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ABSTRACT

For the benefit of the Georgia State Board of Education, the day-to-day impact and actual problems of instructional television (ITV) as encountered in the state's classrooms has been explored and analyzed. Basic considerations were accomplishments to date and methods of improving the services. An overview of the ITV network is provided, and its utilization, cost effectiveness, and analysis described. Problems of inflexibility and curriculum integration of televised materials are discussed, and recommendations made for electronic shuttling, an exploratory school television system, and a regional planning system. Appendixes include a discussion of alternative media, a list of interview locations, and a review of research on learning from television. (SK)

FINAL REPORT

on

THE USE OF INSTRUCTIONAL TELEVISION IN GEORGIA

to

GEORGIA STATE BOARD OF EDUCATION

February 10, 1975

by

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PREFACE

The impact of television on our children is both a cliche, and a subject for constant debate. It is hardly a coincidence that the current vogue for crinoline and poke-bonnet, levis and beards, and an "old town" in every city dates from the origin of "Gunsmoke" and "Bonanza". Yet, the medium is neither inherently good or bad. The same medium presents "Benjamin Franklin", "I Love Lucy", "Beat the Clock", "Sesame Street", and "Henry V". There is little question that, largely because of television, the average child today is far more aware of science, contemporary problems, and the world than almost any child of the pre-television era.

The best of commercial television is formidable, and one must inevitably ask:

(1) Cannot the impact of this medium prove equally powerful in the classroom?

(2) Or are we prepared to abandon this impact entirely to the expediency and shifting winds of the commercial marketplace?

It is this potential that has led to the development of instructional television, and its comparatively few years have been characterized by a constant exploration of style, format, and content. As a result, the instructional programs today are far more skilled (and costly) than those of only a few years ago. Yet, ITV is still largely exploratory . . . and most study and experimentation has been devoted to the problems of material preparation, and their efficacy when used in a <u>controlled</u> environment.

In contrast to such exploration of potential benefit, we have attempted, in this study, to address the real day-to-day impact and problems of ITV as it is actually used in the classrooms of Georgia. Throughout the project, we have attempted to view ITV from the point-of-view of Georgia's school system, continually asking the questions:

(1) What are we trying to accomplish with this system?

(2) How might we improve this service?

Inevitably, many of our comments must be negative. Yet, television, we believe, is here to stay. In interviewing hundreds of teachers and administrators throughout the state, almost none suggested that it be abandoned. Almost all stressed its powerful potential to enrich the classroom environment, providing dramatizations of great literature, travel to any part of the world, a vivid picture of history, and a stimulating view of science . . . an enrichment and realism that no teacher can duplicate.

In terms of its potential ability to instantly deliver materials to classrooms throughout the state, its cost is low. At this time, having already established a basic distribution network, the cost of ITV lies largely in the preparation or acquisition of high quality materials. Thus, if ITV is adequately and effectively used, its cost is slight; if not, no cost is justifiable.

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. Georgia has pioneered in the development of ITV, as it has in the self-examination of this study. We hope that the insight and information from this project will prove positive and help to improve its service.

INTRODUCTION

THE PHILOSOPHY OF INSTRUCTIONAL TELEVISION

Before examining the use of television in the classroom, it is helpful to recognize two distinctly different points of view motivating the adoption of this or any instructional technology.

Central Education

In this extreme orientation toward instructional technology, the goal is to package the finest talents and the most carefully selected materials, and present them according to a carefully defined sequence, so as to take advantage of the most sophisticated educational techniques. The classroom teacher occupies a supporting role as the manager of this learning process (providing advice, counsel, and reinforcement). But the principal responsibility for the educational content lies in the packaged material, an approach which overall may be thought of as essentially behavioral.

Classroom Support

At the opposite extreme to this philosophy of centralized education, the individual teacher is an independent administrator of curriculum, following a basic plan, but interpreting and modifying both the content and presentation to suit the talent, needs, and personalities of individual students. In this view, television is simply one more audiovisual resource ... another tool in the bag of tricks. Instead of "packaged instruction", it is rather, an array of supporting material to enrich the classroom environment.

The truth, of course, lies somewhere between these extremes. We are not yet prepared for a machine-oriented classroom, nor is every teacher the talented individualist of the opposite view. However, the staff of this project believes, that in the real world, educational practice is closer to the latter view, and that a practical working system must be based upon acceptance, adoption, and service to the teacher in the classroom.

KEY ISSUES

Arguments for ITV

The development and adoption of instructional television has responded to three principal potentials.

Enrichment

Not only can television present the variety of materials already discussed, but because of its immediacy and credibility, it is the dominant medium with which both children and adults identify. Surveys and studies have consistently shown this belief in the reality of television. It is interesting to note that students whom we interviewed sometimes stress their identification with characters in the programs. They particularly like to see other students, and sometimes said that they like to see the television students make mistakes occasionally, too.

Upgrading

Television offers the potential to fill gaps in the curriculum or the teaching staff, providing, for example, a music teacher where none is available ... or adding to the quality of presentation of a science teacher who may not be up to date on such a fast-moving field. At the same time, television provides a medium for continuing education of teachers who might otherwise lose contact with academic developments.

Electronic Distribution

The cost of delivery of visual materials through electronic distribution drops constantly, while the costs of handling and distributing materials like film are rising. Furthermore, electronic distribution can reach instantly into additional classrooms and homes with a negligible increase in cost.

Arguments Against ITV

Despite its attractive potential, there are several significant arguments against its use.

Entertainment

Television is our dominant entertainment medium, and we have come to expect its lightning pace, together with a style that is set by competition for attention. The most successful educational television mimics this tempo and technique of entertainment. In carrying this into the classroom, will we lead the student to expect that all learning must be an entertaining process? Will we unwittingly reduce his tolerance for the effort and quiet of the real world?*

Passivity

Most of us, adults and children alike, spend a truly significant portion of our time absorbed in a passive fascination with the flickering image. Shall we then extend this lack of involvement and initiative still further, removing some of the interaction with the teacher and other students that is so important?

Cost

The virtues of television are purchased at the cost of a very substantial capital investment. Millions of dollars must be invested in buildings, transmitters, and studio facilities. These, in turn, must be multiplied many times by the costs of program production . . . a general characteristic of almost all such sophisticated instructional technology. Furthermore, the expensive tools of television are characterized by rapid obsolescence.

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* On the other hand, we believe that the joy of learning engendered by Sesame Street must carry over in the child's general attitude toward school and learning. The issue seems more a question of how and when to make the transition.

Altogether, such a system can only be justified on the basis of large audiences and extensive use. Its marginal costs are negligible, but its initial cost is truly substantial.

PROJECT STRATEGY

Throughout this project we have viewed instructional television primarily as a supporting service to the teachers and administrators, who basically establish and implement the curriculum. Whether or not one accepts this as an ideal, it seems clear that curriculum and educational practice are largely determined at this level, and that no centralized system can easily override this fact. Throughout the project it has been our intent to examine utilization by the school, and to develop a better understanding not only of how and when ITV is used, but the reasons for this pattern and ways in which the service might be improved. Thus, we laid out and followed a four-stage plan to examine the network, its activities, and above all its service to the schools.

I. Overview of the ITV Network

We began with a brief orientation, to familiarize our staff with the facilities, activities, and personnel of the Georgia educational television network.

II. Utilization

This central activity of the project involved extensive visits with school administrators and teachers throughout the state. Both through interviews and questionnaires, we collected information on their use and attitudes toward ITV.

III. Cost Effectiveness

We weighed the system costs, utilization, and trends in each area.

IV. Analysis.

Finally in the light of our observations we have debated the salient features and issues of ITV in Georgia and we have attempted to clarify these so that the Board will be more able to address the future development of this resource.

In order to investigate ITV's use and effectiveness, interview teams representing a combination of media and educational experience visited schools throughout the state, soliciting the opinions and insights of administrators, teachers, and students. The sites were chosen to bracket a wide range of experience and needs. It was not our intent to conduct an opinion poll or head count, but rather to develop insight into the use of ITV across as broad a spectrum as possible. Despite this, we have been impressed with a high degree of consistency in these opinions . . . regardless of the role of the person interviewed, or any other factor.

It is doubtful whether any interview sample could be defended as a particularly sound "representation" of an entire state. Yet this consistency, despite the range of persons whom we interviewed, leads us to have great confidence in the validity of our conclusions. We believe that if we had visited twice as many schools or ten times as many schools, there would be no change in our conclusions.

The Selection of Schools and Individuals

Our principal objective in selecting schools was to obtain as broad a representation as possible within the available resources. We selected 37 schools based upon criteria which included the type of area and geographical location.

The information for this selection was obtained from the Georgia School Directory, other public documents, and through discussions with Dr. Ronald Luckie, Georgia Department of Education. None of our selection criteria were based on the present use of ITV by a district or school. Specific schools were chosen independently by our team without influence from the school system, TV staff, or other possibly biased persons.

The study was designed to collect opinions and information regardless of whether TV was used to a considerable extent or very little. In strict terms, the study can only generalize its conclusions regarding the specific schools visited. On the other hand, the use of ITV in these schools proved remarkably consistent throughout the study. As a result, we believe that the study does provide a broad insight as well as specific subjective information.

Sampling Procedures and Rationale

Phase I

(A) In cooperation with Dr. Ronald Luckie, Director of Planning and Evaluation Services Division, the state was divided into several parts using these indicators.

(1) Social, Economic, and Political Conditions

(2) Size of school systems

(a) Urban - over 10,000

(b) Semi-urban - 2,500

(c) Semi-rural - 1,500

(d) Under 500

(3) City and county school systems located within the same locale

(4) A broad representation selected from across the state

(5) *Selection of at least one system from each congressional district (also school board member).

Phase II

(B) Systems were also selected on the basis of their location and the location of a station and/or a translator. Also taken into consideration were geographical conditions that would affect reception.

(C) Systems were also selected (including schools in that system) to include such factors as the number of blacks, inner city location, suburban location, and affluency of attendance area and the age of the school.

(D) Location of system in relation to transportation (include highways).

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* See Appendix A

ETV Stations owned by the Georgia Department of Education

WCLP-TV, Channel 18, Chatsworth
WJSP-TV, Channel 28, Columbus-Warm Springs
WDCO-TV, Channel 15, Cochran
WCES-TV, Channel 20, Augusta-Wrens
WACS-TV, Channel 25, Dawson
WABW-TV, Channel 14, Pelham
WVAN-TV, Channel 9, Savannah-Pembroke
WXGA-TV, Channel 8, Waycross

AFFILIATE STATIONS

WGTV, Channel 8, Athens, is licensed to the Georgia Board of Regents and is operated by the University of Georgia Center for Continuing Education. Channel 8 is an integral part of the ETV Network.

WETV, Channel 30, Atlanta, licensed to the Atlanta Board of Education and operated under the supervision of the Metropolitan School Development Council, airs a limited number of the Network's programs.

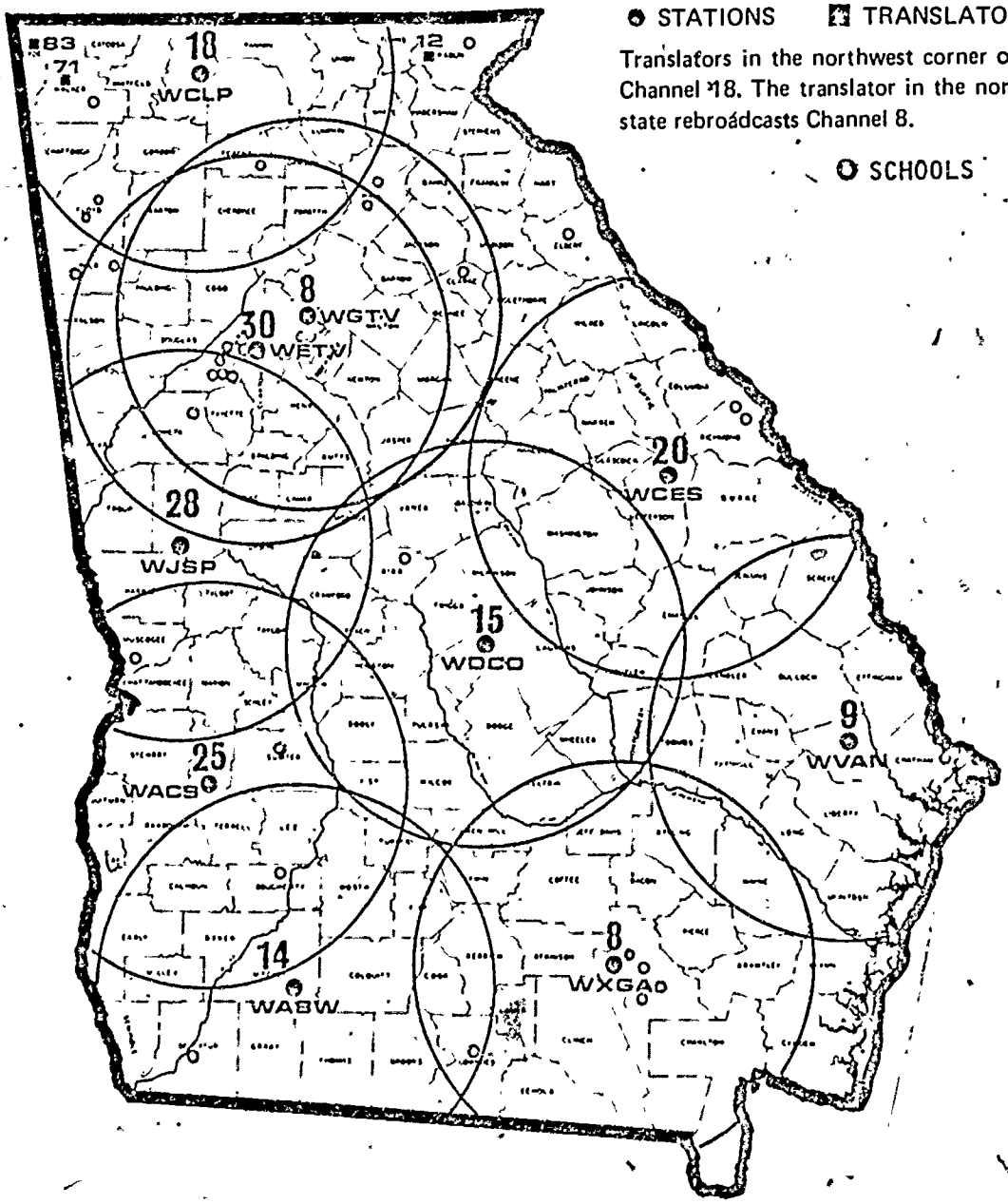

FIGURE 1. GEORGIA EDUCATIONAL TELEVISION NETWORK

Using this procedure, we selected 25 school systems scattered across the state. Then, in each system we selected particular schools to visit. (Figure 1) Each school, as well as the central office, was visited by an interview team of two persons who combined expertise in both media and educational policy. In the central office, we discussed the use of ITV with central office personnel at several levels, beginning with the superintendent or his assistant, and including directors of curriculum or the equivalent role. In each school we talked to the principal, the media specialist, and at least 50 percent of the teachers themselves. We also interviewed a substantial number of students in order to compare their viewpoints with those of the staff.

In addition, we left questionnaires which were filled out and returned to us by all of the teachers in all of the schools which we visited. These questionnaires provided objective data for comparison with the subjective information given in our interviews. Table 1 summarizes the extent of this activity.

TABLE 1. SUMMARY OF INTERVIEWS AND QUESTIONNAIRES

25 School Systems -- 62 Central Staff

- 15 Superintendents
- 14 Assistant Superintendents
- 10 Directors of Education
- 5 Directors of Media
- 12 Directors of Curriculum
- 4 Directors of Instructional Services

37 Schools -- 28 Elementary; 9 Secondary

- 36 Principals
- 224 Teachers (50 percent)
- 33 Media Specialists
- Total: 293
- Miscellaneous Students
- 509 Questionnaires

In each case the activity began with a notification from Dr. Singletary, informing the superintendent of the district of the purpose of the study, and requesting his cooperation.

Following the letter from Dr. Singletary, a call was made to each district superintendent by a member of the research team. In this conversation, we requested the district's cooperation, identified the central office personnel to be interviewed, and indicated the schools which were selected for interviews. We requested that the superintendent confirm the proposed interview date, notify the school principal that his school had been selected, and mention that the study team would be in contact with him in the near future.

Following this notification, the research team called the principal by phone. Again, the purpose of the study was explained and the date and time of the interviews was confirmed.

In most cases, one or two days prior to the interview, follow-up calls were made to the superintendent to double-check the interview arrangements, and to answer any additional questions which the superintendent or principal might have raised.

Throughout the project, the two teams maintained daily contact to assure a common interview technique and to compare their insights. We have been impressed by the consistency of the information gathered and, as a result, we have a strong confidence in our interpretations.

ITV IN GEORGIA

AN OVERVIEW OF THE GEORGIA ETV NETWORK

The Georgia network comprises eight transmitters, plus one additional transmitter rented for ITV transmission from the University of Georgia. In addition, there are several "translators" which rebroadcast the signal into areas which would otherwise be beyond the reach of the transmitters. In some locations the signal is also picked up and carried by local cable television systems. All of this is tied together in a single monolithic educational network, providing both instructional and public broadcasting substantially to the entire state from the central production center in Atlanta.

The center incorporates facilities and equipment for both studio and remote broadcasting as well as production of a great variety of ITV materials. It is neither "hungry" nor flamboyant, and it represents an excellent compromise between these extremes. Its studios are well designed and flexible, easily adaptable to a variety of activities . . . large enough to be neither a "shoebox" nor a "poor man's imitation of MGM".

We began this study with an orientation to the network, its facilities, and activities. The six members of the project team who visited the facility, combine a broad background of educational, media, and policy experience. It is our unanimous opinion that the facilities, staff, and activities are among the finest that we have observed. They are very well planned and efficiently administered. The use of a central production facility to feed a statewide array of transmitters and translators is well calculated to provide maximum coverage, with minimum investment and operating cost. The production center is well equipped. It is planned for efficient work flow, and able to adapt to a variety of reasonably sized tasks.

Both the production and engineering staffs are sophisticated and versatile. They are more oriented to problem-solving than empire building. One evidence of this is the presence of a significant film capability. Film production is often quicker, easier, more flexible, and less costly than remote television production, yet its use requires additional skills, and a problem-solving orientation that are often missing from educational broadcasting. It is too often more satisfying to preside over an elaborate, but idle facility, rather than a smaller

and more active enterprise which daily addresses the difficult problems of audience and service.

Georgia does not have this problem; its facilities are well planned. The staff is deeply interested in solving its own problems, and were both candid and acute in anticipating many of the results of our study. Since most of what follows will examine needs and problems, we feel that it is important to recognize that it does not reflect inadequacies or lack of effort in either facilities or staff.

The costs of instructional television are inextricably interwoven with those of public broadcasting. Since to a great extent, they use the same facilities and staff, in practice it is impossible to separate these two. However, the order of magnitude of costs is fairly apparent, and as will become clear, the question of value revolves about utilization rather than the details of cost.

UTILIZATION

Instructional television is a service to the school. Whether intended to provide enrichment, additional instruction, or training for the professional staff, its success is subject to one key criterion: the extent of utilization. For this reason our principal activity has been directed to this question -- working with teachers, administrators, and students to determine whether instructional television is used extensively, whether it is effective when used, and the reasons for its use, or lack of use, from the point of view of the classroom.

Despite its potential . . . despite the fact that almost every administrator and teacher believes that television can provide invaluable enrichment . . . despite a general agreement that ITV programming is excellent . . . despite all these positive factors, one overwhelming fact remains: the use of television in the classroom is minimal. Both this fact, and the underlying reasons are the dominant features of this study (Figure 2). In the course of our interviews it became apparent that several key problems interfere with television's use. We believe they can be solved; but until they are, instructional television will remain more promise and potential than reality.

Scheduling

Both in our subjective interviews and in the supporting questionnaires, it was clear that scheduling is an overwhelming problem. The same monolithic efficiency which makes it possible to send television instantly into every corner of the state, establishes an inflexibility which prevents its accommodation to the individual problems of local systems, schools, teachers, and students. *As a result, the use of television is restricted to those situations where school activity can be adapted to the broadcast content and schedule, rather than vice versa.* Since such flexibility is largely limited to the early primary grades, most of the utilization occurs there. There is minimal use in the later primary grades and almost no use of ITV in secondary schools.*

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* Several striking exceptions to this both emphasize the problem and point the way to its solution. They are discussed later in this report.

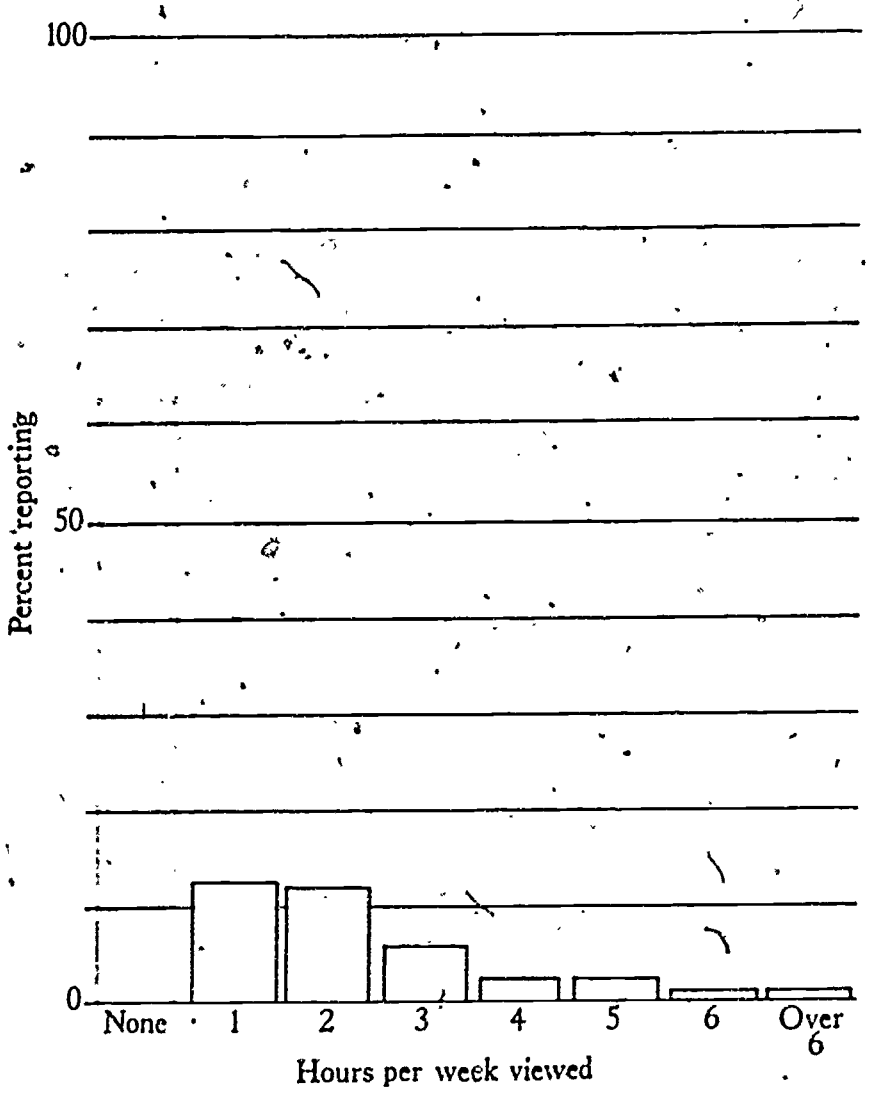

FIGURE 2. REPORTED USE OF ITV

The variety of scheduling problems is seemingly endless. If a program is scheduled to begin on the hour, a substantial percentage of classrooms will be lost because they begin on the half-hour. The program and the local class may be scheduled for different times of the day, or different times during the week.

One principal pointed out that children are most alert during morning hours and, hence, these are likely to be devoted to the critical teaching of basic skills. Teachers are not likely to interrupt this for TV. There is no assurance that the order or tempo in which materials are presented in a TV program will coincide with the curriculum plan of a particular school. Still further, some schools may operate on a semester schedule, while others operate on a trimester.

There is a growing trend toward departmentalization in the primary, as well as secondary grades. As a result, each subject is presented repeatedly throughout the day. A program which appears once is of little use. Many schools are experimenting with variations on open classrooms and individual "multiple track learning", where students proceed at different rates. It is difficult to reconcile such techniques with the lockstep schedule and pace implicit in broadcast television.

In Georgia's wide range of socioeconomic conditions, a single tempo and vocabulary may be unworkable. One teacher told us that the programs from Atlanta added "15 new words every day, and it's impossible for my students to keep up". Facing this long list of schedule-related difficulties, it is remarkable that there is not still less use and enthusiasm. The instantaneous efficiency which makes television a powerful mass medium is also its chief handicap in adapting to these extremely varied needs.

As many administrators mentioned, the problem is not insuperable. Many suggested that if this were the only problem, they could manage to adapt their activities to the medium. But faced with a barrage of far more serious, pervasive, and urgent problems, local school systems are simply not able to put the "cart before the horse".

Planning

For a number of practical and expedient reasons, the materials, scheduling, and format of ITV originate in Atlanta along with the broadcast signal. There are, after all, 188 school systems in Georgia, and any alternative (at least at first glance) seems to require a formidable coordination of curriculum, and an almost impossible consensus. Yet, if one regards ITV as a supporting service and an enrichment resource in support of these local systems, it is difficult to imagine broad and effective utilization without at least a moderate involvement of their curriculum and planning personnel. In our interviews we found little or no such involvement, and while this gap is not resented, neither is there any evidence of widespread integration with the curriculum, or anxiousness to exploit the potential. Like other sophisticated technologies, instructional television is being "pushed" toward its users. It has reached the stage where we need to place more emphasis on "pull" from those who must ultimately use it.

Equipment

Georgia's educational television network represents close to a $10 million investment. All of this is designed to distribute a signal which cannot be used without appropriate equipment in the classroom. A key virtue of television (in contrast to other media, such as film) is its potential to bring a picture into the classroom at the push of a button. It is essentially effortless and noiseless, requiring no special skill or training. The cost is comparatively low (roughly one-fifth the cost of a motion picture projector). There is no need to darken the room, set up and tear down a noisy, complicated projector, set up a screen, or check out and repair films. A television set requires far less maintenance, and even that is readily available in every community. Once the system has been established, the process of transporting a picture from a projector in Atlanta to a classroom in Valdosta is instantaneous, inexpensive, and convenient . . . provided that a receiver is available in the classroom.

This is largely not the case. Only one-half of the teachers we interviewed have a set in the classroom. In many cases, a set is nominally available, but to view it the teacher must check out a receiver, roll it to the classroom,

and fiddle with the antenna and controls before receiving a picture. In this process, many of the virtues of television are lost. It seems inappropriate to spend millions in broadcasting a signal without a corresponding concern for the ability to receive it.

Some schools indicate a concern for vandalism and theft, yet the problem seems no more insoluble than in the case of other attractive equipment. Other schools have been able to equip and maintain sets in their classrooms. And in any case, the presence of appropriate receiving equipment seems critical to an effective overall system.

In several significant, though isolated instances, schools have obtained recording equipment in order to solve the problem of scheduling. The effect on their utilization has been striking and will be discussed later in this report.

Programming

Despite the constraints of scheduling and planning already mentioned, the general reaction to ITV program material is excellent. We heard very little criticism of either the content, style, or presentation. However, in closer discussion, several interesting points became apparent.

In both the subjective interviews and in our questionnaires (Table 2), it was clear that the programs of most interest and use were also the most costly and ambitious. This reflects both the difficulty and demands of effective television programming. Instructional television, like commercial broadcasting, is reaching a stage where the program materials themselves must be considered a significant capital investment . . . so much so that there is a discernable trend toward sharing these costs through production by consortia of state school systems.

Even more striking, however, was a repeated preference for a particular format which these materials do not address. Again and again, teachers and administrators emphasized a desire to use "specials" as opposed to regularly appearing series. Again and again they mentioned the potential of "specials" . . . individual programs like Benjamin Franklin, the National Geographic specials, etc. We believe this reflects two key issues.

TABLE 2. DATA FROM QUESTIONNAIRES

Total number of questionnaires returned	509
Number of classrooms with TV sets	212
Number of classrooms without TV sets	287
Number of classrooms sharing TV sets	10

Ten Most Popular Programs	Number of Teachers
The Electric Company	82
Science*	53
Cover to Cover	45
Math Factory	32
Inside/Out	29
Picture Book Park	25
Designs for English: Literature	22
Sing It Again	22
Music*	20
About Safety	20

Distribution by Subject Area

Language Arts/Communications	179
Science/Health	137
Mathematics	45
Music	40
Early Childhood	35
Social Studies	26
Spanish	15

* Not specifically identified.

- Scheduling. A periodic important special is worth the unusual effort required to adapt to its schedule.
- Competition. Specials do not inject the presence of a second teacher who may well be more skilled, and is certainly more glamorous. It is difficult to weigh this factor, but it is unquestionably present. Even when a teacher is not present in the scene, the skill and dominance of the medium can be threatening and contribute to a "not-invented-here" syndrome.

There is an inevitable temptation to evaluate Georgia's ITV activity in terms of quantity . . . the number of hours, or the number of programs. Yet, one good special (on science or history, for example), if promoted well and actually viewed in a substantial number of schools, can easily be worth more than a series which is broadcast, but ignored. Such activity, however, requires an enlightened perspective on the part of all concerned, and a recognition of utilization in the school as the principal criterion of success.

Cost Effectiveness

The issue of cost effectiveness requires a balance of two factors, both of which require definition. However, the previous discussion should make clear that instructional television faces serious inherent difficulties which currently prevent its potential from being achieved. In this circumstance, one might well consider the question of cost effectiveness a moot point, and it seems more appropriate to consider the question, "Could ITV be cost effective, if utilized?"

The capital investment in Georgia's ETV network is currently approximately $9 million. Operating costs total $3 to $4 million per year. Both of these figures, however, include what is commonly termed public television (the evening programs of cultural material like Civilization; The Ascent of Man, Elizabeth, etc.), as well as instructional television (the daytime material directed specifically to use in the classroom). In fact, it is impossible to separate these two; they are a marriage of convenience involving common facilities, capital investments, and talent.

One can establish an attractive case for ITV by assigning the basic capital and operating costs to public broadcasting . . . reserving only the marginal costs to ITV. Conversely, one can make an attractive case for public television by reversing the procedure. The operating costs also include approximately $300,000 devoted to film distribution activity and another $100,000 for the school library program, both only slightly related to either area.

Because of the public/instructional overlap, and the completely overriding issue of utilization in the school, we see little point to debating the details of cost. As a general perspective, we suggest that the true cost of this $9 million capital investment should be considered, even though much of the amount may reflect federal contributions. Adding this "capital cost" (perhaps a million dollars per year) to the operating cost would yield a total cost for educational TV around $4 to $5 million per year. The portion assigned to instructional television is subject to debate, but we suggest its marginal cost is probably about $1 million per year*.

If this amount could be removed and scattered across the several thousand schools of Georgia, it would represent a few hundred dollars per school. It is hard to believe that this amount could have significant value. Thus, in our opinion, the question of ITV cost effectiveness in Georgia revolves not about the question of cost, but about the far more dominant question of utilization.

If television were to provide significant support in the classroom, the investment of a few hundred dollars per school per year would be nominal indeed, and the issue of cost effectiveness would not be subject to debate. On the other hand, if the system is not used, no expenditure seems justifiable. Georgia was one of the pioneers in the exploration of instructional television. We believe it is the first state to so candidly examine its performance; we believe it can also be the first to solve this problem.

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* This could also be considered about $1,000/hour (assuming 6 hours/day and 180 days/school year.

ANALYSIS

In the course of this study we have seen several striking cases where imaginative administrators and teachers are using television effectively, despite the difficulties we have mentioned. Their efforts and their encouraging results lead us to believe that the basic problems of planning, scheduling, and classroom equipment could be overcome.

In reaching this conclusion, we have discarded the "model school" as an unrealistic prototype. We visited one such brand new installation with open classrooms, movable walls, central television facility, etc. . . . model tools for the model school. Impressive as such a demonstration is, it stands more as a goal than a practical model for the average school. Less spectacular efforts seem closer to the routine difficulties of the real world . . . and thus, more helpful.

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In one elementary school we met a principal who endorses and encourages the use of television with a vigor that is unusual. By persistent effort he has established a color receiver in every classroom. The central antenna system is connected to the local cable television service, providing instructional programs from both Georgia and Alabama. The teachers in this school report an average viewing time of 3-1/2 hours per week. We believe this emphasizes the importance of two factors: (1) an enthusiastic principal to champion the system; and (2) the presence of a television set in every classroom.

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In one city north of Atlanta, we learned of an early and frustrating experience . . . an attempt to videotape programs so that they could be used at times and places convenient to the teacher. Unfortunately, early videotape recorders were so unreliable and difficult to operate as to totally frustrate this imaginative attempt. It is only within the last few years that reliable equipment of this type has been available. During our interviews we encountered a number of individuals who had been discouraged by experiences with the early recorders.

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We visited one high school where ITV was used extensively, day in and day out, even though the equipment was minimal and its performance marginal. We believe it points the way to the effective use of instructional television. The fact that this system operates in a high school is all the more impressive, because during our study this was the only high school with any significant utilization.

The school is equipped to record programs as they are received; and has a distribution system, so that this recorded material can reach any classroom without moving equipment. The system is operated by an energetic and enthusiastic teacher, with the assistance of a group of students.

Most important, the teacher begins each year by planning a schedule of programs and presentation times in cooperation with the teachers who will use them. Thus, there are no unwanted materials, and each program is repeated as often as is necessary at the times that the instructor prefers.

In effect, the educational television network has become simply a source of program materials, and the balance of the system is planned and operated by the teachers themselves. The flexibility and logic of this approach seems overwhelmingly attractive.

We see an encouraging pattern in these examples of success:

- *a dedicated champion, planning and promoting the use of ITV,*
- *a recording capability to provide flexible content and schedule.*

SALIENT PROBLEMS

Inflexibility

In sum, the very strengths of instructional television in Georgia are also its weaknesses. The efficient, monolithic statewide system can carry a signal quickly and economically, to every school, but it cannot readily adapt to the almost infinite variation in schedule and content. It can present material with an excitement and impact that no teacher can match. Yet, the cost of this can only be justified if written off over large numbers of students.

Problem: Can we add flexibility to the scheduling and content of instructional television?

Curriculum Integration

Secondly, the problems of developing a new instructional medium and exploring its potential have brought about a system whose content, schedule, and format are planned with skill and effort . ... but not by the people they are meant to serve. This is an almost impossible task. Unless the administrators, teachers, and curriculum planners have some substantial role in developing the pattern and content of ITV, it is likely to remain an alien. We must find a way to integrate the television presentation with the curriculum it serves, despite a substantial variety of regional differences, teaching philosophy, and patterns of use.

Problem: Can we develop a system of planning and delivering ITV based upon local participation, and responsive to regional differences?

RECOMMENDATIONS

The Battelle staff believes that these problems can be solved, and that the tools for doing so are largely available at the present time. Rather than a radical change, however, we suggest that ch major problems should be approached in a tentative manner so as to test the suggestions which follow, and modify them as experience is gained.

Throughout our discussions, staff and teachers indicated strongly that they would like to use ITV, and would do so if the problems of planning and inflexibility were overcome. We believe that this can be accomplished with only modest changes in the current system, and that utilization would increase substantially. The result, however, would be a significantly different use of the television network, a direction which we believe must ultimately be its major role in instruction.

Electronic Shuttling.

The state of Georgia already budgets almost $300,000 per year for the simple physical handling and distribution of films via the mail. This does not include a similar amount of money for return postage. Nor does it include labor or the cost of purchasing and repairing an inventory of materials which are often outmoded and worn. At the same time, the inventory must include multiple prints of popular subjects. The materials are notoriously unreliable, and scheduling problems extreme. The investment in these films and the difficulty of modifying them are serious obstacles to effective use. Meanwhile, all of the costs are growing constantly.

In contrast to this, the ETV network can maintain a single file of films and tape programs, instantly transmitting them when needed to almost any place in the state. The result of this potential, together with the ability to record materials in the school, seem to us inevitable . . . an electronic distribution system, sending educational materials to schools throughout the state where they can be recorded for use when needed.

In this manner, a single (and more extensive) library of film and television materials can serve the entire state. They can be carefully maintained, handled only by professionals, and in the local school a single television distribution system can provide both film and television at the "touch of a button", without screens, darkened rooms, or expensive, noisy projectors.

We have not yet reached this stage, but the tools are already available, and the trend seems clear. There is more transmission time available at present than may be immediately apparent. Public broadcasting occupies only 1/2 of the potential broadcast day, and the entire balance is available to transmit materials for local use, if real-time broadcasting were not necessary. We do not suggest that such a system can or should appear instantly, but we believe that the trend in this direction is inevitable. In the long run it can improve both the quality and delivery of audiovisual support in our schools.

An Exploratory School Television System

The local recording and distribution system which we saw in one of the Georgia high schools has impressed us as an ideal concept. It addresses what is the most immediate problem of instructional television: the inability to adapt to local problems and preferences in schedule and content.

The system was not at all ideal. It was very limited in capacity, and a lack of technical advice was reflected in a comparatively poor quality . . . problems which could easily be remedied. Yet, despite these difficulties, the system is in use constantly--a fact which we feel demonstrates the overwhelming importance of the user, (together with the presence of an imaginative "champion").

We suggest an experiment to develop an optimum school system of this type, and then to test its effect when applied to a new environment. An attractive approach might be to begin by working with this particular school* to extend and enhance its capability. In our opinion, they should have two recorders (allowing them to record and play at the same time), together with appropriate equipment to distribute a good picture signal, and a "film chain" so that the films also could be presented via the television circuit.

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* Glenn Hills High School, Augusta, Georgia

We suggest this as an initial test so as to define a model system and document its effect on the use of ITV and film. We anticipate that both film and television would receive significantly increased use, and set an example for other schools. This experience, system design, and approach to selecting and scheduling the materials should then be transferred to a second school where unusual interest in the medium does not already exist. In this way, it would be possible to establish both the actual (as opposed to developmental) cost of such a system, and to demonstrate the potential impact in an "average" school.

A Regional Planning System

At the same time, it seems necessary and appropriate to address the second problem of integration with local needs and curriculum. This is more a management problem than one of technical capability, and its solution is correspondingly complex. Yet, we believe it is possible to make a significant improvement by exploiting some unused capabilities of the current system.

There are presently nine transmitters linked to, and relaying the centrally planned program schedule. We suggest that one of those transmitters be selected for an experiment in local planning. With a minimal investment in recording hardware, this transmitter could (for all practical purposes) be separated from the system during the ITV hours. It can then be used to provide an individual program schedule in response to the preferences of the schools within its range. Its content could be determined and scheduled by a committee of curriculum planners, or other appropriate representatives of the school districts within the area.

The goal of this experiment would be to establish the mechanics of such a planning organization; to aid in the process of organizing and planning program content and schedules; and to document the impact of this change on utilization by the schools. At the same time, it would be important to make a great variety of materials available . . . not only the current ITV materials, but other films and program materials that currently may be available, but not used in the broadcast schedule. Such materials could be transmitted from the Atlanta center during off-hours in order to provide a great variety of materials for the regional transmitter.

Equally important, the consortium should aid in carrying out promotional activities to assure that their schools are adequately informed and supported in their use of the program.

Clearly, this approach cannot solve all of the problems we have observed, but we believe that it would be possible to demonstrate a substantial increase in the use and acceptance of ITV. We believe the experiment could prove to be a major step toward an effective system.

SUMMARY

This project has shown that several problems interfere with the use of television in Georgia's schools. If solved so that the system provides more extensive support in the classroom, there is no question that the value of television would be substantial.

To achieve this service, the system must provide a local recording capability that will allow more responsive scheduling, as well as local planning and integration with the curriculum. The ultimate result would be a statewide "electronic shuttling system", sending both film and television programs throughout the state for use at the discretion of the local school.

APPENDIX A

ALTERNATIVE MEDIA

APPENDIX A

ALTERNATIVE MEDIA

In the course of our interviews, we discussed the usage of other audiovisual media . . . allowing us to weigh the comparative advantages. Although slides and transparencies are used occasionally, 16-mm film and 35-mm filmstrips are the only real competitors.

Film

Film is entirely under the teacher's control. However, scheduling is difficult, and delivery is not always reliable. Often the content and pictures are out of data, and the film embellished with scratches and splices. Although its budget is much smaller than TV, the cost of handling, repair, etc., are substantial when compared to the use. Ten years ago the competitive price to the Federal Government for simply handling and mailing films on a large scale was $3.00 to $5.00 per showing, not including return postage. This does not mean that film is a poor or unwelcome medium. Some school systems are leasing whole libraries so as to provide a substantial library of up to date and well maintained films at a comparatively attractive price.

Filmstrips

Filmstrips are used widely. They are cheap, easy to use, and projected by an inexpensive projector that can be given to the student without concern for delicate electronics or damage to an exotic piece of machinery. The projector is amall and can be carried about easily. One can easily acquire a drawerful of inexpensive materials. Filmstrips lack much of the appeal and impact of film and TV, but they are quick, cheap, and easy.

In the light of this almost universal description by teachers and principals, one cannot avoid mentioning the current research project aimed at developing an ultra-sophisticated device which would transmit filmstrips in

seconds via television. This approach mitigates almost every advantage of filmstrips without minim zing their disadvantages. The cheap, rugged projector would be replaced with an exotic array of expensive and delicate hardware. Even were the result not subject to the "slings and arrows" of experimental equipment, it would require sophisticated maintenance, and a television system for display. The cost of such research and development could purchase truck-loads of filmstrips.