noted above, full FM quality will be available in the

national system for the first time. The system will have four channels which, for example, might carry a stereo concert, alternate live coverage of a public event and subcarrier service for the blind, simultaneously.

Earth stations in this unique system will be owned by the respective radio and television stations. Satellite service will be provided via Western Union's WESTAR system.

As envisioned for completion at the turn of the decade, this system relies on the largest network of earth stations in the world.

Properly used, such a system could greatly broaden and deepen the service rendered by public broadcasting stations to their communities. Programming offered via the conventional transmitter will continue to be the most obvious, easily recognizable part of a station's work, but specialized services of many kinds will be possible simultaneously. These services might be delivered to people at home by cable, or by a variety of means to such institutions as schools and universities, hospitals and clinics, industrial plants and offices, both governmental and private.

The Public Service Satellite Consortium has a special interest in these non-broadcast services, which should enormously enhance the station's service while broadening its base of support. The PSSC hopes to evolve effective working arrangements for the maximum public service use of this important resource now that FCC has approved the lead application.[1]

At the same time, the Consortium will continue to explore the other available avenues to meet the requirements which emerge.

Getting Started: Experiments and Demonstrations

Several potential users of satellite service have begun by using experimental satellites made available by NASA, often with project support from HEW.

The experimenter most closely associated with public broadcasting is SECA, the Southern Educational Communications Association, which began active experimentation in 1977 using the Communications Technology Satellite (CTS), a joint venture of NASA and the Canadian Department of Communication. SECA has conducted experiments with program delivery and origination over a wide area of the southeastern quadrant of the United States.

Most of the experimentation to date has been conducted using the ATS (Applications Technology Satellite) series developed and operated by NASA. The first in the series, ATS-1, was launched a decade ago with a design life of less than two years. It is still working, providing voice and narrow-band data services from a position over the equator, roughly at the longitude of Hawaii. Its companion, ATS-3, offers comparable service from a position farther east. Between them, they cover most of the Pacific Basin and the Americas. Video experimentation is made possible by ATS-6, the satellite which first served Appalachia, the Rocky Mountain States and Alaska; then was shifted to serve the large year-long experiment in India; and is now on station at 140 degrees west longitude for more domestic experiments.

The NASA satellites have advanced the state of the art by placing increasingly higher power and technical flexibility in the satellite, with the result that the earth stations can be simple, smaller, more reliable and much less expensive. The implication is that future systems will have earth stations on or near the user's premises, thus increasing flexibility and decreasing cost. As satellites become larger and more sophisticated, communication systems become simpler. ATS-6 receive-only earth stations originally cost—installed—less than $5,000. Their replacement cost today would be about $10,000. CTS receive-only stations are somewhat more expensive—about $16,000—but the comparison with "conventional" receive-only stations ($75,000-$150,000) is still very favorable.

Earth stations for audio services on ATS-1 and ATS-3 are simpler still, costing in hundreds rather than thousands of dollars and based essentially on a modified taxicab radio with a fancy little corkscrew antenna.

ATS-1 and ATS-3 are still in constant use. A recent example is the series of international seminars conducted by the National Education Association (NEA) with teachers from Appalachia, Alaska and the Pacific Islands. In order to cover enough of the globe, both ATS-1 and ATS-3 were used, with the linkage between them accomplished

[1] The PSSC is now collaborating with PISA (The Public Interest Satellite Association) in investigating future access of the public broadcast satellite system for nonbroadcast use.

by PSSC at its technical center in Denver. NEA's development of the project was assisted by the satellite project of the Appalachian Regional Commission, a veteran experimenter which has important plans for continued experimentation followed by regular service to the Appalachian region.

Other major experimenters have included the Veterans Administration, which is developing satellite-based hospital communications; the State of Alaska and the Alaska Area Native Health Service, which experimented with service to clinics in remote bush villages and with service to Alaska education; the Federation of Rocky Mountain States, which conducted a complex of activities in education and health during the first year of ATS-6; and a number of current experiments primarily involving services to health care and education.

Of emerging importance is a series of short-term demonstrations involving the CTS satellite in professional meetings, special events, and conferences which can be enhanced by the use of the satellite and associated small, portable earth station equipment.

The Public Service Satellite Consortium provides technical and planning assistance to experimenters. Through the operation of the Technical Center in Denver, PSSC also provides direct satellite access. Of prime importance to the Consortium, however, is what happens after the experiment. Is the proposed service technically, economically, and institutionally feasible? If not — and if its value seems to warrant its further development—how can it become feasible?

Shaping Technology to Suit Requirements

By and large, public service organizations have had to content themselves with the use of technology developed for other, perhaps more general purposes, or with products developed in accordance with the entrepreneur's view of "the education market" or "the medical market." Now there is increasing recognition that the public service community itself must be involved up front.

In Autumn of 1976, and follow-up session in the winter of 1977, NASA's Goddard Space Flight Center began a serious inquiry into the prospects for a satellite system designed around the requirements of public service. A number of representatives from health care, education, public safety, state government and others were involved in a preliminary planning meeting. Detailed follow-up activities were launched soon thereafter, with PSSC conspicuously involved.

In December 1976, the Hughes Aircraft Company, which pioneered the development of satellite communications, proposed to NASA a new satellite designed for the era of the space shuttle (Syncom IV, scheduled for completion and launch by 1980). This spacecraft, possible forerunner of a new, larger, more powerful, more flexible generation, would have its communications capacity oriented to public service requirements.[2]

How About The PSSC Satellite?

From the earliest days of the Consortium, there has been a continuing stream of questions regarding the organization's role as the prospective operator of a communication satellite system. But the PSSC staff and board talk more about requirements than about given systems.

The Consortium is devoted to assuring that practical, realistic public service requirements are met. That goal might be reached by any of a number of organizational alternatives. The goal is the important thing. At least during this early—and rather yeasty—period, the proper posture of the Consortium is to keep its eye on requirements and keep its powder dry.

The Question of Software

PSSC is not a programming agency. It is concerned with ways and means, not with the form or substance of the public service messages to be communicated. Nevertheless, it is clear that content—software, courseware, programming, as you will—is an important part of the puzzle. It does not require a master economist to recognize that *Sesame Street*, with high production costs but modest expenditures per child served, is not to be compared with a specialized presentation for a few thousand users. It does little good to arrange simple, low-cost transmission if that which is to be transmitted cannot be made cost effective.

The implication is that programming must meet its objectives within an appropriate economic framework. To invest $100,000 in a production that is designed for five thou-

[2] It appears likely that a high-powered satellite, SYNCOM IV, will be launched via a space shuttle in 1979-80. Details on the number of transponders and use have not yet been determined.

sand people may be feasible, but at the very least the question must be considered carefully.

Heretofore, many of us in telecommunications have concentrated on ways to deliver service to more and more people. One effect of our success is that increasing numbers of audience members justify the investment of more production money. A set of interconnected public television stations, reaching 80 per cent of the American people, make it possible to spend, wisely and economically, quite a large sum on one program. One effect of a broadcast-oriented system, however, is that it's not really cost-effective to serve very small groups at all.

Satellite communications will make it practical to reach relatively small, dispersed groups of people with a wide variety of communication forms. But the potential of this prospect will not be realized unless imaginative, effective material can be produced at a price that suits the individual situation.

And In Conclusion

The Public Service Satellite Consortium was developed at the intersection of some difficult problems and some very engaging prospects. What is sought is not a panacea but a flexible, economical, feasible set of answers to some thoroughly practical—if often baffling—questions. A cooperative approach to modern telecommunication shows immense promise. The Public Service Satellite Consortium has a way to get from here to there.

Open Learning: The Case of a Marriage

by Dr. Bernard Luskin

The demands on education are changing and expanding. More than half of the students in post-secondary institutions are part-time; the number of adult students continues to increase; and the traditional notion that education ends at 18, or 21, is no more. This is a time of continuing education—of lifelong learning.

How can we provide access to education for those who need and want it? As we peel away the stereotypes and adopt a broader perspective, one answer becomes clear: learning systems which include TV.

Television's contribution to higher education, and to education as a whole, has yet to be fully realized. Both successes and failures have been reported. But several recent positive experiences point to the future prospects of television, in concert with educational institutions, as an important learning tool for the late seventies and beyond.

Coastline: Background

On February 25, 1976, after more than a year of intensive study, the Board of Trustees of the Coast Community College District established Coastline Community College, a college beyond walls. Coastline opened in the Fall of 1976 with 20,000 students.

The purpose of Coastline Community College is to take educational programs into the communities in new ways. The true campus of Coastline Community College is the community itself. Currently, Coastline operates through 106 learning centers offering 1,250 classes this Spring in the Coast District's 88 square-mile service area encompassing six cities. More than 25 per cent of all Coastline Community College students are enrolled in broadcast courses for credit offered by the college over its station KOCE-TV.

Behind this event stand two decades of changing conditions in the Southern California region that Coastline serves.

The Coast Community College District (Orange County, California), in the 1950s and 1960s, watched the population of Orange—especially its own 88 square-mile, six-city area—increase at such a rate that within a decade those at Coast envisaged the need for fresh approaches for expanded educational opportunities. In 1971, Chancellor Norman E. Watson of the Coast Community College District stated, "We now have the opportunity of converting every household into a classroom. We have the opportunity of implementing the learning society by utilizing twentieth century technology. It is incumbent upon us to act decisively."

Watson's observations were prompted by research showing that the average working adult now enjoys 50 hours per week for leisure and enrichment. Twenty-two hours of this leisure time are spent watching television. Ninety-six per cent of all American homes are now equipped with a total of 121 million television sets. There is one television for every two citizens, and the set is turned on in an average American household for six hours and 16 minutes each day. Combining these facts with research showing success in learning, the great poten-

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tial for broadcast credit courses became clear.

In the Fall of 1972, the Coast Community College District switched on its new public television station, KOCE-TV. Owned and operated by the district, KOCE's primary thrust is in broadcast courses for credit. Beginning in the Fall of 1972, 696 students enrolled in two television courses, neither of which was produced by the district. Since that time Coast has produced eight courses. As a result, telecourse enrollment has surged continually upward. In the Spring of 1973, 1,388 Orange County residents enrolled in three courses offered over television. By Fall 1974, 5,000 students were enrolled in six courses, and an additional 1,000 Orange County residents enrolled in six courses at several nearby colleges. By Spring 1976, television enrollment in eight courses had swelled to over 6,000 students.

In the Fall of 1976, more than 140 colleges throughout the United States also offered Coast-produced courses. They included post-secondary institutions in California, Florida, Iowa, Illinois, Mississippi, South Carolina, Texas, Vermont and Maryland.

Courses produced by the Coast District to date include *Cultural Anthropology, Introduction to Psychology, Yoga, Freehand Sketching I and II, Sewing* (with Fullerton College), *Contemporary California Issues*, and *Home Gardening*. Presently in production are biology, home decorating, child development, and astronomy.

In addition, Coast is engaged in cooperative efforts with the City Colleges of Chicago and the Dallas Community College District in the design and production of courses in interdisciplinary humanities and American government. Further, work has been done in concert with the University of California at San Diego, Little, Brown and Company, McGraw-Hill, Inc., Kendall/Hunt, Inc., WGBH (Boston), KCET (Los Angeles), and WNET (New York) in various cooperative arrangements. For example, Coast participated in the development of materials for the nationwide offering of *Classic Theatre: The Humanities in Drama, The Adams Chronicles* and *The Age of Uncertainty*. More than 600 colleges, nationwide, have offered these courses to more than 100,000 students. Broadcast courses both regionally and nationwide are a reality.

It is with this background in mind that the Coastline experience may be understood.

Coastline: Operations

Coastline's televised courses are a fraction of its hundreds of offerings; the college is committed to both new and traditional approaches to learning. It should be noted, however, that television courses enroll 25 per cent of Coastline's 20,000 students.

These television-based courses have the potential of reaching large numbers of students. As data presented later in this report will show, the courses offer a vastly expanded educational dimension; tend to attract new students into the college; and provide a high visibility public relations exposure for the college (since the number of casual viewers of course segments is vastly greater than the actual course-takers).

Stations benefit from broadcast courses too. They develop an ardent following, create an enhanced local image, and have, in the course takers, a sustaining and motivated audience.

Let us take a closer look at how this marriage of education and public broadcasting works.

Telecourse Design

A careful process is followed in selecting, planning, designing and producing television courses. Coast applies principles of sound instructional design, employing three full-time instructional designers and full-time research and publications staff in the college, and six full-time producers at the station. Each course is produced by a course team composed of an instructional designer, the academic adviser(s), publications and distribution specialists who work with the producer/director from the station.

Under the supervisor of the executive producer for telecourses and the director of telecourse design, careful budgets and detailed production schedules are established for all telecourses and for their individual print and visual components. Careful attention is paid to a specially developed process which includes peer review, special consultants, advisory committees and pilot testing. This process assures that the course components (video tapes, study guide, anthology or text) permit the student to meet all lesson objectives and answer all test items in the course test bank. Implementation of all these activities assures on-time production and completion and makes possible the design and production of several courses simultaneously.

In summary, television courses include both print and television components and are designed in terms of student needs and objectives with highly qualified academic advisers, writers, producers and consultants.

Telecourse Operations

The division of telecourse operations, under the Coastline dean of instruction, coordinates the offering of broadcast courses. The Coastline Community College Telecourse Operations staff consists of an expediter/coordinator, a secretary, four student assistants and two part-time clerk typists.

Each telecourse has a learning manager assigned as the instructor/facilitator for the course. In the spring of 1977, the Coastline staff included 19 learning managers serving the needs of television students (average of 250 students). Learning managers receive one hour per week of time and pay for each increment of 70 students up to a maximum of 700 in any course for any manager. Actual course maximums are established by the dean.

The responsibilities of telecourse learning managers include the coordination of all the logistics in administering a course. The learning manager is also the students' contact from the beginning to the completion of a course. He assigns course material and administers examinations and grades.

Enrollment

Students may enroll in television courses in a variety of ways, either through on-site registration at the beginning of the semester or through the Coastline Community College's "registration by mail" procedure. Students are permitted to enroll in telecourses through the sixth week of the semester.

Telecourse Operations provides coordination and liaison assistance to the students and to the learning managers.

A primary requirement for a properly adminstered telecourse is good communication with the student. There is a strong need to acquaint the student with the workings of the telecourse, as well as to assist the learning managers in their function as instructors of record. The Telecourse Operations Department of Coastline Community College operates in the following manner to achieve these objectives.

Telecourse Operations works closely with the district information services department (Data Processing), the instructional media center and KOCE-TV.

The district information services department provides mailing labels or computer-addressed envelopes for all mailings, and prepares preprinted quiz/examination cards for all enrolled students. The instructional media center processes approximately 280,000 copies of letters and instructional material for Telecourse Operations during a typical semester. The KOCE-TV staff assists in providing duplicates of the television course cassette tapes for the media centers of affiliated college libraries, libraries in the community and businesses within the district. They also provide public service announcements regarding enrollment procedures and upcoming midterm and final examination sites and dates.

All learning managers for Coast telecourses hold California Community College credentials in the discipline related to the telecourses they manage. Coastline Community College hires instructors from affiliated colleges on an overload assignment basis, or part-time instructors on an hourly assignment basis.

In order to maintain regular contact with students during the semester, telecourse learning managers communicate with students via mailings and telephone/office availability. Most telecourses utilize a testing/prescriptive feedback system, which is coordinated through the district information systems department.

A unique variation is carried out in cooperation with the McDonnell-Douglas Corporation in Huntington Beach. Video cassette players have been placed in the lounges and cassettes have been made available. At Douglas many students take broadcast courses during their lunch hours—viewing the programs either in-plant or at home, and participating in the remainder of the course through broadcast.

Coastline: Results

The Coast Community College District continues to examine the profiles of students taking broadcast courses. Grants from the Corporation for Public Broadcasting and the National Endowment for the Humanities, in addition to continuing local research, have made the compilation and study of valuable data regarding telecourse students possible. Several preliminary trends are emerging.

Perhaps the most significant trend demonstrated by research to date is that the overall goal of telecourses—access—is being

achieved. Thirty-five per cent of all television students are enrolled only in broadcast courses. Conversely 65 per cent of the telecourse students are enrolled in a classroom course. Student responses tell us that these are students who would otherwise not be taking any college-level classes at all. These data strongly suggest that television as an instructional medium is reaching a new constituency. Eighty per cent of all telecourse students so far have completed fewer than 30 units of college work. However, it should be noted that the courses offered by Coastline Community College are lower-division—and the data should be interpreted in that light.

Schedules at home and work, transportation, child care and various other limitations have restricted the ability of many of these students to avail themselves of educational opportunities they want and need. Television may provide these learners with access to education.

While telecourses are attracting many new students, they continue to serve the district's "classroom" students. Among the 65 per cent of telecourse students who are concurrently enrolled in classroom courses, the prime factor in their television enrollment is availability. Ample broadcast schedules, and the fact that there is "never a closed class," are features that appeal to campus-based students. Therefore, students who enroll in telecourses often do so concurrently with classes taken at one of the district's three colleges. As time passes, it is predicted that taking a broadcast course will become a routine asset in the schedules of full-time students at this institution.

To assess why more than 6,000 students took television courses during the spring semester of 1977, the district continued its practice of surveying the students themselves. Clearly the strong majority (over 60 per cent) take these courses to help them reach a degree objective. An increasing number of students, though, list personal enrichment or professional advancement as the objective. These percentages vary from semester to semester based upon the types of courses offered. In the Spring of 1976, with the offering of the ever-popular horticulture class *The Home Gardener*, the ratio of "personal enrichment" students to those seeking credit was nearly even for total telecourse enrollment.

Further statistics show that the average age of television students is 34; that nearly 50 per cent are employed full-time; and that just under 30 per cent are veterans receiving benefits while going to school.

The ratio of men to women varies greatly and is tied to the nature of courses offered during a particular semester. In the Spring of 1974, 67 per cent of the telecourse students were women. This figure was greatly influenced by the 75 per cent female enrollment in the popular *Classic Theatre* course offered nationwide. That ratio was exactly reversed in the fall of 1976 when a popular real-estate course was offered. Men comprised 67 per cent of the total telecourse enrollment in that semester. The percentage of men among the 1,000 students taking the real-estate course was nearly triple that of women. A composite of enrollment figures over the previous three years shows an average of 53 per cent female enrollment in all telecourses, with a continuing trend toward more women students.

Profiles of students taking telecourses change depending on the type of course and the broadcast schedules. Courses scheduled for viewing during the mid-afternoon attract more housewives, but evening broadcasts attract more persons employed outside the home. Interestingly, a great majority of all students studied watched lessons which were aired between Monday and Thursday, pointing to these times as telecourse "prime time."

Each semester has brought evidence that the use of television for college-level education is both desirable and effective. Broadcast courses seem especially attractive to students who are older, married, responsible for dependents in their homes and/or working full time.

While there are still much data to be gathered, many questions to be answered and problems to be solved, enough empirical evidence is at hand to show that Coast Community College District's Coastline Community College, through KOCE, has been able to engage in broadcast education successfully. In addition Coast is making education available to persons heretofore excluded, while at the same time providing broad cultural and community affairs information through the station to its constituency.

A survey conducted in October 1976, which covered the viewer population of KOCE-TV provided evidence of public in-

terest. Of the top ten most popular programs, as selected by viewers, five were college courses for credit. Tied for first place, with the *David Susskind Show*, was *Freehand Sketching*. Other courses appearing in the top ten were, *Foods for the Modern Family*, *Adams Chronicles*, *Real Estate and You*, and *As Man Behaves* (Introduction to Psychology).

While television is clearly the entertainment medium of our time, it has yet to become a major educational medium. We have, however, placed a scratch on the surface of its potential in using television for educational purposes.

New partnerships between public television stations and educational institutions are beginning to blossom. Broadcast courses, video cassette technology, and soon the video disc, will be used in institutions nationwide, in colleges, in public libraries, in senior citizens centers and in homes where the acquisition of knowledge first begins.

Certainly, facts such as those indicating that by the time a student has graduated from high school that student has spent 15,000 hours watching television must be heeded. The fact that there are more than 270 public television stations and 2,500 two- and four-year colleges across the nation demonstrates an enormous natural network of institutions who may participate actively in the use of broadcast courses for credit.

Wide use of quality broadcast courses looms as a major educational and communications technology breakthrough. Many problems, of course, still exist. There is still a void of quality courses available.

Through six years of experience with broadcast courses for credit, the Coast Community College District has established the efficacy of broadcast courses as a viable component of a diversified educational program in its area. Coast, along with other institutions throughout the nation, is actively involved in the emerging dimension of broadcast courses as an aspect of educational opportunity—providing access to learning for individuals throughout life.

Research
The Electric Company and the School Marketplace

by Dr. Edward Palmer

Designing instructional television to match the needs of the classroom is a kind of marketing problem. *The Electric Company* was designed by people who grasped that fact but rarely articulated it. The series was designed with its market of second- to fourth-grade students and teachers clearly in mind, but its creation was not accompanied by explicit use of marketing terminology. The understanding was informal and intuitive.

Today, in retrospect, we can employ marketing concepts to understand more clearly why *The Electric Company* succeeded as it did. Our experience with the series leads us to believe that these factors would contribute to the success of any instructional television series.

Early Developments

The Electric Company was not originally designed with the classroom audience primarily in mind. We felt that most target children would not be able to watch in school. Our first concern was to make the series sufficiently entertaining to attract a substantial home audience, and to have a convenient after-school broadcast schedule.

We did construct the series carefully to make it suitable for classrooms. As originally conceived, it was to consist of 130 half-hour programs, aired five days a week. The programs were to be of convenient length for classroom use; they would also be frequent enough and long enough to stand a good chance of stimulating real achievement. With a 130-program series, moreover, it would be possible through one replay to fill out the entire calendar year, so that the programs would be continuously available for viewing.

But nothing in our planning had prepared us for the remarkably high levels of school utilization that actually occurred. We were quite surprised when our first survey, taken two months into the initial broadcast season by the Research Triangle Institute (RTI) showed that nearly a quarter of all schools in the nation were making some use of the series. We were even surprised and gratified a year later to find that the figure had risen to more than a third of all schools. These figures are all the more remarkable because the country, and many schools within the broadcast area were not equipped to take advantage of it.

More detailed information in classroom viewing and penetration came out of these RTI suvreys, which included an initial survey and a follow-up study during the second season.

Among their findings:

- Approximately two million pupils were viewing *The Electric Company* in school. This figure includes one out of every four second and third graders in large cities.
- Within two months after it appeared in October 1971, the series was being used by 23 per cent of elementary schools in the United States; in schools with full TV viewing capabilities, the number jumped to 45 per cent.

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- While 85 per cent of the first-season teachers had "very favorable" opinions of *The Electric Company*, 87 per cent of the second-season teachers had the same high opinion.
- The teachers' opinions became more favorable as they used the series. Forty-three per cent of first-season teachers said that their opinion of the series was more favorable at the end of the school year than it was when they first saw the program. Of the second-season teachers, 48 per cent indicated increasingly favorable opinions. The series lost favor over time among only seven per cent of first-season teachers, and only five per cent of second-season teachers.

Dr. Sidney P. Marland, then U.S. Commissioner of Education, found the widespread use of *The Electric Company* to be "truly one of the remarkable events in the history of instructional television." Survey results had established beyond any doubt that the success of this series during its first season was not merely the result of a novelty effect. They had also established an important reason for that success—teacher acceptance.

Adoption of the series by schools was far too rapid to have resulted from a bureaucratic review process within schools and school districts. In marketing terms, it was the teacher as consumer who must have been responsible for this early high rate of school use. The teachers—those whose votes count most—had taken a year to scrutinize the series, and had voted their acceptance and approval.

The teachers' role in the marketing equation is especially interesting when one considers the history of instructional television.

Teachers and Television

One of the features thought to be most promising about early instructional television was its ability to bring a master teacher into every classroom. During the fifties and sixties, television was used to imitate instructional situations as they had existed prior to television.

As Marshall McLuhan has observed, every new communication medium has been used in its infancy to copy prior media, and has come into its own through a gradual process of maturation. Infancy for instructional television was the era of the talking head, of the camera trained on a real or simulated classroom, lecture hall or laboratory.

That approach to instructional television encountered enormous resistance from teachers. The reaction should not have been surprising for the forms of television were virtually identical to those of the classroom. The TV set was quite understandably seen by classroom teachers as competition—a threat to the survival and perpetuation of their role.

Instructional television has never achieved wide use and enthusiastic acceptance in schools by *fiat*. It has to stand up to the test of the school as a marketplace of various sources and strategies for teaching. It must be perceived as a tool with sufficient payoff to warrant the school's and teacher's investment of capital, time, energy. When compared with other alternatives, it must prove to deliver the same effects more efficiently, or greater effects for the same investment, or meet previously unmet needs at an affordable additional cost.

Television does have certain competitive edges. One of these is its ability to deliver pedagogically significant effects through forms not otherwise accessible to the classroom. It can serve as a window on the world, thus providing for vicarious field trips; it can employ film, animation, and technical effects not otherwise available to the teacher.

One reason for the surprisingly wide classroom acceptance of *The Electric Company* is that it exploits these unique audio and visual techniques—and does so in the genuine service of instructional purpose. This latter fact has won widespread teacher praise and has broken down many of the barriers that often stand between television and the classroom.

After many years, those involved in instructional television have correctly reached the conclusion that TV and the teacher combine most effectively when TV does what it does best and the teacher does likewise. In this way, teachers can view television as a powerful, complementary resource in the classroom—not as a threat.

Because of the early strong performance of *The Electric Company* in the school market, we worked deliberately in subsequent seasons to enhance its usefulness to schools. For example, we widened the range of achievement by moving away from the

earlier, almost exclusive emphasis on letter-by-letter blending, and by providing instead a balance between phonics and larger word units. We also gave more sequence to the instruction by moving from simpler to more complex reading tasks over the course of each program, and we published teacher guides and other materials for classroom follow-up.

Before the series had ever been produced, we and our academic advisors had come to a clear consensus on its target audience: it would be seven to ten-year-olds, with the bull's eye of the target group being second graders in the bottom half of their reading class. In actual fact, school surveys carried out in the series' first and second seasons show the greatest amount of use in second grade, followed in order by the first, third and fourth grades. Thus, as intended, the series is used primarily for prevention of reading difficulties, but also for remediation.

No marketing venture is complete without taking into careful account the psychology of the consumer, and this has been as true with *The Electric Company* as with any product or commodity. In the case at hand, two main categories of consumers had to be considered: the teachers, and the children themselves. Much of the two-year period of pre-broadcast planning was devoted to assessing factors that could affect teacher and child acceptance. I have mentioned already in this regard the use of television's unique instructional devices—the length and frequency of the programs, and the duration of the series. Other critically important factors were reading approach and production tone.

Our original research suggested—and the test of time has borne out—that the most effective and acceptable reading curriculum would be a "cafeteria" of approaches, with primary emphasis on phonics and a subordinated emphasis on sight-reading vocabulary.

On the question of tone, one of the crucial challenges was to avoid condescension toward the children, since the series was to be pitched especially toward children prone to reading difficulty. Clearly, the effectiveness of the series would be lessened if it were seen as a show for slow-learning children. A second challenge was to present reading in a positive light. Fortunately, both of these challenges could be met through the use of television's popular entertainment forms. Also fortunately, television has the inherent advantages of being non-threatening and non-punitive. Each morning in the typical class reading circle—at best an insensitive teaching-learning circumstance—slow-reading children fail in the eyes of their teachers and peers, but they cannot and do not flunk *The Electric Company*. Television viewing is one activity in which classmates are equally competent.

The decision to follow the lead of *Sesame Street* in combining education with entertainment had risks as well as advantages. One potential pitfall was that the series might be rejected by some teachers as being too frivolous, too sparse in its educational content. The first hard empirical evidence that this pitfall had been avoided came out of the teacher survey, done during the series' first season on the air. Eighty-five per cent of the teachers using the series had favorable over all opinions of the series; only one per cent did not. The achievement testing data clearly supported the more favorable impression.

To be sure, children can and do learn to read without the help of television, and have been doing so for a very long time. The chief potential advantages of television lay in making the instruction efficient, effective, and enjoyable, while freeing the teacher to give more attention to individual children.

I do not wish to leave the impression that we at CTW deem *The Electric Company* the ultimate use of film and television technique to advance beginning reading skills. *The Electric Company* is an outgrowth of current market circumstances; no matter how well it accommodates itself to the combined home-and-school viewing context, it is not the best that could be achieved under ideal conditions. For one thing, teachers understandably lament that the series is not always available at a time of day most convenient to their classroom schedules. For those schools with proper equipment and facilities, there is good news: the U.S. Office of Education has purchased rights for schools to tape the series off the air and replay it at their convenience for a period up to three years.

Teachers also wish that the series could be more responsible to individual differences in the existing achievement levels of their pupils, or to their pupils' different individual rates of learning progress. But here too, the picture is by no means all bleak. In

fact, the situation is much better than we had anticipated: our research has shown that children at one reading level may be benefiting at an introductory level from a given segment, while children at other levels are acquiring either drill practice or a review.

Finally, some teachers feel that while there may be no completely satisfactory possibility of correlating the series' lessons day-by-day with classroom instruction, it could be still more effective with careful classroom coordination. Short of making program segments in the form of single-concept reading lessons available to teachers on demand for presentation to individual children, or to sets of children functioning at about the same reading level, there is no way to match the content of the program with the content of the reading materials in a classroom. The Workshop has, in fact, explored the possibility of assembling single-concept sequences of *The Electric Company* and making them available for school purchase in film or videocassette form, and has found no viable market at this time. Neither do schools now have the budgets to purchase more than the least expensive of the many supplementary forms of classroom materials made available by the Workshop to accompany and reinforce *The Electric Company*.[1]

The story of teacher and pupil acceptance of the series would not be complete without reference to other, more intangible factors that have helped it to command attention and interest in the marketplace. Publicizing that the series was being produced to help meet the critical need for improved reading instruction was one important step. To this end, CTW undertook an intensive nationwide effort to inform teachers, parents, students and the general public about the purposes and content of *The Electric Company*. Before the first season's premiere, a paperback book outlining the goals and techniques of the program was mailed to elementary school teachers throughout the U.S. and a half-hour special about *The Electric Company* was aired on commercial television before the premiere on PBS. Also, newspapers, magazines and TV gave considerable attention to the experiment during its development stages.

The educational world in general, and instructional television in particular, have been largely ineffective in these areas of promotion and publicity. Federally supported programs in the past have received very little promotion and under existing shortsighted government policies are not likely to receive more.

On the other hand, promotion and promotability go hand in hand, and the very expensive production techniques that contributed to the series' professional level of technical and entertainment quality were an essential part of the promotability of *The Electric Company*. My own years of testing children's reactions to film and television fare have convinced me that their interest and attention levels are affected quite dramatically by the level of technical production quality. An inexpensive production, no matter how well planned from an educational standpoint, and no matter how well tailored to the classroom as marketplace, simply could not have commanded the attention it was possible to attract with this series.

Schramm, Lyle and Parker long ago advanced the notion that television viewing will make school work dull by comparison, and we have often had to respond to that belief in connection with *Sesame Street* and *The Electric Company*. My own feeling is that these shows neither create false expectations for the pupils, nor present a competitive threat to teachers. The programs are so removed in form and style from the classroom that they are contrasted rather than compared. Neither teachers nor pupils ever could expect the classroom to duplicate their pace, humor or techniques.

The comparison that children are far more likely to make is that between well-produced instructional television and expensively and professionally produced commercial television. An instructional series surely will

[1] Here once again, with the question of classroom coordination, we are dealing with a condition which, while important, does not unduly limit the ability of the series to produce significant reading improvement. The reason lies largely in the fact that so much of beginning reading consists either of associational learning —of learning to associate an arbitrary system of written symbols with an equally arbitrary set of speech sounds—or of learning to guess at the meaning of written units through contextual cues. The television content does not have to correlate with the classroom reading program to provide mastery over the enormous number of discrete associations and conventions that make up the arbitrary system of written English.

suffer in the ratings if it comes across looking shabby or dull.

The teachers themselves deserve special credit for finding ingenious ways to reverse the situation we have been describing so far, and adjusting the marketplace to the demands of the television series and to the broadcast schedule. We have encountered teachers who have used only 10, 15 or 20 minutes of the program a day or who use 20 minutes or a half-hour once or twice a week or who follow other such patterns, and schools like Lincoln Heights near Cincinnati that tape the series off the air and make it available not just for 30 minutes but continuously throughout the entire school day. Many enterprising teachers work out systems for bringing together two or more viewing classes when they have but a single television set, or struggle to have an antenna erected to help improve reception, particularly in fringe areas and areas with no VHF signal. Moreover, we have received any number of requests from teachers and principals for information on the effectiveness of the series that they can use as "ammunition" in urging their superiors to make equipment and space available for its use.

These warm expressions of support from the grassroots consumer are highly gratifying and encouraging. However, they would be of little avail if the series failed to meet one further market test: to achieve a favorable cost-to-benefits ratio. The U.S. Government clearly considers the series a good investment. Reflecting on the project, Terrel H. Bell, former U.S. Commissioner of Education, declared: "Children who can scarcely talk are on a first-name basis with the characters in such established TV favorites as *Sesame Street* and *The Electric Company* . . . These programs are two of the best things the Office of Education ever invested in."

To establish a sound case in terms of costs and benefits, it is necessary to know two things in addition to the cost of the series: the number who benefit, and the amount of benefit. We turn now to a brief review of data on the extent of *The Electric Company's* reach and its educational impact.

Documenting the Effectiveness of The Electric Company

One of the questions most frequently asked about *The Electric Company* comes from those who have the general impression that it is an effective and successful reading supplement, but want to know in terms they can grasp just how effective it really is. There are two parts to the answer: one has to do with achievement-producing impact, the other with extent of utilization, particularly in-school utilization. Both were assessed in the early years of the series by independent research organizations. Major studies of achievements produced in school among viewing as contrasted with non-viewing children were carried out by Educational Testing Service (ETS) of Princeton, New Jersey during each of the first two seasons. ETS tested a total of 8,363 children from grades one through four, some in Youngstown, Ohio, and some in Fresno, California, using a 123-item test battery designed expressly to measure progress in the 19 reading skills treated in the series.

The second type of research consisted of nationwide surveys of the number of schools using the series, the number of pupils regularly viewing it in schools, and the attitudes and opinions of teachers toward it. These surveys were carried out during each of the first two broadcast seasons jointly by Florida State University and Research Triangle Institute of North Carolina.

Only the highlights of these achievement and survey studies will be reviewed here. Full technical reports are available to anyone interested in additional detail, both through the ERIC system and, in limited quantities, from Children's Television Workshop.

The research design used to evaluate the achievement-producing impact of the series is basically straightforward. ETS established matched pairs of classrooms on the basis of the average scores of those classrooms on standardized reading tests, and then randomly designated one classroom from each pair to view each day for six months, and the other to serve as a non-viewing control. Pretests and posttests were given to all children in the experiment, including both viewers and non-viewers. For the second season of the experiment, conditions were so organized as to yield the following four types of classrooms: (1) viewers of both years one and two; (2) viewers of year one who did not view year two: (3) non-viewers of year one who viewed year two; and (4) viewers of neither year one nor year two. Among the advantages of this design is the opportunity to evaluate two consecutive years of viewing relative to non-viewing,

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and the opportunity to look at the extent to which gains found at the end of the first season for viewers over non-viewers carried over into the subsequent school year.

Table I shows for season one, for each of the 19 reading sub-goals, the pretest scores for all the children in the experiment, the gains made by non-viewers and the additional gains made by viewers. For 17 of the 19 sub-goal areas, the viewers made significantly greater reading progress than the non-viewers.

TABLE I

***The Electric Company*: Viewer Gains**

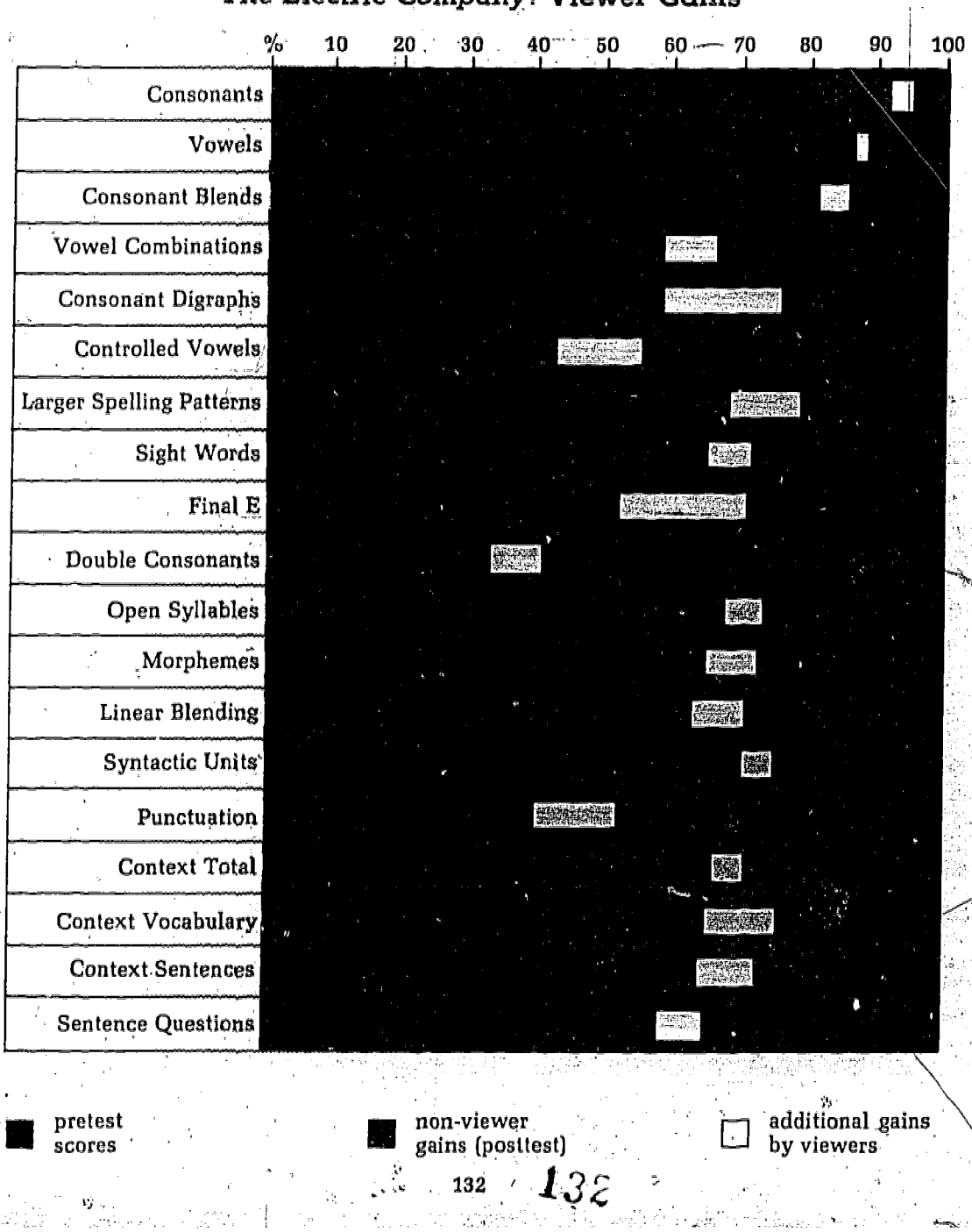

Table II, based on findings by Educational Testing Service (ETS), details areas where viewing classes scored significantly higher than non-viewing classes in Fresno, California and Youngstown, Ohio. Included in the second-grade study were "target" students who saw the show regularly and scored in the lower half according to national reading norms, and "non-target" students reading at or above grade level. Third and fourth grade "target" students were those scoring in the lowest quarter, again using the national norms.

A definite pattern favoring viewers emerges in the 123-question test covering the 19 curriculum areas included in the experimental series' first season. Greatest gains were made by second graders who were rated as poor readers, and by first-grade classes. All four grades showed some progress as a result of viewing the show.

TABLE II

How *The Electric Company* Viewers Fared: Pattern of Achievement

Test and Subtests	Number of Items	Grade One: (All Target) Total		Grade Two: Target		Grade Two: Non-Target		Grade Three: Target		Grade Three: Non-Target		Grade Four: Target		Grade Four: Non-Target	
		Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown
Matching Words	8		●	●							●				●
Blending Total	28	●	●	●		●						●	●		
Consonants	13	●	●	●								●			
Vowels	6	●	●			○							●	●	●
Consonant Blends	9		●	●	●				●						
Chunking Total	28	●	●	●		●		●	●			●		●	●
Vowel Combinations	9	●	●	●			●				●	●	●		●
Consonant Digraphs	6	●	●	●	●	●		●	●				●		
Controlled Vowels	4			●	●										
Larger Spelling Patterns	5	●	●	●					●				●	●	●
Sight Words	4		●	●	●							●	●		●
Scanning Total	14	●	●	●	●			●			●	●	●	●	●
Final E	6	●	●	●	●	●		●				●		●	●
Double Consonants	4		●	●	●						●		●	●	●
Open Syllables	4		●	●								●		●	
Reading for Meaning Total	45	●	●	●	●		●	●		●	●				●
Morphemes	10		●	●	●								○		●
Linear Blending	6	●	●	●	●			●					○		
Syntactic Units	7		●	●	●										
Punctuation	5	●	●	●	●							●	●	●	●
Context Total	9		●												
Context Vocabulary	4	●	●	●	●			●							○
Context Sentences	4	●	●	●	●						●				●
Sentence Questions	8		●	●	●		●		●		●				
Grand Total	123	●	●	●	●	●	●	●	●	●	●	●		●	●

The second-season results largely reaffirmed those for the first, with two interesting additions. First it was found that the gains for two-year viewers over non-viewers were not markedly greater than those for one-year viewers over non-viewers. Thus the extent of the series' impact tends to occur in a single season's viewing. Secondly, the significant advantage for first-year viewers over non-viewers was found to be still present one full year later (neither group had viewed in season two). The gains from one season viewing are not merely short-term gains but hold up over a longer term without any further viewing.

The Lincoln Heights Story

Probably the most powerful example of the effectiveness of *The Electric Company* when adapted through the use of an innovative and flexible ITV system came to our attention in 1972. In 1969, in the Lincoln Heights Ohio School District, one of the nation's larger all-black communities, 75 per cent of the pupils were reading well below national reading achievement levels. Some were two years behind their peers in other school districts. Today, with the help of *The Electric Company*, the district has reversed a downward curve in reading achievement among second- and third-grade students.

In 1972, at the suggestion of WCET, Cincinnati's public television station, an experimental closed-circuit videotape system was installed at the Lincoln Heights Elementary School. Since the system can be accessed by teachers at any time, it offers them flexibility in fitting the reading series into their classroom plans.

The six-channel videotape system, with one channel devoted entirely to *The Electric Company*, is fed into 23-inch color monitors in each classroom. Six headsets are available in each room for special instruction. A central operator tapes a new *The Electric Company* program off the air daily and repeats it throughout the school day.

A year after use began, second- and third-grade children attained reading achievement scores surpassing those of their non-viewing peers of earlier school years. In 1974 new tests of the same pupils found that the effectiveness of the videotape system and *The Electric Company* had continued. In fact, in some instances, learning and retention were even stronger than expected, particularly for the 1972-1973 second graders.

After viewing *The Electric Company* on the system during the 1972-1973 school year, second graders tested that spring averaged five months ahead of their non-viewing counterparts of the previous year in vocabulary skills and six months ahead in reading comprehension. Third-grade scores were nearly as impressive—five months and three months ahead, respectively. Second grade is considered *The Electric Company's* primary audience and is the level experts consider crucial in heading off early reading problems. By the school year 1974-75, the third year of the project, the first, second and third-grades were reading at or above national norms.

Teachers at the school told us that, while children often have trouble learning a particular skill from a textbook or from the blackboard, they understand it immediately when it is demonstrated on *The Electric Company*. Children's ability to remember segments from the series was described as uncanny; teachers related the frequent experience of teaching a skill to students when they would recall having seen a segment from the series on that same skill weeks before. The school librarian also reported that circulation and interest in reading books had increased, as one effect of the series.

Schools using *The Electric Company* cannot necessarily expect an increment in the tested reading levels of their pupils. It all depends on how they use it.

Some schools use *The Electric Company* to replace portions of their previously existing reading programs, keeping their aspirations for the end-of-the-year reading achievement of their pupils constant. Others use the series as an addition to their existing reading programs, and see it as an opportunity to raise their pupils' end-of-year reading performance. Anyone who expects *The Electric Company* to elevate the reading level of children in this country must realize that control in this respect is entirely in the hands of the schools.

If the Office of Education, as the backer most directly concerned with children and reading, wants an increment in the overall national reading performance to result from *The Electric Company*, it must somehow see to it that schools themselves share in that aspiration and take the necessary steps. As important as improvement in reading is acknowledged to be, many schools are re-

luctant to find the extra half-hour required each day to use the series to achieve results over and above those gained from their regular reading programs.

Fortunately, many schools do attempt to use it to increase their pupils' over-all levels. Indirect evidence of this showed up recently in a report from the National Assessment of Educational Progress (NAEP), a private organization funded by The Education Commission of the States to track the progress of the nation's school children in various subject areas, including reading. They regularly test nine-year-olds, and recently noted improved performance for this group on several reading indicators. Dr. Roger Farr of Indiana University, one of six reading specialists who evaluated the results of the survey for the National Assessment, hypothesized that "after being exposed to *Sesame Street* and other good television shows, kids are coming to school able to do more."

The national study is consistent with one taken by New York's State Education Department, which reported last year that third graders, both in New York City public schools and in other large city school systems in the state, had registered "substantially improved" reading achievement scores.

The 1976-1977 broadcast season of *The Electric Company* was its last season of new production before going into a period of at least three years of repeats. The question of what happens next has not yet been taken up nor resolved. We, including all those who have supported *The Electric Company* either directly or indirectly, have created an instructional television program that was well-tailored and remarkably well-accepted in the school market. Its value as home entertainment is sure to dip quickly downward as it is shown in identical form season after season.

It is less clear what the effect of re-runs will be in the school marketplace. Our own continuing promotional efforts, along with those of the stations, will help to offset sagging enthusiasm to some extent, as will the rights for schools to tape the shows off the air for delayed replay.

To be certain about patterns and trends in school utilization, we are undertaking in this final season the third in our series of nationwide school-use surveys. This year's survey is particularly timely, for it will provide an important benchmark against which to gauge the effects of reruns in future years.

An effective television approach to reading now exists. Its responsiveness to the needs of the schools, its popularity with teachers and pupils, and its instructional impact are all well-established. Its record in the annals of instructional television is unmatched. Reading will never in the foreseeable future be less of a national priority, nor will the schools have less need for help. It is not something that, tackled once, tends to remain solved from that time forward. We must all ask ourselves over the next few years what steps are to be taken to sustain or surpass the record achieved and service provided by *The Electric Company*. Will its market, the teachers and children, continue to be well-served?

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Investment In ITV: Hunt for the Wiser Answer

by Robert Carlisle

The time has come, concerned ones, said,
To talk of many things;
Of costs, and sets, and classroom gains—
Before the legislator rings.

For "concerned ones," read many individuals in or close to the ITV side of public broadcasting. Include with them O. Leonard Press, Executive Director of Kentucky Educational Television. In December 1976 he wrote:

I think the questions posed by the Legislature are getting sharper. They're becoming more familiar with the programs.

Robert Fox, Associate Executive Director of the Agency for Instructional Television (AIT), has seen this change coming, too. AIT, he finds, has become visible. That is long overdue. But now top-level decision-makers are looking more closely at it.

In Fall 1976, George L. Hall, then Director of the Virginia Public Telecommunications Council, summarized problem and solution:

Legislators who control investments in social services are becoming much cannier in applying accountability to the investments they make. TV is a discrete, identifiable activity . . . and legislators are beginning to call out for very specific information to indicate what yields they've gotten from the investment.

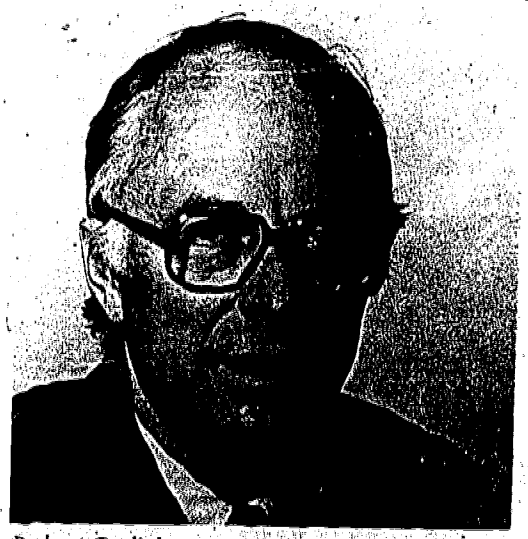
The educational technology community hasn't been very careful to collect those data needed. We need to improve the traffic on both sides: the questions need to be sensible, and the answers need to be appropriate.

Hall and others—including AIT's Executive Director, Edwin Cohen, and CTW's Vice President for Research, Dr. Edward Palmer—decided in 1976 to seek a common pursuit of remedies. Educational broadcasters, they agreed, must sharpen up the questions they ask of themselves, questions derived from up-to-date business practice. Perhaps the concerned ones could help standardize lines of inquiry. Then, persistent, intelligent digging could begin to produce the wiser answers that those who vote on ITV expenditures seem likely to demand with ever-greater intensity. In short, as these men of concern saw it, the days of complacency—or was it blissful ignorance?—have ended. The time has come to talk of what the citizen is really getting for his tax dollar spent on ITV.

It happens that Virginia, through its Public Telecommunications Council (VPTC), has become a proving ground for the kind of analysis now taking shape. As a combined bridge and insulator between the Commonwealth's Department of Education and public TV's instructional side, it has set about asking sometimes painful questions of itself and of the five PTV licensees in Virginia. Its aim, rather than mere harrassment, is to build the most effective ITV that sophisticated planning will allow. Its procedures merit attention here; they could be a worthy model for other states equally concerned about stepping up ITV's impact.

On Confining Quicksilver

One general question has to be addressed before looking at what the council in Vir-



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ginia does, asks, and thinks others might ask. The question is this: how analytical can you get when it comes to the intangibles of education?

One can caliper some of education (and ITV) some of the time—but the stalwart investigator had better have a well-chiselled set of objectives in front of him. He should also be humanistic enough to recognize that not all of social man's civilizing acts can be captured between the markings of a slide rule.

Restating the issue, can computer-era questions be asked about the cost effectiveness of education? AIT's Research Director Saul Rockman says no. "We've been asking them for years," he asserts, "and no one's come up with anything. Neither legislators nor TV people are finding useful the information they're getting on enrollments, teachers' guides sold, requests for previews." VPTC's George Hall tends to agree. He holds that "we haven't been able to relate the cost to the effect," then adds this prescription:

All you can do is for reasonable men to sit down and decide what they believe to be efficient. There's no chemical test that I've ever been persuaded of.

Combine with this the perceptions of a relative newcomer to PTV, Paul B. Firstenberg, who joined CTW in 1976 as executive vice president. After four years in Princeton's financial vice presidency, he came to CTW with the modern fiscal planner's outlook and jargon. If analysis is to work, he had seen, you must "know precisely what objective you're trying to measure, and that it lends itself to quantifiable analysis." He had also arrived at a crucial conclusion:

Whether we in education turn people on is something I don't think is measurable. But in the end that's probably the guts of our mission.

This is a view that George Hall of Virginia could have verbalized, too. This does not imply, however, that Hall, for one, throws up his hands over the difficulties of quantifying education. He recognizes that the analyst will "have to set arbitrary measures and have a degree of latitude." Yes, that task *will* be hard. But—and here he speaks for others of concern who work on public TV's educational side—he adds this:

We must make a reasonable beginning. I'm unforgiving of those who would say, "It's too complicated even to begin." It's extremely complicated, but we can begin.

Setting for Genesis

In Virginia, Book I on the development of ETV ended five years ago. Book II began with the arrival of George Hall in December 1972.

Late the previous year, the existing advisory council decided it had gone as far as it could on building a system of electronic instruction. Its members saw, however, that further work would be needed. So they asked the Legislature to reorder them into a Virginia Public Telecommunications Council. That would call for the writing of a master plan to spell out its duties.

George Hall came down in late 1972 to devise that plan. It was not a wholly unique challenge; he had co-authored a similar plan for Alaska. In Virginia, he was to have wide latitude. He could keep the existing capital facilities program going; he could set up a program for buying instructional services from the public TV licensees. Hearings began in September 1973.

Virginia, it turned out, seemed to be five states in one, with one million school children. The seven transmitters of the five PTV licensees reached about two-thirds of the state. At best, they would only reach 85 per cent, due in part to a U.S. government-mandated blackout in Bath and Highland Counties.[1] For one, Richmond's elementary schools were using the Lippencott reading program—hence, very little ITV for them.

In due course, Hall found a "shocking naivete" about the various costs in teaching by TV. The schools "rarely asked" about, say, the expenses entailed in using *The Electric Company*, or about relative charges for TV sets, antenna systems, and other reception gear.

Thereafter, Hall wrote much of the two-volume *Master State Plan for Public Telecommunications*. Volume I was adopted October 2, 1973; Volume II, on April 2, 1974. The Governor formally instituted the plan in May 1974. It went into effect that July 1. VPTC—the Virginia Public Telecommunications Council—was launched.

What at root level was the rationale be-

[1] The counties fall into part of the "National Radio Quiet Zone," site of a number of government communications installations.

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hind it? Richard L. Parker, General Manager of WVPT, Harrisonburg, well remembers:

There was a great concern about the ability to survive on the part of the public TV stations, unless there was some change. Prior to the council, each station depended on the support of individual school divisions. That fluctuated wildly from year to year, depending on the amount of funds available locally.

With the advent of VPTC, the Russian roulette became, for the most part, just a bad memory. A new stability had been ordered. Further, the state now had a way of getting the answers on ITV cost factors that increasingly it was going to need.

Formula and Procedure: A Prologue

The VPTC will be empowered to enter into annual, or shorter term, contractual relationships with public, non-commercial telecommunications entities and organizations for the purpose of obtaining for one or more of the organs of Commonwealth government . . . specified telecommunications services, capacities and products. (These might include such contractable items as broadcast transmission time, videocassette programs, film materials, TV receiver repairs, TV antenna installations, testing and research operations and electromagnetic tape and duplication.)—Master State Plan, part I, p. 17.

Basically, five functions define the council. It *contracts* with the five PTV licensees for ITV services. It *monitors* those services. It *works* with the Department of Education. It *studies* ITV activity and alternatives. It *stimulates* telecommunicated education. Much of what VPTC does is codified in the Master Plan's 195 pages—except for a superordinate requirement: effective human relationships throughout a chain that reaches from the summit level of the Secretary of Education to TV-served classrooms in all corners of the Commonwealth. At no point should one forget the importance of these hardly quantifiable human connections in reviewing some of VPTC's major ITV work.

1. *As contractor with public TV stations:*

In the past fiscal year, Virginia had a total budget of some $4 million for electronic education. Some $2.5 million went into contracts with the five licensees. The balance paid for TV sets for schools, master antenna systems, and items such as cassette duplicates. Until recently state regulations required that each school division spend one dollar a year per child on TV reception and playback equipment. Now the expenditure is voluntary. A typical VPTC contract with a licensee covers a full year's ITV tasks and runs to ten pages, with ten more sheets of schedules.

The agreement with one of the Virginia licensees allocated $731,000 this year, or 55 per cent of the gross revenues for the operations involved. About 38 per cent represents $130,000 in depreciation and $150,250 for "overhead and growth."

Across the board, VPTC adds 40 cents for every $1 of station service to the schools. That 40 per cent is for depreciation and overhead. Hall believes the council *must* pay those costs, dictated by business-world practice.

Another sizeable item—it runs to almost 20 per cent of the $2.5 million for all licensees—covers broadcast transmission of ITV. For one of the licensees involved it meant 2,468 hours of air time in 1976-77 (1,280 on one transmitter, 1,188 on a second). The contract schedule has an important qualifier. The air time is to be "used for the transmission of specified programs . . . consistent with RSCPC recommendations approved and adjusted by the State Department of Education."

That item "RSCPC" calls for an explanation. The initials stand for Regional Schools Contract Planning Committee. These committees—one per licensee—are called "RISKIPS." They were set up by the Master Plan. Hall explains their makeup and role as follows.

The ETV stations form the committee from each school division in the region. The committee puts down on paper the services its members wish to buy on contract from the station. The council then takes all those specifications and to the degree that our money will allow, we buy those services.

So the RISKIP is essential to decision-making on ITV activity. However, "in too many cases," recalls Hall, "football coaches and people with time to spare" were put on them. To cure that, it has been suggested that the regulations be amended to provide that members of each RISKIP will be "accredited curriculum specialists."

To broaden the RISKIPs' horizon, the DOE funnels information to them—perhaps on ITV productions available elsewhere—through an assistant supervisor of the DOE Division of Telecommunications who sits on the committee.

In practice, estimates of transmission hours for an entire year can be inexact. A licensee could "give" the council more hours than the contract called for. Last year, in fact, VPTC received $42,000 more in services than had been contracted for. Says Hall:

We should try to be as accurate as we can in making forecasts of hours needed. We don't know whether it's a contribution or just inefficiency. We want to get rid of that, particularly in production.

Once a RISKIP's list of needs has been completed, the superintendent of each school district in it has to review the specifics and certify that he understands what's being asked for.

One of VPTC's contracts allocated $46,580 for studio production. Academic requirements for this work would come from DOE and/or the RISKIP. In all, seven series were to be produced by the licensee—120 program units. Others could be acquired from outside. For that the contracting station was allotted $19,609. Two of the acquisitions: *Sesame Street* and *The Electric Company*. Other amounts stipulated were for mobile productions ($18,000), film production ($11,000), and an item labelled "Design Services."

Under this schedule, the public TV corporation was to get $163,617 for 20,000 man hours—plus facilities, supplies, and services—for the "expert design, planning, application, evaluation, and execution of the . . . programs to be produced, transmitted or distributed, and the printed support elements. . . ."

For illustration, at WVPT in Harrisonburg, Edwin Kaufman works full time as Instructional Director. He answers to Richard Parker, the General Manager. Yet all of Kaufman's salary is covered by the design-service payment from VPTC. An old advertising man, Hall describes Kaukman as "our account executive" at WVPT.

Another contract increment for one of the five licensees in Virginia allows $20,800 for 2,080 man hours of so-called "Technical Services." That translates into one man's working full time on helping school divisions overcome technical problems or on improving signal delivery to school rooms.

For example, in Richmond at WCVE engineer Hardy Sydner rides the range, reporting to the Director of Instruction. Explains Hall, "Most schools do not have technically qualified people on staff and are at the mercy of technical suppliers." Sydner would try to prevent that. He also typifies an "ecumenical spirit": if a school served by WCVE, wants to pick up ITV from Harrisonburg, then Sydner would put in an antenna for that purpose. "Our view," comments Hall, "is that a school should be encouraged to use as many choices as there are physically available."

A new, subtle wrinkle has been added to this contracting process. Originally, ETV funds were appropriated by the Legislature to VPTC. The council began to see that this method did not build much commitment within DOE. So, the council "insisted" the funds go to DOE, with the council remaining the negotiating and contracting agency. Net result: "a dramatic change in the degree of attention and concern" at DOE. Hall elaborates:

The Legislature will hold the school system to blame if programs are undertaken without proper objectivization or any evaluation. We can compel DOE to spend the money and how they will spend it, but as to objectivization and evaluation, we can only urge.

DOE must meet its obligations under our contract. They can't pull back. The Legislature will hold us accountable for financial management, but it will hold DOE accountable for academic management.

2. *VPTC's role in monitoring the contracts:*

"Before the council started work," says Hall, there was "no economic monitoring at all of the couple of million being put into ITV each year." That has changed. VPTC now monitors what the licensees do under the contract. And council payments are tied to licensee performance reports. As the year starts, each licensee gets one-half of the total coming to it under the contract. The balance is doled out in 12 monthly payments. To get the monthly increment, the stations have to send VPTC

a statement of activities by the 5th of the month. "If they don't," says a VPTC staff member, "they don't get paid."

These new procedures amount to a big change for the licensees. Richard Parker of Harrisonburg put this in perspective. "Before," he explained, "we had no obligation like this. Now the reporting obligation has stepped up tremendously. The SOP's are at least a mild annoyance." In spite of the paper blizzard, however, the situation is better than the old days. Said Parker:

My budget planning, my ability to plan programs and to support them, is far easier under this situation than it was. Previously, it was impossible to project into next year. You had no idea whether the individual school divisions would support you or not.

3. *VPTC's work with the Department of Education:*

One of the most critical links in Virginia's ITV power grid involves the relationship between VPTC and the DOE's Division of Telecommunication. In the Fall of 1976, there seemed to be relaxed commence between the two. Luckily, both have space in Richmond's Ninth Street Office Building; this eases contact and reduces we-they habits.

VPTC's main DOE contact is Mrs. Mary Elizabeth Dalton, Supervisor of the Division and onetime school supervisor and ITV coordinator in Hopewell. Mrs. Dalton divides the DOE-VPTC workload this way:

Our responsibility is for ITV, for programs broadcast, for evaluation of the total field of ITV. We relate to the council only in that it negotiates the contracts with the five entities and monitors them to make sure we get the services for which we pay. Program content, production, acquisition—they're the responsibility of DOE.

Both council and DOE have lines to the licensees. Mrs. Dalton's points of contact: the five assistant supervisors from her staff, one assigned to each station. The individual works with the licensee's Director of Instruction, and sits as a member of the RISKIP for that station.

The interface between council and DOE has another facet. It reflects part of the department's broad mandates in education—in this context, to be concerned about the ultimate effects of contract payments to licensees. Here, George Hall is compromising, but hardly neutralized. He knows his council, lacking statutory authority in education, cannot study impact on its own. He knows, too, there are other paths up John Bunyan's hill:

We think we have the right to say to DOE that the Governor's office cannot understand the value of these investments unless DOE shows us data on psychometric results. Without these figures, we cannot make a cost benefit analysis. We are urging the DOE to do this. The time could come when we would say to DOE that we are going to advise the General Assembly to provide no funds for these contracts until this is done.

As a practice, Hall prefers persuasion to compulsion. Hence, because there is no bar against it, "we come in at any level we need to, to get the job done." That has meant "working directly with" Board of Education members—with its former president (to stimulate research); with another board member (on the videocassette study, see below); and also with the State Superintendent and his Director of Research.

Hall has even carried his concern for more thorough research to Virginia's Secretary of Education, Robert Ramsey. Said Hall of Ramsey's interest: "He is doing what he can to induce responsible, sensible behavior in the education community with regard to these investments."

As one example, there is the matter of CTW's extensive research on *The Electric Company*. George Hall has seen a decided reluctance within DOE to accept this out-of-state research and its meaning to education in Virginia. With that in the background, he commented:

I would like to see—and so would the former board president—the State board and DOE look at the evidence on that series. Simply to put on blinders about it is not a satisfactory response. We're investing four million in tax dollars on ITV. I think it's a reasonable thing that there should be some performance monitoring.

VPTC also thought that DOE ought to get out of the ITV production business. "It was economically hurtful to the stations," Hall explained, "and it wasn't cost-effective for the state to do it." So, VPTC now buys production through its licensee contracts; what

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series will be produced is decided by DOE and/or RISKIPS.

4. *VPTC's study of ITV activity:*

Council studies have been tied to its monitoring function. They have also dealt with growth lines and new directions for instructional TV.

As a start, George Hall knows they have to count sets and ITV paraphernalia, even though, he adds, "I'm tired of that being the *only* area for questioning." Back in 1973 VPTC had found one set in use for 100 pupils, and one cassette player for 600; it wishes the ratios were 1:25 and 1:100. The council can also study other aspects:

- Working from its sheet showing unit costs at each of the PTV stations, it could do comparisons, with the aim of raising efficiency.
- Every three years, the council analyzes "general circulation," or use, of ITV series. This supplements annual studies done by each station. These data can help the council decide "how few systems can use a series and have it be cost-effective." It is one area where, according to Hall, "we're going to insist on some improvement."
- Results of these studies filter back to the RISKIPS—"we want them to make decisions off data, not off raw emotions," explains Hall.
- Recently a teacher survey sought to find out whether teachers have "easy access" to different items of equipment. VPTC actually *knows* which schools have what equipment, so this survey has been concerned with teachers' perceptions. Said Hall: "One who doesn't think she has the equipment for all practical purposes doesn't have it."
- In another respect, some VPTC staff members have become convinced that VPTC "really needs to look into the question of how long it takes to produce programs. It's a large gray area now."

Reflecting the council's interest in the different ways of getting ITV's work done, there was its late-1975 analysis of "Alternative Instructional Television Delivery Methods." A Board of Education member had asked what it would cost to replace the entire open-circuit ITV apparatus with local videocassette use. As the figures eventually showed, Virginia's airborne ITV has been a good bargain.

Two questions were to be studied. One had to do with expanding cassette service to reach all schools incapable of picking up broadcast ITV. The second speculated on serving all the schools with cassettes, i.e., shutting down all broadcasts. (The council did *not* add in the costs of equipping schools with VTRs.)

To pay for a *Mixed Broadcast & Videotape* system reaching the 15 per cent of the schools unable to get ITV, the council estimated a sustained annual cost of $3,787,000. For *Videotape-Only*, distinct problems of mass would be faced. One item: an elementary-school "package" of cassette tapes would cover 42 feet of shelf and weigh 600 pounds. Once the transfer to cassette-only had been made, VPTC figured it would run *over $10 million a year* to keep the system going statewide.

5. *VPTC as a catalyst in educational telecommunications:*

George Hall put this function into clear terms. "Our job is to get things to happen," he said, "not simply to scold people for errors. We can't get into the business of assessing blame. We are to stimulate appropriate activity." Some examples:

- VPTC actively supports the use of its dollars to help the stations provide a balanced broadcast service of public as well as instructional programming. The council director believes that "if a station develops its public programming identity, the school service also grows and expands."
- Hall has long been concerned about "taking ITV to the public." Like many, he has campaigned to initiate an Awareness Campaign for ITV. Beyond simply taking the message to superintendents and the "power structure," Hall wants to get "parents to reinforce the demand for technology in the schools."
- On its own turf, the council does what it can to assure that the "influential superintendents" are involved and that they know what the potential of ITV is. VPTC tries to work with administrators such as the one who wants to

be noticed. "If you give him attention," says Hall, "he's likely to do you great service. But if you try to dispute or ignore him, whew!"

- VPTC hopes to raise general efficiency by setting up an "information system for decision-making." Comments Hall: "We should not make the decisions ourselves. But when we see one that's poor, we feel we have the right to blow the whistle."
- On the technical side, the council has been trying to move the schools toward having their own individually wired systems. "Several hundred" have installed these in the past few years.

These paragraphs only dent the surface of what the Virginia Public Telecommunications Council does—more exactly, what three staff members in Virginia do. What they do—what questions they ask—could very well be exported to other regions equally committed to making ITV operations both stable and dynamic.

A Checklist for Questioners

A natural tour guide, George Hall can tell you why Thomas Jefferson omitted front stairs on Richmond's Capitol Building, or about Patrick Henry's legion of descendants. It is the VPTC Director's conviction that public broadcasters should be *just* as well-informed about the uses of their franchise for instructional television. Along with others elsewhere, he has started to pose new-fangled questions, going beyond numbers of students in TV-using classes. The answers could hurt. They may show that someone has goofed, or that ITV is merely superfluous. But, adds Hall, "the system needs the answers anyway."

Some of the new questions on the minds of VPTC people and other practitioners may be useful tools for explorers at other outposts. They are offered here, with sidebar comments for the sake of those still fretful about the modern analytical method.

1. Is an adequate management system in place, one relating properly and thoroughly with all involved elements?

This is obligatory, to Hall, "so that when you complete one part of the process, you move in an orderly way to the next part." As one model, the council's role is to: *provide the management connective so the DOE, the local schools, the station people, the production people are brought into proper relationship with each other.*

Because VPTC does not directly manage licensee activity, it is its director's hope that "we should be objective enough to see breakdowns in the process."

Is a state council the only formula? Obviously not. This management function can be embodied elsewhere, just as long as the entity has enough weight to get needed answers and to "see that all decision points are operative."

2. What is the public broadcaster's relationship to the education community served by the station?

That relationship could include many contact points. At WNVT, Annandale, Virginia Director of School Services Hugh Greene conducts needs assessments among the teachers, a job he performs "exceptionally well," according to Hall. Greene, who is paid from the VPTC contract, then advises the Commonwealth on the services needed in the schools. He can bring a "fresher look" to this because he has "less personal investment" than a teacher or a DOE employee might have.

3. Is there a current inventory of equipment at the schools?

For its part, VPTC has a computer listing of "virtually every" school in the state. This inventory shows what the broadcast signal is like at a given site, what its antenna system is, whether an in-house distribution routing exists, how many classrooms are wired, and that old faithful: how many sets does the school have?

Armed with these data, VPTC has taken a natural, second step. That is to see why some schools and/or personnel have "a laggard attitude about accessibility of the equipment."

4. In what way does the broadcaster monitor ITV activity?

If a station or an ITV agency plans a $100,000 one-time-only instructional project, then some planning-stage questions have to be met head-on. Are the objectives defined? Is the target audience clear? What is the smallest number of students that could be justified as recipient of the materials? Are the indicated delivery means in place? This

process, these questions, would be "pre-monitoring." Once underway, the project could be checked in matters of cost and actual usage. (Certain of these questions warrant more attention hereafter.)

5. Have the project's behavioral objectives been set?

VPTC believes it important to focus producers' attention on the objectives of particular ITV projects. At the council, it falls to Joel Fleming to get the RISKIPs to write down objectives for every ITV venture. The council does not judge these objectives. It merely wants them itemized as part of the design process. Up until now, VPTC has not required statements of objectives on series acquired from outside sources (AIT, GPN). But this may well happen. Hall sees a time when VPTC will insist that objectives be stipulated for these out-of-state materials, "and attested to as being appropriate."

6. Have critical minima been determined?

Once these levels have been set, then producer, broadcaster, and agency can find out more readily whether a project is a winner, or an also-ran. Minimums could be affixed for objectives. Or they might apply to audience numbers. Hall explains his concept on the latter: "We need to know what the expected numbers are at the start, to determine whether we can come anywhere close to hitting that target. If there were 6,000 to begin with and we reached 600, is that satisfactory?"

Another item under this umbrella of concern: how many school systems actually use an ITV series? If few do, the practitioner should check the minimum defined at the outset. The object is, of course, to decide in advance how few schools might use a series for it to be cost-effective.

A like inquiry might be directed at reception. If the broadcaster wants to reach 100 geographic points and only gets to 70, is that acceptable? What if he just reached 30?

Dropping below critical minima in important respects would be labelled failure, normally speaking. And here, Hall digs his heels in to defend some failure:

We've got to educate the political community to accept the fact that failure is part of the process. If we have none, then something's wrong.

I'd say that at least ten per cent of our budget could be tolerated for failure. You should be prepared to have 25 to 30 per cent failure each year in that the instruction simply doesn't work, or isn't used, or the students don't learn from it. We need to work toward some reasonable level for failure. The presumption is that every dollar we spend is going to be productive. That's not true. We need to be more precise about the failure rate, but not be frightened by it.

7. Are there alternatives to undertaking the project?

Suppose nothing were done. It is Hall's view that, at times, "entirely optional" projects are launched with no clues that something positive can happen from the investment—or that something negative would happen if the expenditure were not made. Before starting, there ought to be evidence that "improved performance or cost, or both" could stem from using technology.

VPTC's former chief recounts one Virginia RISKIP's decision to lease some Encyclopedia Britannica films:

These films were available in the state film library. At the most, it would have cost $1,000 to use them in standard classroom projection during the school year.

Instead, the RISKIP was "determined," says Hall, to lease the films from EBF and have them televised. It felt that TV presentation "would greatly enhance the value" of the films. So, committee members voted to spend some $20,000 in VPTC funding on the leases.

Aware of the RISKIP's determination, VPTC decided to let them go ahead, but then monitor the results carefully. "If the use of television is not significantly greater than the ordinary film use would have been," says Hall, "then we clearly will have wasted $20,000 in making these films available by broadcast."

8. What are the respective costs in operating the ITV system and in its output?

For itself, VPTC has worked hard at this phase. It has found out what things cost. But, as Hall adds, "whether they were worth it is a different question."

VPTC knows that monitoring should not cost more than it is worth. The council has budgeted somewhat less than $100,000 for this activity, believing it should be no more than ten to 15 per cent of the total budget.

One of the positive changes since 1974 has been an increasing commitment in many places to cost research. AIT, for one, did a cost comparison in October 1976 on uses of its *Inside/Out*, a textbook, educational film, and classroom teacher. The breakdown worked out this way:

Mode	Cost Per Student Hour of Instruction
Inside/Out	$ 00.008
Textbook	00.014
Educational Film (16 mm)	
Owned	00.072
Rented	00.200
Classroom Teacher	00.290

What is vital for the cost-concerned elsewhere is how AIT arrived at those figures. Take just two parts of the AIT figuring:

a. *Inside/Out* (30 fifteen-minute shows, or 7.5 hours)

[1] Series cost	$779,000*
[2] Total student audience: 3,125,000 x 5 *years*, or 15,625,000	15,625,000**
[3] Series cost per student:	00.050
[4] Cost per student hour:	00.0067
[5] Teacher manual cost per student hour (manual at $1.50 serves 150 students at one cent each)	00.0013
[6] Cost per student hour	00.008

b. Classroom Teacher:

Assume an average annual salary of $11,000 for 180 days, or 1,260 hours of teaching 30 students for a total of 37,800 student hours taught:

Cost per student hour: $00.290

* Includes design, development, production, teacher guides and some promotion. Does *not* include local transmission or film copies.

** This estimate was based mainly on AIT's data on teachers guide use over the first two years of the series' distribution.

People like AIT's Ed Cohen, George Hall of Virginia and Len Press of KET have computations like these to share and compare. Whether they are directly comparable remains to be determined.

9. Are the linkages of the design process properly managed?

Basically, this revolves around the working relationship between educator and broadcast craftsman. In Virginia, VPTC has made "good progress" with DOE in prevailing on administrators to "see the absolute necessity of setting the proper objectives." But evidently much diplomatic persuasion remains to be done. On one hand, there is a fear that education will become mechanized; on the other, administrators worry about political flak in the event of failure.

10. How extensive is the utilization system?

In Virginia, each of the five licensees has a person assigned to field coordination. Then, DOE has a representative at each station, as well. In all, ten people work full time at stimulating the widest uses of ITV product. Kentucky's KET has six individuals traverse the state; they wish they had 17.

In Virginia, the council notes informally the appearances that utilization specialists make at schools. Meanwhile, DOE checks up more subjectively, trying to assess the quality of workshops, or the tie between series use in a school division and utilization services.

VPTC has already seen that Virginia's ITV system needs more field personnel. From a survey it was clear that "where they are in evidence, we have a much better result." The council has noted further that it takes "very careful screening" to pick the right people for utilization. Some "better empirical specification" of skills needed is called for, Hall has concluded.

11. Is there adequate information about ITV use patterns in a state or a station area?

At least two questions join hands with this one. If the data are not available, why not? And if the existing data show that teachers are not using the materials when they are available, one might also ask: why not?

Along with other states, Virginia has had these concerns. To develop answers, it has ordered a statewide survey. The DOE engineered it; Joel Fleming of VPTC sat with the planners. The survey's aim: to verify the actual practices of teachers and thus gauge their attitudes about ITV.

12. Is there an adequate utilization effort beyond the boundaries of the school community?

Putting this in other terms, does the ITV staff's contact work reach those who ought to know about the station's, or state authority's ITV effort?

By his own description an Executive Department bureaucrat, George Hall cannot lobby with the Legislature. He must mend fences and seed the soil within the Executive office row. It is up to the station managers to press the case for ITV support among the legislative committees. And precisely because ITV has become more visible in recent time, the broad job of informing, justifying, and persuading has become both harder to do and more important. No longer do sandlot rules suffice.

13. Are all the links of the ITV system meshed and bearing suitable parts of the load?

Very probably any ITV system in the country could stand some self-appraisal on this count. The broadcaster might check internal views and relationships before scanning for the mote in the eyes of others. KET makes a very good start by treating every visitor to its Lexington facilities with high respect.

Recent experience in Virginia suggests how the linkage may become bruised. George Hall has tried to "kick" DOE into doing "the substantial research necessary to answer the questions of legislators." Yet, Hall valuing the relationship with them, takes care to maintain the smoothest possible diplomatic ties. Under the circumstances, occasional frustration would seem to be inevitable.

14. What has ITV done in the classroom?

To Saul Rockman of AIT, this is the very best question an inquiring legislator could ask. Undoubtedly it is the $6.4 million question. None could be more elusive.

What kind of answer might there be? Perhaps (in Rockman's view) it is no more nor less than that ITV has changed the classroom atmosphere, that the teacher is more "open," that the pupils are happier. "It's not easy to measure those," concedes Rockman. "But case studies can show how things change in a classroom."

If you can show the legislator how TV works in a classroom, Rockman is convinced, "he will love you." It is important for that individual to understand that TV in a classroom "isn't a teacher in front of a blackboard on film." Rather, it is a function the impact of which "is in changing the way children and teachers interact, making things better for them, and maybe even changing some test scores."

The questions defined here only begin to do justice to the concerns expressed by Saul Rockman, George Hall, and others.

Not a one would scoff at George Hall's observation that systematizing ITV for the sake of greater effectiveness is "extremely complicated" business. There is corroboration from overseas: Dr. A. W. Bates, the Open University's Senior Lecturer in Media Research Methods, wrote in October 1976 in much the same tone:

I only wish we could answer your question on the fiscal benefits and effectiveness of educational broadcasting. . . . We are looking at the cost-effectiveness of broadcasting and alternative A/V methods at the OU, but we are actually only beginning. . . .

Dr. Bates also had some searching articles to share, ones "which touch on the problem—or describe why it is such a difficult question. . . ."

To CTW Executive Vice President Paul Firstenberg, the time is more right than ever before to make the necessary appraisal. He explained in late 1976:

Now that all the stations have taken root in the soil, they can afford the luxury of beginning to think more systematically about their future. You can't talk to somebody about five years from now when he's thinking about how to survive next week. I think we're approaching that time in public broadcasting where people can begin to look at next year and maybe the year after. It makes sense to do so.

It is just as sensible, as George Hall said, to make a beginning. To that end, a group of concerned individuals in the public broadcasting community has agreed to come together in 1977. Meeting under the mantle of several national organizations in the field, they will have one major goal. It will be to spell out the questions—the research—that station, state agency, or national system might pursue systematically—before cost-conscious legislators ring.

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