A COMPARATIVE STUDY OF SELECTED ELEMENTARY SCHOOL TEACHERS' AND ADMINISTRATORS' ATTITUDES TOWARD INSTRUCTIONAL TELEVISION PROGRAMS AND RELATED PROBLEMS

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ABSTRACT

A COMPARATIVE STUDY OF SELECTED ELEMENTARY SCHOOL TEACHERS' AND ADMINISTRATORS' ATTITUDES TOWARD INSTRUCTIONAL TELEVISION PROGRAMS AND RELATED PROBLEMS

by Edward R. Gork

The purpose of this investigation was to make a comparison study of attitudes and anticipated and realized problems of selected classroom teachers receiving in-school instructional television (ITV) lessons, and to identify, analyze and evaluate existent problems in elementary school instructional television programs.

The respondent population of the study consisted of 43 school administrators and 189 classroom teachers--grades 3 through 6--representing 14 different school districts within a 40-mile radius of Educational Television Station WMSB-TV's (at Michigan State University) transmitting tower at Onondaga, Michigan. All of the respondents were employed in public urban or consolidated schools; none was from a one-room school.

Data were secured through the utilization of the normative-survey method, supported by personal interviews. Two separate sets of questionnaires were distributed to the respondents--in September, 1959 and June, 1960.

The following is a summary of the major findings:

1. Prior to their reception of instructional television programs, teachers indicated very favorable attitudes toward

TV instruction.

2. After nine months of experience with ITV, the teachers' attitudes--although still favorable--were somewhat reduced from their original high degree of favorableness, for their expectations were patently not fully realized in certain areas, and perhaps tended to be over-optimistic.

3. Years of teaching experience did not significantly affect teachers' attitudes toward ITV; specifically, teachers with more than five years' and those with less than five years' experience as teachers manifested about equally favorable attitudes toward ITV.

4. Administrators--in this study, mostly elementary school principals--were inclined to hold more favorable attitudes toward ITV than did teachers.

5. The inability of pupils to ask questions directly of the TV instructor was considered a minor or no problem by over 75 per cent of the respondents.

6. Approximately 87 per cent of the respondents indicated that participation in ITV would leave the classroom teachers' prestige undisturbed; that is, some classroom teachers' fears that ITV instructors would supplant them in prestige and regard by the pupils were unfounded.

7. The majority of the teachers signified that the ITV teachers' techniques and ideas were very helpful to them in making their own class presentations.

8. A relatively heavy percentage (81.5) of the respondents indicated that participation in ITV did enhance the learning situation in the classroom, over and above what was usually accomplished without ITV.

9. Following their ITV experience, nearly 90 per cent of the respondents expressed the view that they favor the expansion of ITV in the nation's schools (Very favorably, 16.8 per cent; Favorably, with reservations, 72.9 per cent).

10. However, in response to the question if they would like to continue the use of ITV in their own classrooms, only 66.8 per cent checked an affirmative answer, while 18.5 per cent expressed a neutral position.

11. The two "greatest problems' vexing the respondents in relation to ITV participation were: 1) The necessity of additional time and effort required of the classroom teacher, and 2) the inflexibility of the curriculum created through the necessity of the ITV participants to follow courses of study selected by staffs other than the local one.

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By

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CHAPTER I

BACKGROUND OF THE PROBLEM

Introduction. Since 1950--when the first educational institution-owned and operated television station (Iowa State College's WOI-TV)[1] flashed onto the American scene--there has been a prodigious volume of writing, discussion and speculation upon the significance of television for organized, formal education. Today, interest in ITV (in-school instructional television) has reached an unprecedented peak. Since 1950, the number of educational television stations in operation has burgeoned from one to forty-seven that are currently telecasting regularly. Of the forty-seven stations, thirty-four operate on VHF channels (that is, very high frequency and open to anyone possessing a TV set) and thirteen beam their programs over UHF channels (ultra high frequency, which requires a special attachment on the TV set for reception). There are still remaining 220 reserved educational channels that are at present not being used; but of these, twelve have already been assigned to educational institutions and will commence operating within the next few months.[2]

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[1]William K. Cummings, This Is Educational Television (Ann Arbor: Edwards Brothers, Inc., 1954), p. 37.

[2]Educational Television Factsheet, May, 1960 (Washington, D.C.: Joint Council of Educational Television, 1960), p. 3.

These television stations are telecasting a tremendous variety of educational programs into hundreds of classrooms, for the benefit of thousands of students--to say nothing of the many more thousands of people in their homes--all over the country. However, as with many pioneering projects, there has been no set of established purposes or procedures that could be followed; hence, the heterogeneous profusion of programs launched and operating at the present time.

No wholly unchallenged and valid evidence has been advanced that television instruction in education is unequivocally beneficial. And, indeed, no one has made a claim of that scope. But it has a munificent number of extremely enthusiastic advocates on the one hand, offset by a considerable number of articulate and vocal non-sympathizers on the other. ITV's status, its effectiveness as a teaching tool, its ultimate worth for education still remain today unresolved certainties.

Most studies that have dealt with TV instruction programs have concerned themselves chiefly with measuring achievement results of TV pupils and comparing them with the achievements of non-TV pupils, i.e., conventionally-taught pupils. The compared results, by the way, have proved to be statistically insignificant in the majority of studies reported thus far.[1] At the same time, apparently no systemtic attempt on

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[1] Teaching by Television, A Report from the Ford Foundation and the Fund for the Advancement of Education (New York: Office of Reports, 1959), p. 54.

a relatively extensive scale has been made to determine the attitudes and reactions of classroom teachers toward ITV programs; reference here being made, of course, to those teachers who were receiving or had received ITV telecasts.

Attitudes of classroom teachers, school administrators and pupils may be shifting significantly toward instructional television, toward school, toward each other and toward subjects taught via telecasts. The direction of shifts in attitudes indubitably will prove consequential to the future utilization of ITV as a means of classroom instruction, will prove consequential to the degree and to how television will be used in the classroom by public school teachers. Both educators and the public alike should profit by being cognizant of the tack the attitudes take.

MICHIGAN STATE UNIVERSITY'S "CLASSROOM 10"

On March 15, 1959 Michigan State University's Educational Television Station WMSB-TV began telecasting over VHF Channel 10 from studios located on the campus at East Lansing, Michigan. This same channel is being shared by a commercial station, WILX-TV, which maintains studios at Jackson, Battle Creek and Lansing. The two television organizations are completely independent with separate administrations, staffs, equipment and programs. Their only relationship consists of sharing the same TV tower and transmitter that were constructed by Michigan State University, and which the University rents on a part-time basis to the commercial station.

Under this unique shared-time arrangement, WMSB-TV telecasts 38½ hours of educational programming weekly, which is well in excess of the minimum requirements established by the Federal Communications Commission for what it considers full-time television operation. From Mondays through Saturdays, the telecasting schedule runs from 9:30 a.m. to 2:00 p.m. Evenings, the station beams programs from 6:00 to 7:30 p.m., and on Sundays the hours run from noon to 4:00 p.m.

The transmitter for Channel 10 is located at Onondaga, Michigan--approximately half-way between Jackson and Lansing. It is estimated that Channel 10 coverage encompasses an area within a sixty-five mile radius of the transmitter, and a potential television audience of 1,782,000 lies within this area.

In cooperation with the Lansing Public Schools, WMSB-TV has been conducting what it calls project "Classroom 10," a regularly scheduled program that telecasts school-oriented programs over Channel 10 daily, i.e., each weekday including Saturday, from 10:00 to 10:30 a.m. and 2:00 to 2:30 p.m. On Saturdays, however, only the morning programs are telecast. Initially, pupils in about eighty-five Lansing classrooms and several suburban Lansing schools--as well as pupils in Jackson, Hillsdale, St. Johns and others--had been participating in these televised programs which are beamed directly into the classrooms. Soon, more than 100 classrooms within the sixty-five mile radius were receiving school-oriented programs in art, music, Spanish, science, social studies in the elemen-

tary schools. High school chemistry was taught at 10:00 a.m. on Saturdays during the first year of the program.[1]

Upon request, WMSB-TV distributed carefully-prepared lesson guides to receiving classroom teachers. These guides contained pertinent information for the classroom teacher relevant to preparing his pupils for the reception of the ITV lessons. Suggestions were also included for more effective utilization of the program within the classroom.

"Classroom 10" was telecast from its inception, March 15, 1959, until the end of the school year--June, 12, 1959, a period of approximately three months. With some modifications in course content, the telecasts were continued throughout the entire 1959-60 school year, and are being continued in the current year, 1960-61.

IMPORTANCE OF AND NEED FOR THE STUDY

Almost without exception, every study dealing with instructional television emphasizes the urgent need for further study in this field--in every area. Siepmann says, "There is nothing that we know now about educational television that we do not need to know more amply, with greater assurance and in reference to more varied, specific situations."[2]

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[1]"MSU's Classroom 10," Michigan Educational Journal, May 1, 1959, p. 446.

[2]Charles A. Siepmann, TV and Our School Crisis (New York: Dodd, Mead & Company, 1958), p. 144.

A published report of a seminar on implications for instructional television held in Washington, D.C. January 31, through February 3, 1959 again asserts the need for research:

> In a field as new as educational television, nearly everything needs further research and experimentation. The potential of educational television seems to depend equally on advances in what we know about how learning takes place--the province of psychologists, educators, and other social scientists--and on energetic experimentation and middle-ground (operations) research by the people concerned specifically with television.[1]

The two vouchers just cited typify the earnest pleas put forth by investigators who had previously participated in studies involving television instruction. Even a cursory examination of the literature in ITV reveals that it is studded with such phrases as, "a paucity of literature exists," "need for further study," "relative absence of evidence," "replication is imperative for substantiation," and the like.

However, aside from these cogently established general needs for further study in educational television, other more specific, immediate and compelling motives served as an impetus for the undertaking of this particular study.

Following the public announcement in the fall of 1958 that WMSB-TV would commence telecasting school-oriented programs in the central Michigan area, the Public Schools of Jackson, Michigan opted for an experimental participation in the program. Accordingly, preliminary plans were drafted to this

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[1]Finette P. Foshay, Interaction in Learning: Implications for Television (Washington, D.C.: National Education Association, 1959), p. 59.

end. Seven 21" TV sets were acquired and placed in selected elementary schools, one set to each school. Due to a combination of unfortunate circumstances, WMSB-TV did not begin telecasting until late in the school year, March 15, 1959--too late for extensive teaching of pupils, but long enough to provide classroom teachers an excellent view of what ITV would be like.

Prior to the commencement of the reception of the telecasts from Channel 10, classroom teachers began expressing variant apprehensions concerning instructional television. As principal of one of the elementary schools that was chosen for participation in the experiment, this investigator was in "on the ground floor," as it were, in becoming privy to the anxieties of the classroom teachers. Discussions with teachers from other elementary schools that were to participate in the televised programs provided additional evidence that deeply-felt apprehensions existed among them. This investigator was understandably impelled to try to alleviate the misgivings, mingled with apprehensions, of the teachers; in consequence, he turned to the literature for whatever aid was available.

Surprisingly, "a paucity of literature" was extant reporting the <u>receiving</u> teachers' opinions, attitudes and reactions toward instructional television. "Surprisingly," because it follows from an accepted basic democratic principle that any changes, modifications, revisions or additions to school curricula should be duly planned and implemented with the full cooperation of classroom teachers. And yet, an examination of the literature disclosed that, not infrequently,

the instructional television programs were more or less imposed from higher echelons down to the lower. Presumably, there were instances when intructional television programs were not the result of a spontaneous "grass roots" movement or approach--synthesizing the planning and thinking of teachers, administration members, pupils and parents--but an administrative injunction, undeniably a well-intentioned and benevolent one, of course.[1]

Administrators, harried by teacher and classroom shortages, were sometimes hurriedly grasping for ways and means to close these gaping hiatuses. Patently, instructional television appeared to many administrators as an urgently-needed educational tool, materializing in the nick of time. Retrospective analysis would seem to indicate that the administrators were just too harassed and hurried to take the time for proper teacher consultation. It should be noted, however, that happily these "impositions" were not the general rule.

It has been solidly established that if optimum cooperation is to be attained among administrators, teachers, pupils and parents (and staff members of educational television stations), the classroom teachers' views and attitudes must be equated as generously as those of any other group. Because, in fine, no matter what conclusive and definitive proof is

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[1]Harold E. Wigren, "ETV: The Story Up to Now," National Association of Educational Broadcasters Journal (May, 1959), p. 3.

produced that ITV is an efficacious teaching tool--and thus desirable and necessary--if teachers' opinions and attitudes tend to resist or ignore these proofs, then its effectiveness may never be given an equitable opportunity to realize its full potential. Remmers clearly makes this point when he says:[1]

> The realization is rapidly growing that attitudes, the way individuals and groups feel about various aspects of their world, are probably more determinative of behavior than mere cognitive understanding of this world.

The coupled factors of (1) wishing to help classroom teachers allay anxieties related to ITV participation and (2) the dearth of studies on classroom teachers' opinions and attitudes toward ITV served to underscore the need for this particular study.

STATEMENT OF THE PROBLEM

In light of the preceding statements, it can be concluded that unwanted gaps exist in data pertinent to the use of in-school television instruction.[2] Realistically, it must be recognized that not every one of these gaps can be occluded in time to help school administrators pass serene and definitive judgments regarding the adoption of ITV program participation. Unquestionably, progress has been and is being made to fill the more yawning gaps. Classroom teachers' opinions

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[1]H.H. Remmers, Introduction to Opinion and Attitude Measurement (New York: Harper Brothers, 1954), p. 15.

[2]Chapter II provides additional data to enhance this view.

and attitudes toward ITV programs is one of these.

PURPOSES

The signal purposes of this study then were: (1) to make a comparison study of anticipated and realized problems of selected classroom teachers receiving instructional television lessons, and (2) to identify, analyze and evaluate existent problems in elementary school ITV programs in the Channel 10 area.

HYPOTHESES

To set a matrix for this study, the following basic hypotheses were posited:

1. Classroom teachers who are inexperienced in ITV are apprehensive regarding it, and as a consequence, hold unfavorable attitudes toward ITV.
2. A year's (or more) experience with ITV by classroom teachers will significantly diminish their apprehensions relevant to it.
3. Teachers with greater experience (as classroom teachers) will manifest a more favorable attitude toward ITV than teachers with less experience.
4. Administrators hold more favorable attitudes toward ITV than do classroom teachers.

Assumptions. It was assumed that classroom teachers' apprehensions concerning instructional television programs would be expressed by their negative attitudes toward these programs. If this assumption were proved true, then significantly more negative responses would be indicated by teachers

pre-ITV participation than post-ITV participation.

LIMITATIONS OF THE STUDY

This study restricted itself to the elementary school teachers and administrators who had participated, or were about to participate in ITV programs beamed from WMSB-TV, Michigan State University's Channel 10 educational station. Elementary school teachers of grades three through six and elementary school principals were the respondents to the two data-gathering questionnaires that were distributed in September, 1959 and June, 1960. Seven members of this group participated also in personal interviews during the month of November, 1960. The only exceptions to the elementary level demarcation were eight administrators whose jurisdiction extended into secondary schools. Curriculum directors, superintendents and coordinators comprised this latter group.

DEFINITION OF TERMS

ITV--denotes "in-school instructional television," that is, educational programs that are essentially prepared for and received by schools on all levels of instruction.

Receiving teacher--pertains to that teacher who is situated in a regular classroom and participates in ITV programs.

Pre-ITV--refers to that period of time before ITV programs are received.

Post-ITV--refers to that period of time after participation in ITV programs.

Receiver--refers to what is commonly known as a "TV set."

ITV teacher (or instructor)--refers to the teacher who prepares and presents carefully-prepared lessons, before the TV cameras, that are telecast into the classrooms.

ETV--Educational Television, which differs from ITV in that ETV programs are not aimed primarily for school consumption, but are beamed to the general public.

ORGANIZATION OF THE STUDY

This study was divided into five chapters.

Chapter I Introduction
Deals with the general nature of the problem, Michigan State University's "Classroom 10," importance and need of the study, statement of the problem, limitations of the study, definition of terms, and an outline of the organization of the study.

Chapter II Review of Selected Literature
Includes a review of related literature up to 1957, and describes several ITV projects and related literature post-1957.

Chapter III Plan and Procedure of the Study
Describes the design of the study and procedures of constructing the questionnaires and personal interview outline, distributing the questionnaires, and describes the method for analyzing the data.

Chapter IV Presentation and Analysis of Data
Describes the repondent population, presents the results of questionnaires and interviews, and analyzes the responses to the open-end questions on both questionnaires.

Chapter V Summary, Conclusions and Recommendations
Presents the summary of the study, observations on selected aspects of the study, and recommendations.

Bibliography

Appendix

CHAPTER II

REVIEW OF SELECTED LITERATURE

Introduction. For the sake of research, pertinent problems are--of necessity--frequently segmented into fractions for more minute and precise examination. Too often a hapless corollary of fragmentation throws out of focus one's perspective of the over-all problem related to a particular field of endeavor. And so it is in education.

In-school instructional television is but a fragment of the over-all problem of teachers who earnestly strive to improve the quality of instruction by experimenting with new pedagogical approaches, techniques and technological tools. Effective and feasible--in our pragmatic society, they must be pragmatic, of course--elements of these educational trials are retained and incorporated as standard procedures; others are tried, found wanting, and abandoned. Teachers underwent experimental throes when radio, filmstrips, films, yes, and even writing were first introduced as aids to the transmission of knowledge. It is written that when the early Egyptians were developing the art of writing, many of the venerable elders decried such new-fangled notions as writing. They claimed that such "crutches" for the memory would eventually result in its atrophying, and thus should be scrupulously avoided.

In reviewing the following studies in the field of in-

structional television, it is realized that this is an exploration of but one of many facets reflecting education's unending development.

This review of instructional television studies--through 1956--will be drawn primarily from Kumata's Inventory.[1] Supported by a grant from the Institute of Communications Research at the University of Illinois, he has compiled what is considered to be the most authoritative and comprehensive summary of pioneer research endeavors in instructional television.[2] The Inventory succinctly outlines the aims, attitudes, methodology and results of ITV efforts up to the time of its publication, December 1, 1956. To comb through the literature for data already inimitably compiled (for many are now unavailable) by Kumata would indeed be an attempt at an unnecessary expenditure of time, effort and replication. Kumata's compilation, therefore, will be utilized as he no doubt intended it should: as a springboard from which further ITV explorations can be launched, compared, analyzed and evaluated.

The post-1956 review of literature will rely mainly on

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[1]Hideya Kumata, An Inventory of Instructional Television Research (Ann Arbor, Michigan: Educational Television and Radio Center, December 1, 1956), 115 pp.

[2]Edward W. Bundy, An Experimental Study of the Relative Effectiveness of Television Presentational Techniques and Conventional Classroom Procedures in Promoting Initial Comprehension of Basic Verb Form Concepts in Elementary Spanish (Published Doctoral dissertation, University of Michigan, 1959), p. 38.

a host of individual reports of pertinent studies and experiments that was available.

REVIEW OF SELECTED LITERATURE THROUGH 1956

For categorization of findings, Kumata posed a list of sixteen questions and answered them by reference to specific studies. The questions per se disclosed the problem areas that demanded attention and study in the field of ITV. The sixteen questions follow:[1]

1. Do students learn by television?
2. How do students taught by TV compare with those taught by other media?
    a. TV vs. regular classroom lecture.
    b. TV vs. in-studio classroom.
    c. TV vs. audio only.
    d. TV kinescopes vs. film.
3. What is the effect on retention of material learned through television?
4. What methods of teaching in television are the most effective?
5. Under what audience conditions does learning by television seem effective?
6. Who learns best by television?
7. How important is intercommunication or feedback?
8. What kinds of subject matter are best taught by television?
9. How are instructors chosen for TV teaching?
10. What are the attitudes toward learning by television?

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[1]Kumata, Inventory..., pp. 4-30.

11. What do we know about audience size?

12. What is the composition of the audience for telecourses?

13. What is the amount of viewing by the audience of telecourses?

14. What is the best way to publicize television courses?

15. What are the most liked features of telecourses?

16. What tips on presentations do we have?

Kumata marshaled an array of seventy-one abstracted studies for his responses to the posed questions. (It may be noteworthy that only eleven of the seventy-one related to elementary school television experiences.) These studies were augmented from another compilation of 173 titles of books, reports, articles, etc., which were included in his Inventory.

Ostensibly, classroom teachers' opinions and attitudes regarding ITV were not deemed of vital importance at the time Kumata compiled his study, for none of the sixteen questions bears on this topic exclusively. Question 10, "What are the attitudes toward learning by television?" pertains only to students' views of the medium. In the relatively rare instances when teachers' reactions and opinions were cited, they appeared as incidental and secondary appendages to main bodies of studies. The entire Inventory carried but one exception to this.[1] It listed a report by the Baltimore Public

[1]Teacher Reactions to TV and Radio Programs Presented 1952-1953 (Baltimore, Md.: Baltimore Public Schools, no date), cited by Kumata, Inventory..., p. A-28.

Schools that dealt entirely with teachers' reactions to TV and radio programs.

Even though none of the sixteen questions indicated a direct relevancy to the prime thesis of this study, a careful analysis of them suggested that five were indirectly related and hence warranted a brief review. The five questions were:

1. Do students learn by television?
2. Who learns best by television?
3. How important is intercommunication or "feedback"?
4. What are the attitudes toward learning by television?
5. What tips on TV presentation do we have?

Do students learn by television? An examination of the first question appears superfluous; and yet, it has been included as a component part of several studies.

Belson reported that following the exposure to two ten-minute programs in a BBC information series, his sample of 250 subjects (adults) showed that 70 per cent had a "sufficient grasp of the full major point," and that 80 per cent had a "sufficient grasp of at least a useful part of the full major point." In another study by Belson, he cites significantly more learning of French words and phrases by an experimental group of 100 than by a control group of 120 members. The experimental subjects (adults) were exposed to four TV broadcasts dealing with useful words and phrases in French and information about travel in France.[1]

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[1]Kumata, Inventory..., p. 4.

Rock, Duva and Murray conducted an experiment in which 3000 Army Reservists were given a series of eight one-hour telecasts regarding different phases of Army division operations under combat conditions. Their findings were that following the telecasts, all officers and enlisted men attained higher scores on test questions than they did before the telecasts.[1]

In a study that Stanley conducted in the San Diego, California Public Schools, he reported that second and sixth-graders achieved a substantial increase in scores on a true-or-false test subsequent to their exposure to one of a series of in-school instructional television programs. Results were somewhat confounded, however, because two of the items on the test were not covered or not covered adequately during the program, that is, for the second-graders; and the test for the sixth-graders was apparently poorly coordinated with the program. In general, learning was achieved on the items presented most vividly on the telecasts.[2]

Ulrich, working with forty classes of eighth-graders in Chicago, reported that ITV students did significantly better than a non-TV group in tests administered immediately after presentations and in a retention test given thirty days later.[3]

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[1] Ibid., p. 4

[2] Ibid., p. 4

[3] Ibid., p. 4

Snyder, evaluating a course telecast over Pittsburgh's WQED for high school credit, reported that out of 337 tests given in English, algebra and World History, 71 per cent of the tests received a passing grade, and 29 per cent failed. Students who passed received official credit toward a high school diploma. He adds that thirty-one inmates of a penal institution participated in the courses with eighteen completing the work and taking the tests. Of the inmates who took the examinations, 95 per cent passed them successfully.[1]

At the University of Illinois, Taunenbaum found that "dentists exposed to TV or kinescopes scored significantly higher on an information test than a control group of dentists."[2]

Judging on the general basis of the studies just cited, it would seem a reasonable corollary that students do learn by television--a phenomenon as yet contravened by no one.

Who learns best by television? Many of the pioneer research studies that were done in this area were performed by the military forces. Three of the four studies cited by Kumata involved trainees of the United States Army and Navy.

Using 400 Army basic trainees at Camp Gordon, Georgia, Kanner, Runyon and Desiderato have presented the staunchest evidence supporting the superiority of TV instruction for low

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[1] Ibid., p. 4.

[2] Ibid., p. 5.

aptitude students. Splitting the trainees into high and low aptitude subgroups, the investigators found that:

a. No difference could be found between television and regular instruction on high-aptitude groups. A possible explanation by the authors is that since high-aptitude people scored near the ceiling of the tests, there was little room for differences.

b. Among low-aptitude groups, seven of the 17 tests showed no significant differences in comparison of mean scores. For 10 of the 17 tests, significant differences appeared. In each instance, television was superior to regular instruction.[1]

In 1954, Boone ran a study at the United States Naval Academy at Annapolis. Using approximately 840 midshipmen--divided into experimental and control groups--he discovered that the "poorer" men (based on pre-exposure scores on a prognostic test) performed at a higher level by TV instruction than regular classroom instruction.[2]

At the University of Toronto, Williams divided 108 undergraduates into high, low and average students according to academic rank. All were exposed to the same material via lecture, TV, radio and reading. After testing, it was found that "the same rank order for effectiveness of media found regardless of ability--TV was best, followed by radio, then by reading and then by in-studio exposure." Williams notes,

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[1]J.H. Kanner, R.P. Runyon, and O. Desiderato, Television in Army Training: Evaluation of Television in Army Basic Training (Washington, D.C.: Human Resources Research Office, The George Washington University, November, 1954). Abstracted by Kumata, Inventory..., p. 71.

[2]Kumata, Inventory..., p. 15.

however, that the low-ability group exposed to TV achieved as well as the average-ability radio group. He reports, finally, that the greatest difference was revealed in the high-ability group in which the TV subgroup was much superior to the reading and radio groups.[1]

Comparing sixty-one TV students and 134 non-TV students of Army Signal Corps trainees, Fritz et al. found that no significant differences existed between the two groups. For purposes of comparison, the groups were divided by their high and low aptitude and information scores.[2]

How important is intercommunication or "feedback"?

Apparently only a few studies had dealt with this question directly, at least through 1956.

Experimenting with various types of arrangements for TV courses at the Pennsylvania State University, the investigators found that no significant differences emerged in achievement between those students who had recourse to two-way communication and to those who did not.[3]

In a study performed at Purdue University on closed-circuit telecasts of regular college courses, it was found that the provision of a two-way communication system between the students and instructor proved highly unsatisfactory.

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[1] Ibid., p. 15.

[2] Ibid., p. 15.

[3] Ibid., p. 15.

The report failed to mention, however, why the "Talk-back" arrangement was considered as being extremely inadequate.[1]

Harshbarger and Becker designed a study at the State University of Iowa for the purpose of gauging student discussion in TV and non-TV classes. Eighty-two subjects participated in the experiment. They were split into three groups--two TV and one non-TV--and intercommunication arranged so that all three groups could hear each others' comments. Results indicated that non-TV classes showed a greater preference for discussion than the TV classes. Based on the number of individual student participations, twice as many non-TV students took part in discussions compared to TV students.[2]

Reverting back to the Fritz et al. study, it recommends that two-way communication for TV classes be furnished only when deemed absolutely necessary. The authors assert that when "feedback" is provided, irrelevant and jejune questions are too often the result.[3] This contention is given further credence by the Rock, Duva and Murray study which reported that placing microphones for direct communication with the TV instructor was considered unsatisfactory because a lot of trivial questions were asked by the subjects.[4]

Citing the Kanner, Runyon and Desiderato study again--

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[1] Ibid., p. 15.

[2] Ibid., p. 16.

[3] Ibid., p. 16.

[4] Ibid., p. 16.

which also analyzed the type of questions asked in regular classes--it concluded that if the instructor planned and prepared his presentations with proper attention, the majority of students' questions would be unnecessary.[1]

Kelly and Concad of New Jersey State Teachers' College conducted an experiment that attempted to substitute for "feedback" in in-school TV instruction. Eleven different techniques were utilized for simulating intercommunication in TV lessons that were telecast to thirteen fifth-grade classrooms over a five-month period. The techniques used were:

1. Mind reading. Evidently a method by which a teacher anticipates the kinds of questions and answers pupils may raise.

2. Intercession. A method by which an interviewer is used to take the place of the pupils.

3. Panel of peers. The presence of a group of pupils in the program.

4. Real people. An effect, the authors state, which comes of realizing that the persons on the screen in a teaching situation are real as opposed to "fictional" persons on regular television programs.

5. Emergent personality. The regular appearance of a teacher to establish familiarity so that a feeling of intercommunication can arise.

6. Disembodied voice. The use of an off-camera voice to ask questions.

7. Heckling. The establishment of rapport with the teacher by having a heckler either on or off-camera goading the teacher.

8. Roving eye. The swinging of cameras to simulate

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[1] Ibid., p. 16.

a visitor visiting the teacher's room.

9. Teacher's lap. Close-up shots.

10. Interlude. Breaking the program up so that viewers have a chance to raise questions with their own classroom teacher before continuing with television instruction.

11. Hog fattening. Instilling a competitive spirit by having interludes of classroom work after viewing a group of peers perform on the screen.[1]

The authors concluded that a teacher with experience could develop operational empathy with TV pupils, particularly young ones, and could anticipate the types of questions that youngsters would raise. They thought the "Intercession" technique least productive as a substitute for "feedback." The "Panel of peers" method was effective if the members of the panel were unrehearsed and spontaneous.[2]

Although "feedback" to the TV instructor is absent from a live audience, Wallen feels that sufficient "feedback" is produced by the studio technicians. He claims that the responses of these people provide enough cues to enable him to teach effectively.[3]

What are the attitudes toward learning by television?

As previously noted, this question deals essentially with

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[1] Ibid., p. 16.

[2] G.A. Kelly and L.H. Concad, Report on Classroom Television (Montclair, N.J.: New Jersey State Teachers' College, 1954). Abstracted by Kumata, Inventory..., p. 75.

[3] R.W. Wallen, "Teaching Psychology by Television," School & Society, LXXV (1952). Abstracted by Kumata, Inventory..., pp. 111-112.

students' attitudes. Kumata observes that the studies bearing on this question should be "interpreted with extreme caution."[1] He points out that in the majority of cases, subjects were requested to compare TV courses with others they have taken. Moreover, the results of the immediate TV instruction experience may have an effect culminating in higher ratings favoring ITV. And then, in many cases questions designed to elicit attitudes toward ITV were limited to one or two and included as a minor item to the principal part of the study.[2]

Interestingly, of the thirteen studies summarized in the Inventory on this topic, only one deals with the elementary school.

In a study with ROTC students, Allen reported that material presented on TV was about as easy to learn as that received in normal classroom situations. More specifically, thirty-one out of fifty-three students felt the subject matter was as easy on TV as in the classroom; eleven students indicated that TV learning was easy or very easy; conversely, another eleven reported learning by TV was difficult. Comparing interest of programs and presentations, forty-five of fifty-three indicated that TV lessons were about the same or more interesting than related training programs.[3]

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[1]Kumata, Inventory..., p. 18.

[2]Ibid., p. 18.

[3]Ibid., p. 19.

Working with undergraduates at Pennsylvania State University, Carpenter and Greenhill found:

> A majority of the students exposed to TV thought they were learning about the same or a little less through television. There were no significant differences in achievement test scores between TV and non-TV groups. When students who took general psychology ranked psychology with other courses in terms of contributions to their own educational advancement and their liking of psychology, those who had received the standard lecture rated psychology significantly higher than TV students.[1]

In another psychology course study, Evans reported that when students were asked if they would again enroll for a TV course, 70 per cent responded in the affirmative, 13 per cent No, and 16 per cent Undecided. Those who responded No or Undecided were asked why they did so. A precis of their comments typifies the more frequent reasons given:[2]

> (1) that TV instruction allows no questions by students; (2) that various technical difficulties in transmission, reception and production interfere with learning; and (3) that interruptions from other viewers or other sources interfered with learning.

Citing another Rock, Duva and Murray study, Kumata reported that 80 per cent (of 3000 Army Reservists) of students who participated in a televised course thought the presentations "interesting" or "very interesting." When asked to indicate a preference for TV or conventional instruction, 75 per

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[1] Ibid., p. 19.

[2] R.I. Evans, "An Examination of Students' Attitudes Toward Television as a Medium of Instruction in a Psychology Course," Journal of Applied Psychology, XL (1956). Abstracted by Kumata, Inventory..., p. 49.

cent of the reservists preferred the former.[1]

A strikingly suggestive result was found by Parsons in a study conducted at the University of Michigan. From among three types of presentations--correspondence, TV and regular classroom--students were requested to indicate their preference. "A highly significant correlation was found between preference and the mode of instruction to which subjects were exposed."[2] In other words, TV students preferred TV, conventional classroom students preferred that type of presentations, and those who took correspondence courses preferred correspondence courses. A possible explanation for the high correlation may be due to factors other than the felt effectiveness of the media judged. For example, a correspondence student may be enrolled in that course, not because he feels it is preferred and a more effective medium, but that circumstances preclude his attendance at a regular classroom course.[3]

Studies dealing with preferences of length of instructional television programs tend to report that students preferred time lengths to which they had been already accustomed. Allen found that Army Reservists preferred one-hour TV courses; and, the courses which they had taken were one-hour long.[4]

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[1]Kumata, Inventory..., p. 19.

[2]Ibid., p. 19.

[3]Explanation advanced by this investigator.

[4]Kumata, Inventory..., p. 20.

At San Francisco City College, students had been exposed to thirty-minute courses and they indicated a preference for that length. Furthermore, they preferred the day of the week and the same time slot for the telecasting of this course.[1]

In the only study cited that related to elementary schools, Gable found that Philadelphia school teachers indicated a preference for fifteen-minute sessions for primary pupils and thirty-minute periods for elementary and secondary students.[2]

What tips on TV presentations do we have? Of the five studies abstracted by Kumata on this question, only two could be considered germane to this study.

After conducting experiments with Army trainees, Fritz recommends that not more than twenty persons should share one TV receiver.[3] As his study was done with adults, it would seem that probably more elementary school pupils than adult viewers could comfortably share one TV receiver.

Gable reported that Philadelphia teachers preferred 21" television screens for in-school viewing; and that telecasts should be received in a classroom, not in an auditorium.[4]

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[1] Ibid., p. 20.

[2] Ibid., p. 20.

[3] Ibid., p. 27.

[4] Ibid., p. 27.

REVIEW OF SELECTED LITERATURE--POST-1956

Of the studies just reviewed, none has attained the comparatively venerable age of a decade, and yet they are held to be "ancient history" in the field of television education; for the literature that is published relevant to TV instruction has an incredible rate of becoming obsolescent. Moreover, the body of literature seems to multiply at a geometric rate with each succeeding year. This phenomenon, of course, merely reflects the tremendous interest manifested in teaching and learning by the television medium.

This second section of the survey of related literature will address itself largely to studies and reports that were made in elementary education from 1957 to 1960, although a few earlier works will be touched upon.

The Ford Foundation, through its Fund for the Advancement of Education, took an early lead in the possibilities of television in helping to meet salient educational needs, and especially the problem presented by the rapidly expanding school population and dire shortage of competent teachers. During the past five years, more than ten million dollars have been provided by the Fund and Foundation for more than fifty different experiments at the school and college level involving the use of television as a tool of instruction.[1] Each

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[1]John J. Scanlon, "The Expanding Role of Television in American Education," The Journal of Educational Sociology, XXXII (May, 1959), p. 415.

of these experiments was designed in the earnest hope of discovering untried channels of exploration in which television might be used for enhancing the quality of education. Several of these experiments will now be reviewed with some detail.

The Pittsburgh Experiment. In the fall of 1955, the Pittsburgh Public Schools--supported by a grant from the Ford Foundation--started an ITV project for the purpose of illuminating many unknown factors relating to television instruction. Television lessons were planned and beamed into many Pittsburgh schools over station WQED, the first and oldest community educational television station of the twenty-two now operating. For the first time in the world and under careful observation of educators, a year-long television teaching project was undertaken by station WQED. In addition to the Pittsburgh schools, many surrounding counties, independent school districts and parochial schools participated wholeheartedly in this pioneering project.[1]

Many months of preparation and planning were done before the first TV lesson was conducted in September, 1955. Teachers, administrators, PTA members and parents were involved in the planning stage. School officials invited the parents of fifth-grade children to a meeting outlining the TV project. Parents were given an option at this meeting to elect tele-

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[1]Teaching by Television (Pittsburgh, Pa.: Pittsburgh Educational Station WQED, no date), p. 1.

vision teaching or conventional methods. They chose television.[1]

Three subjects were chosen for this initial undertaking of TV teaching: fifth-grade reading, arithmetic and French--all on the same grade level and to the same children. These subjects were telecast five days each week for the entire year. In reading and arithmetic, the TV teacher from WQED taught for twenty-five minutes; the classroom teacher used five minutes before the start of the program for preparation, and ten minutes following the telecast for the follow-up. TV lessons in French lasted twenty minutes, with most classes choosing to lay aside time for drill work, which, incidentally, was not required.[2]

By the end of the school year, 521 lessons were telecast in the three subjects to a total of 547 pupils who completed the courses. Attrition eliminated about ninety pupils through transfers, illness and similar normal causes.

Subsequent to the first few weeks of telecasting, many of the unknown factors pertaining to TV teaching began to clarify themselves. The children accepted TV teaching normally and smoothly; they related themselves easily to the TV teacher, followed her directions, answered questions and called her by name. Each child seemed to feel that the teacher was

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[1] Ibid., p. 4.

[2] Ibid., p. 7.

addressing herself directly to him alone, and as a result, a great degree of intimacy was developed between the pupil and teacher. The children experienced this feeling first, with the TV teachers voicing concern for want of contact and "feedback" from a classroom of live pupils. At the end of the year, however, the TV teachers indicated a high degree of personal satisfaction they had attained with the unseen children who made up their classes.[1]

Early in the school year, it was concluded that the interest of the pupils was not derivable from the novelty of TV teaching; for interest was maintained, and perhaps may have increased, as the lessons progressed.

Teachers reported no disciplinary problems while the TV lessons were received. On occasions when the teacher was not present in the class, the children would turn on the set and begin the lesson just as if the teacher were present.[2]

It was found that fathers and mothers were viewing the televised programs, watching how and what the children were being taught, and perhaps preparing to assist with homework. In conjunction with this practice, Dr. Earl A. Dimmick, superintendent of the Pittsburgh Public Schools, observed:

> The fact that these parents are following the education of their children more systematically than before is an interesting phenomenon, a sobering one,

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[1] Ibid., p. 7.

[2] Ibid., p. 7.

> and, in my judgment, one that is good for the schools and for the homes.[1]

Limitations of TV teaching too became evident following several weeks of telecasting. The design and arrangement of the classrooms were not suitable for TV teaching, for lighting, ventilation and seating frequently were incapable of being arranged for optimum reception of the lessons. Good reception did not obtain uniformly in every school. Charts, blackboards and similar visual aids appeared distinctly in some schools and indistinctly in others. The number of words that could be seen on the TV screen and still be visible from the back of the classroom did not exceed ten. The report does not comment on the pupils' inability to ask questions directly of the TV teachers. Perhaps it was not thought a problem by the Pittsburgh teachers; at least, during that first year of experimentation.[2]

In regard to achievement results at the end of the first year's experiment, Dr. Dimmick said:

> I am gratified with the results achieved...We had given standardized tests in May of 1954 and 1955 to the same classes which later participated in the Demonstration. We then gave the tests to the classes in May, 1956. Thus the 3rd and 4th grade growths were obtained under traditional teaching methods, while the 5th grade growth was obtained from the Television Teaching Demonstration. The results appear below:[3]

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[1] Ibid., p. 8.

[2] Ibid., p. 9.

[3] Ibid., p. 11.

* Median Annual Growth in Reading

Grade	School A	School B	School C
Third	.9	1.2	1.0
Fourth	1.6	.9	1.1
Fifth	2.3	1.9	1.4

Median Annual Growth in Arithmetic

Grade	School A	School B	School C
Third	1.3	1.2	.6
Fourth	.6	1.2	.8
Fifth	2.1	1.6	1.4

*1.0 indicates normal growth in a year of time.

The Pittsburgh experiment was repeated in the following year--1956-1957--and not one of the original twenty school districts withdrew. Another subject, social studies, was added that second year, and a more varied group of classrooms took part, apropos of the experimental nature of the project. A progressive school, a rural school and city schools with a more extensive mixture of pupils participated.[1]

Again in expanded form, the experiment continued in the third year with sixth grade reading, seventh grade English, and ninth grade general science added. In 1958-59 seven courses, including Russian, were telecast. Within the reach of WQED's transmitting power, more than 30,000 students in 351 public schools and several thousand parochial school students took part in one or more of these courses.[2]

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[1] Teaching by Television (New York: Ford Foundation, Office of Reports, 477 Madison Ave., May, 1959), p. 37.

[2] Ibid., p. 37.

The St. Louis Experiment. Again under a grant from The Fund for the Advancement of Education, the St. Louis, Missouri Public Schools launched an ITV program which began on February 8, 1956 and continued through June 6, 1956. This rather bold study was designed to test the hypothesis that it was possible to teach large groups of students effectively by the use of television alone. Subjects selected for study were ninth grade general science, ninth grade English composition and second grade spelling. A unique--at that time--aspect of the experiment was that instruction was to be given to large groups of pupils (up to 150 in number) by means of television alone, without any supplementary teaching of the receiving groups.[1]

For the science and English courses, TV instruction continued for one semester only, thirty minutes per day, five days per week. Pupils who received spelling telecasts participated for two semesters, twenty minutes per day, five days a week. Two public high schools and three public elementary schools in St. Louis took part in the experiment. Control groups were set up for the purpose of measuring and comparing achievement results with that of the ITV groups. Students in television courses were required to take notes, refer to their texts and take short quizzes and examinations. In some instances, even home work assignments were required.[2]

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[1]Earl G. Herminghaus, An Investigation of Television Teaching (St. Louis, Mo.: St. Louis Public Schools, February, 1957), p. 2.

[2]Ibid., p. 5.

It was thought that an inherent weakness of television teaching was lack of pupil-teacher interaction. In order to at least partially compensate for this deemed imperfection, every effort was made to stimulate pupil involvement in the lessons. Too, "feedback" was provided by daily reports from the receiving teachers to the TV teachers. The reports were mailed immediately after the lessons and reached the TV teachers the following morning, before the subsequent lesson was telecast. Such items as test results, absentees, assigned work, student interest, clarity of assignments and the like were covered by the daily reports.[1] The TV teachers considered this information decidedly valuable to them, and were particularly appreciative of the detailed comments that many of the classroom teachers added to the reports.

In comparing the achievements of the control and experimental groups, it was found that in English composition the television students, grouped in large classes, did as well as, and sometimes a little better, than the non-TV students; in the science courses, TV students did slightly better than conventional classes; and in the second grade spelling classes, achievement was equal between the groups tested on a second-grade level. It was noted, though, that the spelling control group made a significantly greater gain than the TV group on a test designed to measure spelling ability of pupils classi-

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[1] Ibid., p. 7.

fied above the second-grade level. The explanation that was given for this difference: "Normal classroom instruction resulted in greater learning of words above the level of grade placement of the group (second grade) than was true of the experimental group."[1]

Of course, future utilization of television for instructional purposes could not be made on the basis of this one experiment, involving but three courses. Much experimentation in the use of TV for particular teaching tasks had to be done before its full potential is approached and finally realized.

What was the reaction of St. Louis teachers, principals and students to this study? Subjective data were elicited from letters and questionnaires that were submitted for evaluation. As could be anticipated, teachers saw both advantages and shortcomings in ITV. Most frequent favorable comments were made in regard to the freedom and flexibility of the medium in its presentation of content. On the other hand, they thought that the most egregious disadvantage lay in the inability of TV to meet individual needs of students, and the unsatisfactory physical conditions immanent in the large-group nature of the classes. School principals, in general, concurred with the observations of the teachers.[2]

As for the students, most did not react favorably to

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[1] Ibid., p. 60.

[2] Ibid., p. 46.

the TV lessons. Over half of them indicated that they would have learned more in a conventionally-conducted classroom (notwithstanding their gain in achievement equalling that of the control group). Many said that they felt the TV course was less interesting than being in a regular class, and that they missed taking part in class discussions and asking questions directly of the teacher.[1]

The Philadelphia Experiment. The Philadelphia Public Schools have been engaged in instructional television for over a decade. "The uninterrupted cooperation that the schools have received from the commercial stations WFIL and WFIL-TV for 16 and eleven years respectively is a record which is unique and unmatched."[2] During that period virtually every subject in the curriculum had been telecast to the schools at one time or another, to every grade from kindergarten through twelfth grade. A good deal of the enrichment programs for the schools is provided by radio. Schools received such programs by radio as, "What's News" for grades 4-6; "Radioland Express," dramatized stories for grades 1-3; "Miracle of America," presented history and current affairs in dramatic form; and, "Three to Make Music," a music appreciation course.[3]

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[1] Ibid., p. 46.

[2] Division of Radio-Television Education Annual Report (Philadelphia, Pa.: Philadelphia Public Schools, June, 1958-August, 1959), p. 1.

[3] Ibid., p. 2.

Enrichment programs presented once a week and programs which present the major part of a course several times per week were beamed regularly from two TV stations: WFIL-TV, a commercial station, and WHYY-TV, the educational UHF station.

In 1957, the Philadelphia Public Schools began participating in a national experiment for teaching large classes by TV. This experiment was sponsored by the Fund for the Advancement of Education. Classes from 150 to 300 pupils were scheduled in in-school TV in nine schools during 1957-58, and in fifteen schools the following year. Both elementary and secondary schools participated in the experiment. Elementary school courses included fifth-grade social studies and science, and four sixth-grade language arts courses.[1]

At the end of the second year of experimentation, i.e., 1959, in teaching large classes by TV, standardized tests and teachers' opinions indicated that:[2]

1. The majority of pupils learned as effectively by TV in large classes as in standard classes. Pupils' achievement improved significantly in TV classes in subjects included in the experiment during both years.

2. Learning and teaching improved as pupils became accustomed to the large class situation and teachers acquired competence, skills and confidence in large class technique.

3. TV will not supplant teachers. The classroom teacher is an integral and important part of

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[1] Ibid., p. 4.

[2] Ibid., p. 7.

the plan. His or her skill, competence, enthusiasm and ingenuity determine to a large degree the quality of learning as well as attitude of pupils and parents toward the large class.

4. Time equivalent to eight and one-half full time teachers was saved this year. This was used for advanced work with gifted pupils, remedial work with slow pupils or extra supervision. These additional services were made possible by the experiment.

5. There are indications that variations of the experiment pattern will be continued after the projects terminate. Principals of seven schools not in the experiment requested and were granted additional TV receivers to permit the scheduling of classes to receive the junior high school mathematics and science TV lessons next year, (i.e., 1959-60).

6. The problem raised most frequently by teachers was that of providing for different levels of abilities within and among widely varying schools within one TV course. There was agreement that very slow pupils, who do not concentrate and who are restless and sometimes disturbed, should not be placed in large classes. Teachers' opinions differ on the achievement of slower and bright pupils in the TV classes. Discussion of the problem led to four suggested alternatives for further exploration:

   (a) An intensive study to discover techniques of maximum effectiveness to provide for individual differences in large classes. Several teachers indicated that more should and can be done to overcome the difficulties in this important aspect of the experiment.

   (b) The placing of pupils of all abilities except the very slow in the large classes to receive the TV lessons, but in homogeneous ability groupings in standard-sized classes for the follow-up periods.

   (c) The scheduling of only average pupils in large TV classes; and plac-

ing the bright and slower learners in separate, small classes made possible by teacher time released.

(d) A division of pupils in the large classes into two tracks on the basis of ability--one more rapid than the other. This would require two TV courses of the same subject, one more advanced than the other. The arrangement would be consistent with the multiple track organization now in operation in some school systems.

7. The second year of the experiment re-emphasized the serious need for proper classroom space in which to conduct large classes. Learnings were satisfactory in auditoriums, but teachers and pupils said that greater effort was required to overcome the lack of desks and difficult acoustical conditions. Where classes were moved from auditoriums to large classrooms during the second year, there was improvement in adjustment and attitudes.

8. There still is need for improved testing procedures in large classes to evaluate pupil achievement regularly, quickly, accurately and efficiently.

9. With forty-five minute periods in Philadelphia Schools, teachers prefer three TV lessons and two periods in regular-sized rooms per week in order to permit adequate time for follow-up, answering questions, testing, and laboratory experience.[1]

Some general observations that were compiled by Martha Gable, Director of Radio-Television Education of the Philadelphia Public Schools, regarding in-school television programs are noteworthy:[2]

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[1] Ibid., p. 8.

[2] Ibid., p. 6.

Children remember with surprising accuracy the material presented on television.

Children want to know more of the meanings, spelling and pronunciation of words they hear on the programs, and the new words concerning television itself.

Librarians and teachers continue to report that many children are stimulated to seek out reading material on subjects or stories presented.

Supervisors and directors of special subjects are delighted with the rapidity with which new procedures and techniques become general practice through the television and radio demonstrations.

In-service courses for teachers present tremendous possibilities for the improvement of instruction.

Teachers report that, in general, children in grades one to three respond better to a 15-minute program. However, the opinion seems to be developing that the length of the program should be determined by the difficulty of the material and concentration required to absorb it, and the general ability of the groups for which the telecasts are planned. Programs now are 15, 20, 25, and 30 minutes for varying reasons.

Teachers of pupils who are homebound or in hospitals report that the programs serve not only as a rich source of information, but that the isolated child feels a bond with his classmates in school as he receives the same lessons that they are receiving via television and radio.

Teachers and principals who teach slow learners report that such pupils acquire through television some of the facts and skills which they cannot learn through reading and which they are not interested in acquiring through other avenues.

The lack of color in television in no way limits the creative variations developed by children in classroom utilization of programs. Several schools have regular exhibitions of work produced by children as a result of the telecasts. The amount, variety, originality, color and quality are amazing.

In a relatively recent article, Miss Gable--who now has amassed <u>eleven</u> consecutive years of invaluable experience

in ITV--sets down several strikingly pertinent declarations relative to in-school instructional television:[1]

> The use of TV in education is not a cheaper form of education. When it is used to provide better and extra service, with superior teaching materials combined with the use of the most effective personnel, it is not less expensive. Any improvement of service in the past has cost money. The same is true of TV. The claim that it will save money in most school systems is misleading.
>
> Comparisons of TV teaching with traditional teaching frequently are made with assumptions of ideal conditions in the latter. Rather, the comparisons should be made with conditions as they exist in many schools throughout the country.
>
> It is important that teacher training institutions prepare teachers of the future to understand the techniques of utilization of this new medium, both for themselves and for the pupils they will teach.
>
> Perhaps one of the great contributions of TV is its making possible the sharing of talents of uncommon men to make common men uncommon.

The preceding resume of three specific in-school television experiments typifies the kind of work that has been done in that field. Of course, this is but an infinitesimal portion of the experimentation that is in actual progress. In addition to the forty-seven educational television stations now on the air, about 700 closed-circuit stations are also operating all over the country. Colleges, universities, the United States Army and various industries are making use of the new medium of communication.[2]

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[1]Martha A. Gable, "Some Benefits and Problems of School TV," National Association of Educational Broadcasters Journal (November, 1959), p. 15.

[2]Scanlon, "The Expanding Role...," p. 389.

Desiring to encourage even further experimentation in in-school television programming, The Fund initiated in 1957 The National Program in the Use of Television in the Public Schools, a nation-wide project embracing nearly 40,000 students in more than 200 elementary and secondary schools. Its main emphasis is testing large TV classes. The public school systems of Atlanta; Dade County (Miami), Florida; Detroit; Jefferson County, Kentucky; Milwaukee; Norfolk; Oklahoma City; Philadelphia; and Wichita, as well as scores of other school systems in Nebraska, North Carolina and Oklahoma participated in the first year of the project.[1]

An evaluating committee, headed by Herold C. Hunt, Eliot Professor of Education at the Harvard Graduate School of Education, was charged with the responsibility of appraising the "Program's" first year of operation. Realizing that testing and statistical procedures varied widely among the various school systems, the evaluating committee based its results only on comparisons in the TV and control classes that had been equated on the basis of scholastic aptitude and pretest, or in which differences between TV and non-TV classes had been taken into legitimate account.

The results clearly showed that students who received part of their instruction over TV in large classes did as well as--and in many cases significantly better than--students

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[1]Teaching by Television, Ford Foundation..., p. 46.

who were taught by regular techniques in small classes.[1] One hundred ten comparisons were made: sixty-eight favored the TV students and forty-two the non-TV students. There were thirty-eight cases where the difference in achievement was statistically significant; twenty-nine of these were in favor of the TV classes, and nine favored the non-TV groups.[2]

The committee noted many other favorable results; for example:

> The use of TV as a medium of instruction in many cases brought about a re-thinking of the curriculum and course objectives.
>
> By bringing superior teaching to the attention of a great many classroom teachers, TV proved to be a valuable means of improving the in-service training of teachers.
>
> Much to the surprise of some observers, school librarians reported that the TV students--stimulated by provocative teaching--were making more extensive use of the library than other students.
>
> Several school systems reported substantial savings in teaching positions and in classroom space--with no sacrifice of quality. Dade County, for example, saved the equivalent of twenty-seven teaching positions and twenty-nine classrooms. In other cities, the teacher time saved by the use of television in large classes made it possible to provide much more individualized instruction for slow learners and rapid learners.
>
> Tardiness and absences fell off sharply among students in TV classes.
>
> Except in a few isolated cases, discipline was not a problem in the large classes.[3]

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[1] Ibid., p. 54.

[2] Ibid., p. 54.

[3] Ibid., p. 56.

It is understandable that many problems were encountered in the first year of experimentation by the "Program." The evaluating committee cited the following as the most insoluble as the Program entered its second year:

> Inadequate facilities for large classes. Auditoriums and cafeterias were found unsatisfactory.
>
> Finding, recruiting and training studio teachers.
>
> Training classroom teachers in the techniques of large classes, particularly in the techniques of eliciting student participation.
>
> Students, too, need to learn the techniques of learning in a large-class situation. Much remains to be learned about the nature of student participation and the various forms it can take.
>
> Integrating the telecast part of the lesson and the classroom follow-up into a unified, meaningful whole.
>
> Reorganizing the curriculum to take maximum advantage of TV as a teaching tool.
>
> Adapting the new techniques of teaching by TV to the varying abilities of the students.
>
> Scheduling, with respect to the time of the day the lesson is telecast and also with respect to the duration of the telecast and its place in the class period.
>
> Finally, there is the never-ending problem of quality. TV is neutral as a conveyer of ideas, concepts and information. Quality of output can only be as good as the quality of the input. A mediocre teacher on TV communicates her mediocrity to a much wider audience than a mediocre teacher in the classroom.[1]

Selected studies on teachers' attitudes. As stated earlier in this study, very few research problems have focused

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[1] Ibid., p. 58.

exclusively on assessing classroom teachers' opinions, attitudes and reactions toward in-school instructional television programs. Now three will be reviewed briefly.

Kumata's Inventory listed one title regarding this aspect of ITV: Teacher Reaction to TV and Radio Programs Presented 1952-1953.[1] Teachers of twenty-one Baltimore Public Schools were asked to react to thirteen programs, both in-school and public relations, that were conducted in that city. It was reported that the teachers' majority reactions were favorable to each of the thirteen programs included in this survey.

ETV Station KQED in San Francisco conducted a survey of 1,210 teachers to evaluate its first year of in-school TV instruction. The most significant aspect of the survey revealed that 95 per cent of the teachers contacted agreed to continued ITV participation. And this position was indicated despite widespread administrative apathy among the participating school districts. Another interesting result showed that over 60 per cent of the teachers felt that the above-average students benefited most from TV instruction. Only a third of the teachers thought that the average students were the prime beneficiaries. The survey concluded that ITV's outstanding contributions to regular school programs were: "Furnishing otherwise unavailable illustrative materials, introducing new

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[1]Kumata, Inventory..., p. A-28

concepts and permitting the use of outstanding teachers before many classes at one time."[1]

During the 1958-1959 school year, the Cincinnati, Ohio Public Schools participated in an experiment on in-school instructional television. Sixth-grade science, seventh-grade mathematics and ninth-grade biology courses were taught via television. At the end of the school year, two staff members of the schools, James N. Jacobs and Joan Bollenbacher, prepared and administered a nineteen-item questionnaire assaying the opinions and attitudes of the teachers who took part in the experiment. Twenty-eight questionnaires were sent to classroom teachers who had received the telecast programs. Twenty-six questionnaires were returned. Subsequent to an analysis of the returned questionnaires, the following conclusions were presented:

> Most teachers feel that instructional television is an asset to education, although reaction is evenly divided as to whether they would be willing to engage another class in television and whether they receive personal satisfaction in television classes that they do in regular classes.
>
> About half the teachers feel that a similar degree of comprehensiveness of instruction can be achieved in the conventional classroom as compared to the television instruction.
>
> Almost all the teachers felt that the quality of television instruction was high and that they obtained and were applying many good ideas regarding teaching methods.

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[1] RCA Educational TV News (Camden, N.J.: Radio Corporation of America, January, 1960), p. 1.

> Teachers are evenly divided as to whether they feel students are learning as much by television as they should, but they do not feel the articulation on the television lesson and the classroom portion of instruction is a serious problem. They do believe that the effectiveness of television instruction depends upon the course being televised.
>
> In the teachers' judgment, pupils viewing television do not tend to be restless.
>
> Teachers find that subjects taught by television result in a teaching load equal to or greater than the normal load incurred in the conventional classroom.
>
> Most teachers do not believe that television instruction will lead to a regimentation and curriculum rigidity. No teacher felt that instructional television would threaten his job.[1]

Arnold Perry, Dean of the School of Education at the University of North Carolina, recently completed a thirty-month visitation and observation trip. He visited and observed the reception of TV lessons in thirty-seven of the large classes in the National Program in the use of Television and twelve additional classes in Hagerstown and other cities in which ITV programs were conducted. One of his most cogent comments regarding this rich experience of observations was: "The most frequent argument used against teaching by TV is that it is 'one-way' communication, that students do not have an opportunity to ask questions and make comments as the lesson proceeds."[2]

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[1]James N. Jacobs and Joan Bollenbacher, "Teacher and Pupil Opinions of Instructional Television," Bulletin of the National Association of Secondary School Principals, XLIV (March, 1960), pp. 71-75.

[2]Arnold Perry, "Teaching by Television in Today's Schools," The Educational Forum, XXIV (May, 1960), p. 392.

The television medium is a complex instrument. The studies just reviewed definitely show that many problems still remain unsolved in ITV. Only continued experimentation coupled with careful research and analysis will help dissolve many of the problems now inhibiting the effectiveness of some phases of instructional television teaching.

A keener and greater awareness of teachers' attitudes toward ITV--an awareness minutely reflected in the current literature--should help shed more light upon these problems.

CHAPTER III

THE METHODOLOGY

Selecting an approach. Once the problem of the study was outlined, it was necessary to design a procedure by which it could best be attacked. One of the fundamental steps of the problem was to obtain the opinions and attitudes of as many ITV participating classroom teachers and school administrators as possible within the Channel 10 area. To achieve this end, several possible techniques were carefully examined; and the normative-survey method ultimately chosen as being ideally fitted for the purposes of this investigation. Regarding this method, Good, et al. point out:

> Values of normative-survey data...may aid in solving practical problems, it may be said that this kind of data will probably be more highly regarded by the administrator in helping him solve practical problems than are the principles and laws growing out of experimentation in the laboratory.[1]

They add further that:

> ...Normative-survey method may reveal practices or conditions which are well above average, representing advanced thinking and administration; the method is also helpful because it tends to focus attention on needs that might otherwise remain unobserved...normative method may call attention to current trends and permit people to evaluate and direct these new tendencies which are taking shape...[2]

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[1]Carter V. Good, A.S. Barr and Douglas E. Scates, The Methodology of Educational Research (New York: Appleton-Century-Crofts, Inc., 1941), p. 291.

[2]Ibid., p. 292.

A second fundamental step of the problem was to make a comparison study of teachers' and administrators' attitudes over an extended period of time. For this purpose, the "panel" was chosen as being the most preferred. Zeisel defines a panel as a group of people from whom data are obtained on two or more occasions over an extended period of time. He says:

> The panel is thus undoubtedly a superior tool when we study attitudes or behavior...It may be successfully used in investigating changing patterns of purchasing habits, radio listening, or political attitudes or any other social process. And it is undoubtedly a better tool of analysis than the simple probing into memory in one single interview.[1]

One final point of Zeisel's is stressed:

> In most cases an observed change in a panel will be of higher statistical significance than a change of equal size observed in repeated cross-sections that equal the panel in size and structure.[2]

One of the basic techniques utilized in the normative-survey method involves the use of the questionnaire. Because the potential subjects of this study were scattered over a relatively extensive area, the questionnaire seemed the most feasible mode of securing responses to certain queries pertinent to the study. Generally, questions on questionnaires are of a factual nature, but may however, "...ask for opinions, and it (questionnaire) may be used to afford an insight into the attitudes of a group. In fact, there is no sharp dividing

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[1]Hans Zeisel, Say It With Figures (New York: Harper Brothers, 1947), p. 213.

[2]Ibid., p. 215.

line between a questionnaire and a test, though they differ significantly in their common forms."[1]

For the intent of this study, it was necessary to prepare two questionnaires; a structured interview outline was also prepared for a few but intensive personal interviews.

Preparation of the first questionnaire. Discussions with classroom teachers, administrators and an examination of the literature had already provided the data that was to be included in the questionnaires. At the same time, it was realized that the phrasing of questions would prove to be of vital importance, if the responses were to have any validity whatever. Accordingly, Good, et al.[2] and Payne[3] were used as basic references for guidance in the wording of the questions.

The first draft of the questionnaire was composed and submitted to members of the investigator's doctoral committee for evaluation. Several emendations and modifications were incorporated into a revised draft. The second draft was approved for pre-testing with six classroom teachers and four school administrators who had had experience with in-school instructional television. Again, minor changes and suggestions were noted and incorporated into a third draft of the question-

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[1]Good, Barr and Scates, The Methodology..., p. 325.

[2]Ibid., p. 337-344.

[3]Stanley L. Payne, The Art of Asking Questions (New Jersey: Princeton University Press, 1951), pp. 5-125.

naire, which, along with an introduction to the questionnaire, was approved by members of the doctoral committee for distribution. Two different introductions were prepared: one was addressed to those teachers and administrators who had already participated in ITV programs; and the second, to those who were about to take part in ITV for the first time. The questions themselves, thirty-two on the first questionnaire, were precisely the same for each group on the initial distribution. (Appendix A)

Approximately 325 questionnaires, each accompanied with a self-addressed and stamped envelope, were sent in the first week of September, 1959 directly to administrative heads of school systems encompassed by the Channel 10 area. However, the questionnaires were sent only to those systems that were known to have participated, or were about to participate for the first time in the ITV programs. Notwithstanding the introductions to the questionnaires, separate letters were also sent to these administrators reiterating the intent of the study and soliciting cooperation in the distribution of the questionnaires to the proper teachers and administrators.

The questionnaires were sent directly to <u>administrative</u> heads because in a study on "questionnaires returned," See[1] discovered that a greater proportion of returns was obtained when the original request was sent to an administrative head

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[1]Harold W. See, "Send It To The President," <u>Phi Delta Kappan</u>, XXXVIII (January, 1957), p. 130.

of an organization, rather than directly to the person who had the desired information. Of the 325 questionnaires distributed, 265 or 81.5 per cent were returned. That so many educators responded was deeply gratifying; but no less than it would be expected of earnest and conscientious members who are on the whole anxious to be helpful and cooperative in the name of the teaching profession.

Dividing the respondents. In order that the data of the study could be submitted to a more comprehensive treatment and analysis, it was decided to divide the participants into several subgroups. The two main divisions, of course, were teachers and administrators. These were subdivided into "Experienced with ITV" and "Non-experienced with ITV" groups. One additional subdivision was made on the basis of over-all teaching experience: groups of five years or less in the teaching profession, and groups with over five years of experience.

Obviously, this grouping offered a considerably wider gamut of comparisons for the analysis of data. The various subgroups could be compared with each other, and each subgroup against the total data.

Method of analyzing the data. Two approaches were used in the treatment of the data. In the first, the responses have been dealt with through the frequency counts which were then converted into percentages. On the basis of these data it was possible to discern significant attitudes and opinions, and then later to compare them with data educed from the

second questionnaire. The second approach was designed more specifically to test Hypothesis 1, which stated that a year's experience with ITV would diminish classroom teachers' apprehensions toward it. Key questions on the questionnaires were designed to indicate positive, negative or neutral attitudes toward ITV. The responses to the questions were weighted on a five-point scale rather than a three-point scale, for some questions provided for two intermediate degrees of attitude expression. (Appendix D)

The last question on each questionnaire was a combination "structured" and "open-end" query. Its salient raison d'etre was to elicit or identify problems that were not covered in the other questions; and, moreover, to provide an opportunity for the respondents to react generally to ITV. Many of the responses to the last question were of the essay or "narrative" type. These responses were classified, tabulated, analyzed and incorporated into the over-all interpretation of the data.

Preparation of the second questionnaire. The same procedure for the preparation of the second questionnaire was followed as for the first. Three questions were included in the first questionnaire but omitted on the second because they were no longer relevant; two new questions were added to the second questionnaire, making a total of thirty-one. With the exception of these changes, the questions remained indentical on both questionnaires. (Appendix B)

In the first week of June, 1960, 265 questionnaires with self-addressed and stamped envelopes were again distributed (through administrative heads) to those educators who had responded to the first. June 17, 1960 was set as a deadline for responding to the questionnaires because most school systems in the Channel 10 area would have completed their school year on or before that date.

Returned questionnaires totaled 257. Of these, 232 or 87.5 per cent were from teachers and administrators who had responded to the first questionnaire and had participated in the ITV program during the past year. Hence, this group comprised the "panel" of this study. For the most part, attrition from the original group of 265 respondents was the result of resignations, transfers to grade levels not participating in ITV, and in a few instances, dropping out of the ITV programs.

Preparation of the structured interview outline. Subsequent to an initial analysis of the data from the two questionnaires, a first draft of the structured interview outline that was to be utilized for personal interviews was drawn up and submitted to members of the doctoral committee for appraisal. Changes and suggestions before and after pre-testing were incorporated and the final draft of the outline was composed and received the approval of the members of the doctoral committee. (Appendix C)

Personal interviews. The personal interviews of five classroom teachers and two elementary school principals were

held during the month of November, 1960. Tape recordings were made of the interviews--which varied from forty to sixty minutes in length--so that responses could be checked and tabulated with the necessary care and accuracy. It was felt, too, that tape recordings would greatly lessen any possible tendency for mis-interpretation of the responses, and thus enhance the validity of data analysis.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The respondent population. The population under study consisted of 232 elementary grade teachers--grades three through six--and administrators representing 14 different school districts within a 40-mile radius of WMSB-TV's transmitting tower at Onondaga, Michigan. All of the respondents were employed in urban or consolidated schools; none was from a one-room school.

Of the 43 administrators included in the population, 17 were males, and all but 7 (females) had earned the master's degree. The mean number of years in the teaching profession for this group was 23, ranging from a minimum of 7 years to a maximum of 39 years.

The 189 teachers included 11 males, 8 of whom had bachelor's degrees and 3 with master's. Eight of the female respondents failed to indicate the type of degrees they held or how long they had been teachers. Hence, of the 170 teachers responding to these specific questions, 125 possessed bachelor's and 35 master's degrees. Six teachers revealed they held no degrees, and 4 had earned life certificates. The teachers averaged 13.5 years in teaching, from a low of "no experience" to a high of 41 years.

For the entire group--teachers and administrators--the

mean number of years in teaching was 16.6. Not a directly relevant, but perhaps a noteworthy fact was that the group as a whole represented more than 3,413 years of teaching experience.

Presentation of data. It will be recalled that all data were secured from two sets of questionnaires (the first set distributed in the first week of September, 1959 and the second set in the first week of June, 1960) and seven follow-up personal interviews that were conducted in the last week of November, 1960.

Since it was not the paramount intent of the study to make comparisons between divers school districts, the tabulations will represent the total differences of responses between teachers and administrators, between teachers experienced and inexperienced with ITV, and between teachers with over five years experience as classroom teachers and those with five years and less as classroom teachers.

The presentation and interpretation of data will be given in four sections: section 1 will deal with frequency counts computed to percentages of all teachers and administrators on every question included in both questionnaires with the exception of the open-end questions; section 2 will present and analyze the attitude changes toward ITV of teachers and administrators; section 3 will analyze what are considered to be the more significant items on the questionnaires; and section 4 will present and analyze the results of the open-end questions of both questionnaires. The data secured from

the personal interviews will be incorporated into the general presentation of the results and analysis wherever deemed appropriate.

TOTAL TABULATION RESULTS

Tables 1 and 2 present the total responses of teachers and administrators to all but the open-end questions on both questionnaires. The responses to each question are shown in frequency counts, which were in turn converted into percentages to provide a more distinct comparison ratio. On the basis of these data it was possible to discern significant changes in responses over the nine-month period--from September, 1959 to June, 1960--of participation in ITV by the respondents.

ATTITUDE CHANGES TOWARD ITV

The questions on the questionnaires designed to reflect attitudes toward ITV (they are preceded by a + sign in Table 1) were scored on a five-point scale from one to five. For example, Question 5, "Do you think that the rate of content coverage by the TV instructor will prove to be a problem?" provided for four possible answers: 1) big problem, 2) small problem, 3) no problem, and 4) don't know. For this particular question the weighting was thus:

Big problem	1
Small problem	4
No problem	5
Don't know	3

(Continued p. 80)

TABLE 1

TOTAL FREQUENCY REPLIES OF TEACHERS AND ADMINISTRATORS

	Answer	(N = 189**) Teachers 1st Q** N	%	2nd Q** N	%	(N = 43**) Administrators 1st Q** N	%	2nd Q** N	%	(N = 232**) Grand Totals 1st Q** N	%	2nd Q** N	%
1. Do you think that classroom teachers who will receive ITV programs need special training in order to be better able to handle TV instruction?	Yes	55	29.1	56	29.6	20	46.5	20	46.5	75	32.3	76	32.8
	No	95	50.3	118	62.4	20	46.5	20	46.5	115	49.6	138	59.5
	Don't know	39	20.6	15	7.9	3	7.0	3	7.0	42	18.1	18	7.7
2. Do you think that ITV can meet the same needs as are met by the special teacher (for example, the art teacher?)	Yes	59	31.2	61	32.2	11	25.6	11	25.6	70	30.2	72	31.0
	No	91	48.1	106	56.1	29	67.4	31	72.1	120	51.7	137	59.1
	Don't know	38	20.1	22	11.6	3	7.0	1	2.3	42	18.1	23	9.9
+ 3. What do you think the initial reaction of pupils will be toward TV?	Favorable	168	88.9	151	79.9	43	100.0	36	83.7	211	90.9	187	80.6
	Unfavorable	1	.5	5	2.6	0	0.0	0	0.0	1	.4	5	2.1
	Indifferent	10	5.3	25	13.2	0	0.0	3	7.0	10	4.3	28	12.1
	Don't know	10	5.3	8	4.2	0	0.0	4	9.3	10	4.3	12	5.2
+ 4. What do you think the pupils' reaction will be over a period of time?	Increasingly unfavorable	30	15.9	65	34.4	9	20.9	7	16.3	39	16.8	72	31.0
	Increasingly favorable	60	31.7	40	21.2	14	32.6	14	32.6	74	31.9	54	23.3
	Unchanged	25	13.2	81	42.9	11	25.6	21	48.8	36	15.5	102	44.0
	Don't know	74	39.2	3	1.1	9	20.9	1	2.3	83	35.8	4	1.7
+ 5. Do you think that the rate of content coverage by the TV instructor will prove to be a problem?	Big problem	52	27.5	37	19.6	13	30.2	5	11.6	65	28.0	42	18.1
	Small problem	64	33.9	80	42.3	24	55.8	22	51.2	88	37.9	102	44.0
	No problem	30	15.9	59	31.2	2	4.7	7	16.3	32	13.8	66	28.4
	Don't know	43	22.7	13	6.9	4	9.3	9	20.9	47	20.3	22	9.5

*Q Denotes "questionnaire."
+ Questions measuring attitudes
** Unless otherwise indicated

TABLE 1 - Continued

	Answers	Teachers 1st Q N	Teachers 1st Q %	Teachers 2nd Q N	Teachers 2nd Q %	Administrators 1st Q N	Administrators 1st Q %	Administrators 2nd Q N	Administrators 2nd Q %	Grand Totals 1st Q N	Grand Totals 1st Q %	Grand Totals 2nd Q N	Grand Totals 2nd Q %
6. Do you think that the TV teacher will have teaching aids and resources superior to that of the classroom teacher?	Always	27	14.3	27	14.3	7	16.3	2	4.7	34	14.6	29	12.5
	Usually	119	63.0	100	52.9	33	76.6	28	65.1	152	65.5	128	55.2
	Sometimes	41	21.7	59	31.2	3	7.0	11	25.6	44	19.0	70	30.2
	Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Don't know	2	1.0	3	1.6	0	0.0	2	4.6	2	.9	5	2.1
+ 7. How do you think that the use of ITV will affect classroom discipline?	Improve it	21	11.1	11	5.8	8	18.6	3	7.0	29	12.5	14	6.0
	No effect	128	67.7	159	84.1	31	72.1	37	86.0	159	68.5	196	84.5
	Worsen it	4	2.1	6	3.2	0	0.0	1	2.3	4	1.7	7	3.0
	Don't know	36	19.0	13	6.9	4	9.3	2	4.7	40	17.2	15	6.5
+ 8. What effect do you think that ITV in the classroom will have on the prestige of the classroom teacher?	Increase it	19	10.0	7	3.7	9	20.9	3	7.0	28	12.1	10	4.3
	No effect	139	73.5	154	81.5	28	65.1	38	88.4	167	72.0	192	82.8
	Decrease it	5	2.6	1	0.5	2	4.7	1	2.3	7	3.0	2	.9
	Don't know	26	13.8	27	14.3	4	9.3	1	2.3	30	12.9	28	12.1
+ 9. Do you think that the teaching techniques used by the ITV teacher will be helpful to you in making your own presentations?	Yes	145	76.7	114	60.3	35	81.4	17	39.5	180	77.6	131	56.5
	No	15	7.9	54	28.6	2	4.7	4	9.3	17	7.3	58	25.0
	Don't know	29	15.3	21	11.1	6	13.9	22	51.2	35	15.1	43	18.5
10. How would you intend to use ITV in your classroom?	Regular but supplementary resource	160	84.7	139	73.5	40	93.0	39	90.7	200	86.2	178	76.7
	As a main resource	15	7.9	19	10.1	2	4.7	1	2.3	17	7.3	20	8.6
	Only incidentally	14	7.4	31	16.4	1	2.3	3	7.0	15	6.5	34	14.7

TABLE 1 - Continued

	Answers	Teachers 1st Q N	Teachers 1st Q %	Teachers 2nd Q N	Teachers 2nd Q %	Administrators 1st Q N	Administrators 1st Q %	Administrators 2nd Q N	Administrators 2nd Q %	Grand Totals 1st Q N	Grand Totals 1st Q %	Grand Totals 2nd Q N	Grand Totals 2nd Q %
+ 11. What effect do you think that taking part in ITV will have on the problem of maintaining ability groups (for example, reading groups) at different levels of progress?	Increase it	38	20.1	17	9.0	8	18.6	2	4.7	46	19.8	19	8.2
	Decrease it	29	15.3	9	4.8	4	9.3	2	4.6	33	14.2	11	4.7
	No effect	65	34.4	119	63.0	18	41.9	19	44.2	83	35.8	138	59.5
	Don't know	57	30.2	44	23.2	13	30.2	20	46.5	70	30.2	64	27.6
12. Do you think that ITV programs would be better suited to pupils of one ability level?	Yes	65	34.4	50	26.5	13	30.2	13	30.2	78	33.6	63	27.1
	No	91	48.1	104	55.0	21	48.8	24	55.8	112	48.3	128	55.2
	Don't know	33	17.5	35	18.5	9	20.9	6	14.0	42	18.1	41	17.7
+ 13. Do you think that the necessity of preparing the entire classroom for an ITV program would reduce the effectiveness of your ability grouping?	Yes	65	34.4	50	26.5	13	30.2	13	30.2	78	33.6	63	27.2
	No	91	48.1	104	55.0	21	48.8	23	53.5	112	48.3	127	54.7
	Don't know	33	17.5	35	18.5	9	20.9	7	16.3	42	18.1	42	18.1
+ 14 What is your reaction to the necessity of planning your regular classes around a rigid ITV time schedule?	Difficult & undesirable	25	13.2	30	15.9	4	9.3	3	7.0	29	12.5	33	14.2
	Difficult but desirable	128	67.7	108	57.1	35	81.4	33	76.7	163	70.2	141	60.8
	Easy, no problem	21	11.1	32	16.9	4	9.3	3	7.0	25	10.8	35	15.1
	Don't know	15	7.9	19	10.1	0	0.0	4	9.3	15	6.5	23	9.9
15. (On 2nd questionnaire only) Was the time at which the ITV programs were scheduled a satisfactory one, or would you have preferred another time?	Satisfactory			135	72.2			34	87.2			169	74.8
	Would have preferred a.m.			14	7.5			1	2.6			15	6.6
	p.m.			38	20.3			4	10.2			42	18.6

TABLE 1 - Continued

	Answers	Teachers 1st Q N	%	Teachers 2nd Q N	%	Administrators 1st Q N	%	Administrators 2nd Q N	%	Grand Totals 1st Q N	%	Grand Totals 2nd Q N	%
+ 15/16. *In your opinion, how do you think the use of ITV in the classroom will affect the amount of learning by the a) bright pupils?	More	136	72.0	124	65.6	34	79.1	24	55.8	170	73.3	148	63.8
	Less	2	1.0	6	3.2	0	0.0	0	0.0	2	.9	6	2.6
	About the same	30	15.9	36	19.0	8	18.6	5	11.6	38	16.4	41	17.7
	Don't know	21	11.1	23	12.2	1	2.3	14	32.6	22	9.5	37	15.9
b) average pupils	More	107	56.6	76	40.2	25	58.1	17	39.5	132	56.9	93	40.1
	Less	3	1.6	7	3.7	0	0.0	3	7.0	3	1.3	10	4.3
	About the same	58	30.7	85	45.0	14	32.6	12	27.9	72	31.0	97	41.8
	Don't know	21	11.1	21	11.1	4	9.3	11	25.6	25	10.8	32	13.8
c) slower pupils	More	81	42.9	42	22.2	18	41.9	12	27.9	99	42.7	54	23.3
	Less	22	11.6	24	12.7	4	9.3	5	11.6	26	11.2	29	12.5
	About the same	58	30.7	80	42.3	13	30.2	12	27.9	71	30.6	92	39.6
	Don't know	28	14.8	43	22.8	8	18.6	14	32.6	36	15.5	57	24.6
+ 16/17. How do you think ITV in your classroom would affect children's attitude toward school in general?	Favorably	120	63.5	50	26.4	30	69.8	18	41.9	150	64.6	68	29.3
	No effect	47	24.9	99	52.4	8	18.6	16	37.2	55	23.7	115	49.6
	Unfavorably	6	3.2	7	3.7	0	0.0	0	0.0	6	2.6	7	3.0
	Don't know	16	8.5	33	17.5	5	11.6	9	20.9	21	9.1	42	18.1
+ 17/18. Do you think that the inability of the pupils to ask questions directly of the ITV teacher will prove to be a handicap?	Great handicap	34	18.0	26	13.8	3	7.0	7	16.3	37	15.9	33	14.2
	Minor handicap	111	58.7	91	48.1	37	86.0	26	60.5	148	63.8	117	50.4
	No handicap	26	13.8	54	28.6	3	7.0	5	11.6	29	12.5	59	25.4
	Don't know	18	9.5	18	9.5	0	0.0	5	11.6	18	7.8	23	9.9

* First number identifies question on first questionnaire, and the second number identifies same question on second questionnaire.

TABLE 1 - Continued

	Answers	Teachers 1st Q N	%	Teachers 2nd Q N	%	Administrators 1st Q N	%	Administrators 2nd Q N	%	Grand Totals 1st Q N	%	Grand Totals 2nd Q N	%
18/19. What effect do you think taking part in ITV will have on your lesson preparation time for the subject covered by TV?	Increase it	80	42.3	78	41.3	23	53.5	17	39.5	103	44.4	95	40.9
	Decrease it	33	17.5	25	13.2	4	9.3	3	7.0	37	15.9	28	12.1
	Have no effect	46	24.3	67	35.4	8	18.6	5	11.6	54	23.3	72	31.0
	Don't know	30	15.9	19	10.1	8	18.6	18	41.9	38	16.4	37	15.9
+ 19/20. What effect do you think taking part in ITV would have on children's academic interests? For example: a) reading	Increase them	94	49.7	70	37.0	30	69.8	19	44.2	124	53.4	89	38.4
	Decrease them	8	4.2	4	2.1	1	2.3	0	0.0	9	3.9	4	1.7
	No effect	34	18.0	60	31.7	4	9.3	5	11.6	38	16.4	65	28.0
	Don't know	53	28.0	55	29.1	8	18.6	19	44.2	61	26.3	74	31.9
b) social studies	Increase them	129	68.3	98	51.9	36	83.7	24	55.8	165	71.1	122	52.6
	Decrease them	4	2.1	4	2.1	0	0.0	0	0.0	4	1.7	4	1.7
	No effect	18	9.5	46	24.3	1	2.3	6	14.0	19	8.2	52	22.4
	Don't know	38	20.1	41	21.7	6	14.0	13	30.2	44	19.0	54	23.3
c) science	Increase them	141	74.6	92	48.7	38	88.4	29	67.4	179	77.1	121	52.1
	Decrease them	1	.5	6	3.2	1	2.3	0	0.0	2	.9	6	2.6
	No effect	13	6.9	42	22.2	0	0.0	3	7.0	13	5.6	45	19.4
	Don't know	34	18.0	49	25.9	4	9.3	11	25.6	38	16.4	60	25.9
+20/21. What effect would you expect classroom ITV programs to have on work-study skills? For example: a) Listening	Increase them	145	76.7	103	54.5	38	88.4	27	62.8	183	78.9	130	56.0
	Decrease them	6	3.2	11	5.8	0	0.0	2	4.6	6	2.6	13	5.6
	No effect	19	10.0	51	27.0	2	4.6	2	4.7	21	9.0	53	22.8
	Don't know	19	10.1	24	12.7	3	7.0	12	27.9	22	9.5	36	15.5

TABLE 1 - Continued

	Answers	Teachers 1st Q N	%	Teachers 2nd Q N	%	Administrators 1st Q N	%	Administrators 2nd Q N	%	Grand Totals 1st Q N	%	Grand Totals 2nd Q N	%
b) Note-taking	Increase them	75	39.7	64	33.9	25	58.1	12	27.9	100	43.1	76	32.8
	Decrease them	12	6.3	4	2.1	1	2.3	0	0.0	13	5.6	4	1.7
	No effect	51	27.0	76	40.2	8	18.6	9	20.9	59	25.4	85	36.6
	Don't know	51	27.0	45	23.8	9	20.9	22	51.2	60	25.9	67	28.9
c) Organizing research data	Increase them	65	34.4	39	20.6	26	60.5	11	25.6	91	39.2	50	21.5
	Decrease them	6	3.2	9	4.8	0	0.0	0	0.0	6	2.6	9	3.9
	No effect	35	18.5	78	41.3	7	16.3	12	27.9	42	18.1	90	38.8
	Don't know	83	43.9	63	33.3	10	23.2	20	46.5	93	40.1	83	35.8
21/22. What effect do you think participating in ITV would have on the evaluating techniques for the subjects covered?	Need new techniques	84	44.4	59	31.2	24	55.8	18	41.9	108	46.6	77	33.2
	Old techniques adequate	27	14.3	30	15.9	7	16.3	3	7.0	34	14.6	33	14.2
	Don't know	78	41.3	100	52.9	12	27.9	22	51.2	90	38.8	122	52.6
		(N = 175)		(N = 184)		(N = 38)		(N = 38)		(N = 213)		(N = 222)	
22/23. What would you say is the maximum number of children who could comfortably watch an ITV program on one 21" receiver in the room?	15-20	25	14.3	12	6.5	2	5.3	9	23.7	27	12.7	21	9.4
	20-25	61	34.9	54	29.3	8	21.0	21	55.3	69	32.4	75	33.8
	25-30	59	33.7	83	45.1	22	57.9	6	15.8	81	38.0	89	40.1
	30-35	24	13.7	23	12.5	6	15.8	2	5.3	30	14.1	25	11.3
	Others	6	3.4	12	6.5	0	0.0	0	0.0	6	2.8	12	5.4
23. (On first questionnaire only) What was the reaction of teachers in your building when asked to participate?	Eager to participate	(N = 227)* 74	32.6			30	69.8			(N = 270) 104	38.5		
	Reluctant to participate	58	25.6			5	11.6			63	23.3		
	Indifferent	33	14.5			2	4.7			35	13.0		
	Don't know	62	27.3			6	13.9			68	25.2		
24. (See last page of Table 1)													

*Includes all teachers who responded to first questionnaire; attrition reduced this number to 189 teachers who responded to both questionnaires.

TABLE 1 - Continued

	Answers	Teachers 1st Q N	%	Teachers 2nd Q N	%	Administrators 1st Q N	%	Administrators 2nd Q N	%	Grand Totals 1st Q N	%	Grand Totals 2nd Q N	%
+ 25. Do you think teachers in general would resent having their pupils taken over by the ITV instructor?	Yes	34	18.0	10	5.3	12	27.9	1	2.3	46	19.8	11	4.7
	No	119	63.0	143	75.7	28	65.1	36	83.7	147	63.4	179	77.2
	Neutral	15	7.9	11	5.8	2	4.7	6	14.0	17	7.3	17	7.3
	Don't know	21	11.1	25	13.2	1	2.3	0	0.0	22	9.5	25	10.8
+ 26. In general, what do you think is the attitude of your pupils' parents toward ITV in your classroom?	Favorable	64	33.9	88	45.8	34	79.1	30	69.8	98	42.2	118	50.9
	Unfavorable	10	5.3	7	3.7	0	0.0	0	0.0	10	4.3	7	3.0
	Neutral	34	18.0	55	29.9	9	20.9	10	23.2	43	18.5	65	28.0
	Don't know	81	42.8	39	20.6	0	0.0	3	7.0	81	34.9	42	18.1
		(N = 218)								(N = 261)			
27. Were the parents of your pupils informed formally by the school administration that their children would be participating in an ITV program?	Yes	67	30.7			21	48.8			88	33.7		
	No	51	23.4			17	39.5			68	26.1		
	Don't know	100	45.9			5	11.6			105	40.2		
						(N =33)				(N = 222)			
28. If not formally, how many of your pupils' parents have been notified in some manner by a school representative that their children would be participating in ITV?	All	51	27.0			17	51.5			68	30.6		
	Nearly all	20	10.6			7	21.2			27	12.2		
	About half	3	1.6			1	3.0			4	1.8		
	Few	3	1.6			2	6.1			5	2.2		
	None	6	3.2			1	3.0			7	3.2		
	Don't know	106	56.1			5	15.2			111	50.0		
+ 29. Do you think that participation in ITV will make a contribution to the pupils' learning situation over and above what you are now doing in the classroom?	Yes	148	78.3	150	79.4	38	88.4	39	90.7	186	80.2	189	81.5
	No	10	5.3	18	9.5	0	0.0	1	2.3	10	4.3	19	8.2
	No change	8	4.2	7	3.7	1	2.3	1	2.3	9	3.9	8	3.4
	Don't know	23	12.2	14	7.4	4	9.3	2	4.7	27	11.6	16	6.9

TABLE 1 - Continued

	Answers	Teachers 1st Q N	%	Teachers 2nd Q N	%	Administrators 1st Q N	%	Administrators 2nd Q N	%	Grand Totals 1st Q N	%	Grand Totals 2nd Q N	%
				(N = 184)				(N = 41)				(N = 225)	
30. In your opinion how does ITV compare with instructional films in the classroom?	TV better			42	22.2			5	11.6			47	20.9
	Films better			24	12.7			4	9.3			28	12.4
	No difference			7	3.7			4	9.3			11	4.9
	Depends on purpose of film or TV			111	58.7			28	65.1			139	61.8
+ 30/28. As a professional educator how do you feel toward expanding the use of ITV in American schools?	Very favorably	43	22.8	30	15.9	9	20.9	9	20.9	52	22.4	39	16.8
	Favorably, with reservations	126	66.7	137	72.5	32	74.4	32	74.4	158	68.1	169	72.8
	Unfavorably	6	3.2	12	6.3	0	0.0	1	2.3	6	2.6	13	5.6
	Neutral	3	1.6	2	1.1	0	0.0	0	0.0	3	1.3	2	.9
	Don't know	11	5.8	8	4.2	2	4.7	1	2.3	13	5.6	9	3.9
+ 31/29. How do you feel about the use of ITV in your classroom in the future?	Prefer it; like it	108	57.1	121	64.0	24	55.8	34	79.1	132	56.9	155	66.8
	Don't prefer it; don't like it	11	5.8	11	5.8	1	2.3	1	2.3	12	5.2	12	5.2
	Neutral	30	15.9	40	21.2	5	11.6	3	7.0	35	15.1	43	18.5
	Don't know	40	21.2	17	9.0	13	30.2	5	11.6	53	22.8	22	9.5

TABLE 1 - Continued

24. About how long would you say an ITV lesson should be for grades 4-6? *

Subject	Length of Time in Minutes											
	15		20		25		30		40		Other	
	1st Q	2nd Q	1st Q	2nd Q	1st Q	2nd Q	1st Q	2nd Q	1st Q	2nd Q	1st Q	2nd Q
Art	28	20	39	27	27	9	125	99		7	5	2
Spanish	79	87	79	31	14	9	56	25		1	2	1
Social Studies	43	40	73	44	29	16	85	92	2	5		1
Music	56	57	94	52	24	11	56	49	2	2	1	
Science	19	20	52	27	27	21	129	103	2	6		1
Story Telling	118	88	56	22	18	6	31	19	1			

* This question is being presented on a separate table and with no attempt made to convert the frequency counts to percentages, for many questionnaires carried no responses or else were checked on only one or two subjects--the subjects, apparently, that were being received by the respondent. Although the number of responses may be too varied and incomplete to make definite conclusions, inferences can be drawn as to what time periods are preferable for the specific subjects listed.

TABLE 2

TOTAL FREQUENCY REPLIES OF TEACHERS

	Answers	(N=99**) Inexperienced in ITV before Sep., 1959				(N=90**) Experienced in ITV before Sep., 1959			
		1st Q*		2nd Q*		1st Q*		2nd Q*	
		N	%	N	%	N	%	N	%
1. Do you think that classroom teachers who will receive ITV programs need special training in order to be better able to handle TV instruction?	Yes	25	25.3	32	32.2	30	33.3	24	26.7
	No	44	44.4	59	59.6	51	56.7	59	65.6
	Don't know	30	30.3	8	8.1	9	10.0	7	7.8
2. Do you think that ITV can meet the same needs as are met by the special teacher (for example, the art teacher?).	Yes	31	31.3	27	27.3	28	31.1	34	37.8
	No	48	48.5	59	59.6	43	47.8	49	54.4
	Don't know	20	20.2	15	15.1	19	21.1	7	7.8
+ 3. What do you think the initial reaction of pupils will be toward ITV?	Favorable	86	86.9	78	78.8	82	91.1	72	80.0
	Unfavorable	1	1.0	5	5.0	0	0.0	0	0.0
	Indifferent	5	5.0	14	14.1	6	6.7	16	17.8
	Don't know	7	7.1	2	2.0	2	2.2	2	2.2
+ 4. What do you think the pupils' reaction will be over a period of time?	Increasingly unfavorable	12	12.1	41	41.1	18	20.0	24	26.7
	Increasingly favorable	27	27.3	23	23.2	33	36.7	18	20.0
	Unchanged	11	11.1	34	35.4	14	15.6	48	53.3
	Don't know	49	49.5	0	0.0	25	27.8	0	0.0

* Q denotes "questionnaire."
** Unless otherwise indicated.

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959				Experienced in ITV before Sep., 1959			
		1st Q		2nd Q		1st Q		2nd Q	
		N	%	N	%	N	%	N	%
+ 5. Do you think that the rate of content coverage by the TV instructor will prove to be a problem?	Big problem	19	19.2	19	19.2	33	36.7	18	20.0
	Small problem	25	25.2	39	39.4	39	43.3	41	45.6
	No problem	17	17.2	32	32.3	13	14.4	27	30.0
	Don't know	38	38.4	9	9.1	5	5.6	4	4.3
6. Do you think that the TV teacher will have teaching aids and resources superior to that of the classroom teacher?	Always	6	6.1	14	14.1	21	23.3	13	14.4
	Usually	68	68.7	50	50.5	51	56.7	50	55.6
	Sometimes	23	23.2	32	32.3	18	20.0	27	30.0
	Never	0	0.0	0	0.0	0	0.0	0	0.0
	Don't know	2	2.0	3	4.0	0	0.0	0	0.0
+ 7. How do you think that the use of ITV will affect classroom discipline?	Improve it	11	11.1	4	4.0	10	11.1	7	7.8
	No effect	61	61.6	80	80.8	69	76.6	79	87.8
	Worsen it	3	3.0	6	6.1	2	2.2	0	0.0
	Don't know	24	24.2	9	9.1	9	10.0	4	4.3
+ 8. What effect do you think that ITV in the classroom will have on the prestige of the classroom teacher?	Increase it	6	6.1	2	2.0	11	12.2	3	3.2
	No effect	78	78.8	79	79.8	61	67.8	74	82.2
	Decrease it	1	1.0	1	1.0	4	4.3	0	0.0
	Don't know	14	14.1	17	17.2	14	15.6	13	14.4
+ 9. Do you think that the teaching techniques used by the ITV teacher will be helpful to you in making your own presentations?	Yes	76	76.8	53	53.5	69	76.7	61	67.8
	No	7	7.1	31	31.3	8	8.9	22	24.4
	Don't know	16	16.2	15	15.2	13	14.4	7	7.8

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959				Experienced in ITV before Sep., 1959			
		1st Q		2nd Q		1st Q		2nd Q	
		N	%	N	%	N	%	N	%
10. How would you intend to use ITV in your classroom?	Regular but supplementary resource	78	78.8	68	68.7	82	91.1	71	78.9
	As a main resource	11	11.1	10	10.1	4	4.3	9	10.0
	Only incidentally	10	10.1	21	21.2	4	4.3	10	11.1
+ 11. What effect do you think that taking part in ITV will have on the problem of maintaining ability groups (e.g., reading groups) at different levels of progress?	Increase it	14	14.1	5	5.0	19	21.1	11	12.2
	Decrease it	14	14.1	3	3.0	15	16.7	6	6.7
	No effect	32	32.3	65	65.7	32	35.5	54	60.0
	Don't know	39	39.4	26	26.3	24	26.7	19	21.1
12. Do you think that ITV programs would be better suited to pupils of one ability level?	Yes	34	34.3	30	30.3	31	34.1	20	22.2
	No	42	42.4	49	49.5	49	54.4	55	61.1
	Don't know	23	23.2	20	20.2	10	11.1	15	16.7
+ 13. Do you think that the necessity of preparing the entire classroom for an ITV program would reduce the effectiveness of your ability grouping?	Yes	16	16.2	8	8.1	13	14.4	12	13.3
	No	64	64.6	72	72.7	66	73.3	66	73.3
	Don't know	19	19.2	19	19.2	11	12.2	12	13.1

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959 1st Q N	%	2nd Q N	%	Experienced in ITV before Sep., 1959 1st Q N	%	2nd Q N	%
+ 14. What is your reaction to the necessity of planning your regular classes around a rigid ITV time schedule?	Difficult and undesirable	15	15.2	18	18.2	10	11.1	13	14.4
	Difficult but desirable	64	64.6	59	59.6	64	71.1	52	57.8
	Easy, no problem	9	9.1	16	16.2	12	13.3	27	30.0
	Don't know	11	11.1	6	6.1	4	4.3	0	0.0
15. (On second questionnaire only) Was the time at which the ITV programs were scheduled a satisfactory one, or would you have preferred another time?	Satisfactory			60	60.6			75	83.3
	Would have preferred a.m.			4	4.0			10	11.1
	p.m.			33	33.3			5	5.5
+ 15/16* In your opinion, how do you think the use of ITV in the classroom will affect the amount of learning by the:	More	70	70.7	68	68.7	66	73.3	56	62.2
	Less	0	0.0	0	0.0	2	2.2	6	6.7
	About the same	15	15.2	19	19.2	14	15.6	17	18.9
	Don't know	14	14.1	12	12.1	8	8.9	11	12.2
a) bright pupils?									
b) average pupils?	More	57	57.6	33	33.3	50	55.6	43	47.8
	Less	2	2.1	6	6.1	1	1.1	1	1.1
	About the same	27	27.3	52	52.5	31	34.1	33	36.7
	Don't know	13	13.1	8	8.1	8	8.9	13	14.4
c) slower pupils?	More	43	43.4	17	17.2	38	42.2	25	27.8
	Less	7	7.1	14	14.1	15	16.7	10	11.1
	About the same	31	31.3	46	46.5	27	30.0	34	37.8
	Don't know	18	18.2	22	22.2	10	11.1	21	23.3

* First number identifies the question on the first questionnaire, and the second number identifies the same question on the second questionnaire.

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959				Experienced in ITV before Sep., 1959			
		1st Q		2nd Q		1st Q		2nd Q	
		N	%	N	%	N	%	N	%
+ 16/17. How do you think ITV in your classroom would affect children's attitude toward school in general?	Favorably	63	63.6	22	22.2	57	63.3	28	32.2
	No effect	23	23.2	52	52.5	24	26.7	47	52.2
	Unfavorably	0	0.0	2	2.0	6	6.7	5	5.6
	Don't know	13	13.1	23	23.2	3	3.2	10	11.1
+ 17/18. Do you think that the inability of the pupils to ask questions directly of the ITV teacher will prove to be a handicap?	Great handicap	18	18.2	16	16.2	16	17.8	10	11.1
	Minor handicap	51	51.5	50	50.5	60	66.7	41	45.6
	No handicap	15	15.2	22	22.2	11	12.2	32	35.5
	Don't know	15	15.2	11	11.1	3	3.2	7	7.8
18/19. What effect do you think taking part in ITV will have on your lesson preparation time for the subject covered by ITV?	Increase it	45	45.4	40	40.4	32	35.5	39	43.3
	Decrease it	13	13.1	13	13.1	17	18.9	13	14.4
	No effect	15	15.2	35	35.3	31	34.1	32	35.5
	Don't know	26	26.3	11	11.1	10	11.1	0	0.0
+ 19/20. What effect do you think taking part in ITV would have on children's academic interests? For example: a)reading?	Increase them	48	48.5	35	35.3	46	51.1	34	37.8
	Decrease them	2	2.0	2	2.0	5	5.6	3	3.2
	No effect	18	18.2	35	35.3	16	17.8	24	26.7
	Don't know	31	31.2	27	27.3	27	30.0	28	31.1
b) social studies?	Increase them	70	70.7	47	47.5	59	65.6	51	56.7
	Decrease them	1	1.0	2	2.0	3	3.2	2	2.2
	No effect	7	7.1	23	23.2	11	12.2	23	25.5
	Don't know	21	21.2	27	27.3	17	18.9	14	15.6

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959				Experienced in ITV before Sep., 1959			
		1st Q		2nd Q		1st Q		2nd Q	
		N	%	N	%	N	%	N	%
c) Science?	Increase them	70	70.7	27	27.3	71	78.9	65	72.2
	Decrease them	0	0.0	3	3.0	1	1.1	3	3.2
	No effect	6	6.1	29	29.3	7	7.8	13	14.4
	Don't know	23	23.2	40	40.4	11	12.2	9	10.0
+ 20/21. What effect would you expect classroom ITV programs to have on work-study skills? For example: a) listening?	Increase them	76	76.7	52	52.5	69	76.7	50	55.6
	Decrease them	3	3.0	9	9.1	2	2.2	2	2.2
	No effect	5	5.0	23	23.2	13	14.4	27	30.0
	Don't know	15	15.2	15	15.2	6	6.7	11	12.2
b) note-taking?	Increase them	34	34.3	18	18.2	41	45.6	46	51.1
	Decrease them	2	2.0	2	2.0	8	8.9	2	2.2
	No effect	22	22.2	47	47.5	24	26.7	29	32.2
	Don't know	41	41.4	32	32.2	17	18.9	13	14.4
c) organizing research data?	Increase them	28	28.3	14	14.1	37	41.1	25	27.8
	Decrease them	2	2.0	3	3.0	4	4.3	6	6.7
	No effect	12	12.1	42	42.4	23	25.5	36	40.0
	Don't know	57	57.6	40	40.4	26	28.9	23	25.5
21/22. What effect do you think participating in ITV would have on the evaluating techniques for the subjects covered?	Need new techniques	40	40.4	32	32.2	44	48.9	27	30.0
	Old techniques adequate	11	11.1	18	18.2	16	17.8	12	13.3
	Don't know	48	48.5	49	49.5	30	33.3	51	56.7

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959				Experienced in ITV before Sep., 1959			
		1st Q		2nd Q		1st Q		2nd Q	
		N	%	N	%	N	%	N	%
22/23. What would you say is the maximum number of children who could comfortably watch an ITV program on one 21" receiver in the room?	15-20	12	12.1	8	8.1	13	14.4	4	4.3
	20-25	28	28.3	28	28.3	33	36.7	26	28.9
	25-30	42	42.4	47	47.5	17	18.9	36	40.0
	30-35	9	9.1	7	7.1	14	15.6	16	17.8
	Other	8	8.1	9	9.1	13	14.4	8	8.9
23. (On first questionnaire only) What was the reaction of teachers in your building when asked to participate in ITV?	Eager to participate	36	36.4			27	30.0		
	Reluctant to participate	25	25.2			26	28.9		
	Indifferent	15	15.2			13	14.4		
	Don't know	23	23.2			24	26.7		
24. (Omitted. See p. 70.)									
+ 25 Do you think teachers in general would resent having their pupils taken over by the ITV instructor?	Yes	14	14.1	8	8.1	20	22.2	2	2.2
	No	66	66.7	71	71.7	53	58.9	72	80.0
	Neutral	5	5.2	8	8.1	10	11.1	3	3.2
	Don't know	14	14.1	12	12.1	7	7.8	13	14.4
+ 26. In general, what do you think is the attitude of your pupils' parents toward ITV in your classroom?	Favorable	23	23.2	48	48.5	41	45.6	40	44.4
	Unfavorable	5	5.0	5	5.0	5	5.6	2	2.2
	Neutral	11	11.1	31	31.3	21	23.3	23	25.5
	Don't know	60	60.6	15	15.2	23	25.5	25	27.8

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959				Experienced in ITV before Sep., 1959			
		1st Q		2nd Q		1st Q		2nd Q	
		N	%	N	%	N	%	N	%
27. (On first questionnaire only) Were the parents of your pupils informed formally by the school administration that their children would be participating an ITV program?	Yes	13	13.1			44	48.9		
	No	30	30.3			15	16.7		
	Don't know	56	56.6			31	34.1		
28. (On first questionnaire only) If not formally, how many of your pupils' parents have been notified in some manner by a school representative that their children would be participating in ITV?	All	16	16.2			30	33.3*		
	Nearly all	12	12.1			7	7.7		
	About half	2	2.0			1	1.1		
	Few	3	3.0			1	1.1		
	None	6	6.1			2	2.2		
	Don't know	44	44.4			25	27.7		
+ 29/27. Do you think that participation in ITV will make a contribution to the pupils' learning situation over and above what you are now doing in the classroom?	Yes	74	74.7	80	80.8	64	71.1	60	66.7
	No	6	6.1	8	8.1	4	4.3	10	11.1
	No change	1	1.0	3	3.0	5	5.6	4	4.3
	Don't know	18	18.2	8	8.1	17	18.9	16	17.8
30. (On second questionnaire only) In your opinion, how does ITV compare with instructional films in the classroom?	TV better			14	14.1			28	31.1
	Films better			10	10.1			14	15.6
	No difference			4	4.0			3	3.2
	Depends on purpose of film or TV			71	71.7			45	50.0

*If Question 27 were answered, Question 28 required no answer; 24 respondents omitted answering this question.

TABLE 2 - Continued

	Answers	Inexperienced in ITV before Sep., 1959				Experienced in ITV before Sep., 1959			
		1st Q		2nd Q		1st Q		2nd Q	
		N	%	N	%	N	%	N	%
+ 30/28. As a professional educator, how do you feel toward expanding the use of ITV in American schools?	Very favorably	18	18.2	9	9.1	25	27.8	21	23.3
	Favorably, with reservations	67	67.7	77	77.7	59	65.6	60	66.7
	Unfavorably	4	4.0	7	7.1	2	2.2	5	5.6
	Neutral	3	3.0	1	1.0	0	0.0	1	1.1
	Don't know	7	7.1	5	5.0	4	4.3	3	3.2
+ 31/29. How do you feel about the use of ITV in <u>your</u> classroom in the future?	Prefer it	45	45.4	58	58.6	63	70.0	63	70.0
	Don't prefer it	10	10.1	11	11.1	1	1.1	0	0.0
	Neutral	15	15.2	24	24.2	15	16.7	16	17.8
	Don't know	29	29.3	6	6.1	11	12.2	11	12.2

As there were twenty-five items on the questionnaires designed to mirror attitudes toward ITV, the least favorable attitude would result in a possible score of twenty-five points, and the most favorable attitude in a possible score of one hundred twenty-five points. Utilizing this scoring scale, a neutral attitude would be indicated by a score of approximately seventy-five points. Hence, any score below seventy-five points was assumed to reflect a definitely unfavorable attitude toward ITV; a score above seventy-five points was assumed to denote a favorable attitude; and the higher the score, the more favorable was the attitude, of course. (See Appendix D for weightings on individual questions.)

Individual attitude scores on both questionnaires were computed and combined for each subgroup planned for evaluation and comparison. It will be noted that only those teachers who had had no previous experience in ITV--i.e., prior to September, 1959--were selected for measuring attitude changes. This restriction was predicated upon the assumption that even those teachers who had had only two or three months of ITV experience had already been affected in varying and unmeasurable degrees toward instructional television, and as a consequence, would invalidate the variable of "inexperience."

To ascertain if the attitude changes toward ITV between the subgroups represented real rather than chance differences, the t test for the significance of the differences between means was employed.[1] Table 3 presents the results of this

[1]Quinn McNemar, Psychological Statistics (New York: John Wiley and Sons, Inc., 1955), p. 87.

comparison.

As Table 3 reveals, each subgroup measured for attitude changes manifested a significant shift from favorable on the first questionnaire to less favorable on the second questionnaire toward ITV. This consequence, however, should not be construed to mean that the attitude change was necessarily in the direction of un-favorable. An examination of Table 1 disclosed that in a number of instances the shift from the first questionnaire to the second was frequently from favorable to a neutral position such as "No effect" or "Don't know." Hence, though the change in attitude was in the direction of less favorable on the second questionnaire (after nine months of experience with ITV), it can be inferred that this may merely indicate a tempering of the over-expectations manifested by the respondents prior to their participation in the TV instructional program. For, as the mean attitude scores in Table 3 reveal, none fell below eighty-nine, which is considerably above a neutral score of seventy-five, and still decidedly favorable.

To enable a more varied comparison among the subgroups of respondents, further t tests were calculated. The results are presented in Table 4. As can be seen by the table, no significant differences were found between the attitudes of teachers with over five years' general teaching experience and those with five years' and less on the first questionnaires. The mean attitude score for the group with over five years' general teaching experience was slightly higher than for those

TABLE 3

COMPARISON OF TEACHERS' ATTITUDE CHANGE FROM FIRST TO SECOND QUESTIONNAIRE

Groups	Mean Attitude Scores		Difference Between the Means	t Ratios
	1st Q	2nd Q		
Teachers (58) with no previous ITV experience, but over five years' general teaching experience	96.6+	91.6+	-5.0000*	2.0469
Teachers (41) with no previous ITV experience, but with five years' or less general teaching experience	96.4+	89.2+	-7.2683**	2.3313
Combined differences of both above groups, (99)	96.6+	90.6+	-5.9394***	3.0712

* A difference as large as this would occur by chance fewer than five times in a hundred.

** A difference as large as this would occur by chance fewer than two times in a hundred.

*** A difference as large as this would occur by chance fewer than one time in a hundred.

TABLE 4

COMPARISON OF ATTITUDES OF DIFFERENT GROUPS TOWARD ITV

Groups	Mean Attitude Scores		Difference Between the Means	t Ratios
Comparison on First Questionnaire	N=58	N=41		
Teachers (58) with no previous ITV experience, over five years' general teaching experience compared with teachers (41) with no previous ITV experience and five years' or less general teaching experience.	96.7+	96.4+	-.4668*	.1677
Comparison on Second Questionnaire				
Above groups	91.7+	89.2+	-2.5017*	.9009
Comparison on Second Questionnaire	N=99	N=43		
Above teachers (99) compared with administrators (43)	90.6+	96.3+	+5.7125**	2.5295

* This is an insignificant difference and could have occurred by chance.

** A difference as large as this would occur by chance fewer than two times in a hundred.

with less than five years', but it was only a difference of an approximate three-tenths of one point and clearly insignificant. The second set of questionnaires produced a two-and-one-half point difference between the two groups, but this too proved statistically insignificant.

In comparing the attitude scores between teachers and administrators, the attitude scores on only the second questionnaires were used, for most of the administrators (thirty-three of the forty-three) had had experience with instructional television prior to September, 1959 and, as with the teachers, would invalidate the variable of "inexperienced in ITV." It is evident from an inspection of Table 4 that the administrators who participated in the study hold unequivocally more favorable attitudes toward ITV than do the teachers with whom they were compared. The difference was significant at the two per cent level. The results in Table 1 tend to support this conclusion on the majority of the questions.

AN INTERPRETIVE EXCURSUS

The preceding analysis reduces to single scores, based on arbitrary assignment of weights, the attitudes which teachers and administrators had toward the use of ITV. Such reduction to scores can often result in the loss, or obfuscation, of certain richness of data which may be very useful for casting light on the anticipations teachers have regarding ITV--the high hopes, the misgivings, and the later confirmation or disillusionment. The analysis necessary to explain these

features is often not as amenable to rigorous statistical analysis as can be done with data reduced to metrics, but may be fully as valuable, nevertheless.

Recognizing wholly the risks one runs in failing to test for significance every statement made, it is proposed in this section to classify the categories of responses along dimensions of the "pedagogical act," and summarize the general orientation which teachers had toward ITV in advance of using it, and the direction the orientation took following the ITV experience. This interpretation will consider only those persons who were using ITV for the first time, and will deal more in qualitative summaries than in exact statistical figures. The reader is referred to the detailed table presented on pages 71-79 for specific tabulations.

For discussion in this section only, the questionnaire items were grouped under the following categories: 1) Teacher practices--the various aspects of the teaching act, coupled with ITV, performed regularly by the teacher within the classroom; 2) Pupil reaction--how the pupils responded in general to the TV medium as a teaching instrument; 3) Teacher status--encompasses the teachers' image of themselves in relation to the ITV teacher; 4) Parental reaction--deals with the parents' response to the institution of ITV in the schools attended by their children.

Teacher practices. As the general study deals chiefly with teachers, the pedagogical act will be treated first.

With the trenchant emphasis being focused upon current educational practices, every conscientious, alert teacher would, understandably, feel impelled to give at least a trial run to newly-developed teaching tools, which, conceivably, may aid him in his pursuit of excellence, in upgrading the instructional program. In reference to the utilization of ITV, the respondents of this study were predominantly in favor of continuing its use in their own classrooms (item 31/29), strongly favored experimental use of ITV in American schools (item 30/28), and indicated a definite desire to use ITV regularly, but only as a supplementary resource. In each instance except the last, their feelings were enhanced even more favorably after a year's experience with ITV. In the last instance, (item 10), although still preponderantly favoring the use of ITV as a regular resource, a few additional teachers indicated a preference to enlist its use only incidentally.

Method and preparation for teaching are two of the uppermost concerns in modern education; hence, it would be expected that teachers would be peculiarly sensitive to demands and needs for special training and preparation. Yet, it was found that the most frequent response of the teachers in terms of the need for special training relating to the use of ITV was that such training was unnecessary (item 1). This feeling became even more prevalent following the teachers' essay with the TV medium. Corresponding closely to their reaction to item 1, it was the teachers' common opinion that ITV could <u>not</u> meet the same needs that are ordinarily met by the special

teacher (in music, art, and the like). However, the teachers' expectations were relatively high as regards the in-service benefits that would accrue from observing the teaching techniques of the ITV instructors. Even though this feeling declined somewhat subsequent to a year's exposure to ITV, the majority still maintained that ITV presentations were helpful to them in making their own classroom presentations (item 9).

It is a commonplace prospect that usually the undertaking of new practices, ventures, novel fields of endeavor, or new tools will concomitantly precipitate demands for increased efforts and time upon the participants. Was this true for the teachers? Prior to their ITV experience, nearly half of the teachers indicated that they expected their lesson-preparation time for the subjects covered by ITV to incur an increase. Their modal response confirmed this opinion following the ITV experience. But, over a third of the teachers thought that ITV participation would <u>not</u> affect their lesson-preparation time--that is, after having had experience with ITV (item 18/19).

Slightly less than half of the group expected that the rate of content coverage by the ITV teacher surely would prove to be a problem, ranging in degree from "small" to "big." After a year's ITV experience, the group waxed into a majority that considered this still a problem of varying degrees; but at the same time, approximately a third of the teachers expressed the opinion that they did <u>not</u> view this as a problem at all (item 5).

Would a rigid ITV time schedule create inordinate inconveniences for the classroom teacher? A forceful feeling prevailed among the teachers, before and after using ITV, that adjusting regular classes around a rigid ITV schedule, albeit a knotty problem at the outset, was desirable and worthwhile an effort to be made (item 14), and did not cause unfailing problems.

Debates on ideal class size continue unabated in educational circles. And no wonder, for not only financial factors, but also many other teacher-learner relationships are involved--including the amount of work required by the teacher in terms of the number of pupils he must instruct. The modal response of the teachers to this point indicated that 25-30 pupils would be the maximum that could comfortably watch ITV programs on a 21" receiver in the classroom (item 22/23). It is interesting to note that this is precisely the number usually quoted by teachers when identifying an "ideal" class size.

Before participating in ITV, about a third of the teachers expressed the view that taking part in the program would have no effect on the ability grouping of pupils in reading, arithmetic, and analogous activities, within the classroom. After the ITV experience, the size of the group burgeoned to two-thirds of the teachers who shared this opinion (item 11). Again before using ITV, the majority felt that preparing the entire class for an ITV program would not effect a problem for ability grouping within the classroom, and following the use of ITV, the teachers were even more emphatic in this

regard (item 13).

Considering the amount of time and funds ITV instructors are generally provided for preparing their lessons, it is not surprising that the greater part of the teachers expected--and after ITV, the expectation was confirmed--the ITV teachers to have teaching aids and resources usually superior to those of the classroom teachers (item 6).

Teacher status. Psychological findings have clearly established the principle that threats to one's self-image, to one's social, professional or economic security bears a direct relationship to that person's attitude toward the origin of the threats. In consequence, it would seem desirable to learn how teachers perceived ITV's influence upon their status.

The teachers revealed that they were predominantly confident that ITV participation would leave their prestige undisturbed. This opinion obtained quite forcibly before and after the ITV experience (item 8). Further corroboration of the teachers' unconcern regarding ITV's effect upon their status was sharply demonstrated by their responses when asked if they would resent having their pupils taken over by the ITV instructors (item 25). Two-thirds of the teachers contended that no resentment would be incurred, and three-fourths of the group conveyed a like opinion after using ITV.

Pupil reaction. ITV's effect upon pupils' behavioral patterns was of signal concern to everyone, of course; but

particularly to teachers--who would be in direct line to receive the children's potentially positive and negative reactions. As novelty creates interest, the teachers expected that pupils' initial reactions to ITV would be highly favorable. This expectation was fully realized, before and after the ITV experience (item 3). What the pupils' reaction toward the medium would be over a period of time, however, the teachers frankly stated they did not know, that is, before ITV. Following the exposure to ITV, the teachers indicated that they were about evenly divided as to whether pupils' attitude toward ITV would become increasingly unfavorably or remain unchanged, that is, favorable (item 4).

Another related pupil behavioral pattern--one that truly undergirds all learning activities--of extreme import to teachers is classroom discipline. This deep concern is predicated upon a valid basis, for without discipline, control, order, the universally expected classroom cosmos may well crumble into chaos. Here again, the majority expected that ITV would have no effect on discipline, and after participating in the program, an even greater majority--over four-fifths of the teachers--confirmed that opinion (item 7).

Each time, pre and post-ITV, the preponderant view of the teachers was that ITV participation would and did effect a greater amount of learning by the bright pupils. As for the average and slower pupils, the majority expected them also to increase their amount of learning. But following ITV, they indicated that the effect on the amount of learning by these

two groups of pupils remained about the same despite ITV (item 15/16).

Before ITV, the teachers felt strongly that it would affect the children's attitude toward school in general very favorably; but again after ITV, the majority concluded that ITV's effect on this point was actually inconsequential (item 16/17). Teachers manifested a high degree of anticipation that taking part in the ITV program would enhance the pupils' academic interests in social studies and science. But post-ITV responses indicated that less than half the teachers thought the pupils' academic interests increased in social studies, and only about a fourth thought that interest was greater in science. Curiously, the modal response pertaining to science interest after ITV was "Don't know" (item 19/20).

Parental reaction. Not surprisingly, most of the teachers revealed that they did not know what the parents' attitude was toward ITV prior to its activation in the schools. Post-ITV, three-fourths of the teachers noted that parental attitudes were either favorable or neutral (item 26). About half of the teachers did not know whether the parents had been apprised, formally or informally, by a school representative that their children would be participating in an ITV program items 27 and 28). It would seem that closer articulation between the classroom teachers and the administration could be sustained to mutual advantage.

In summary, one finds a picture of continued optimism

upon the part of teachers pertaining to ITV's contributions; an optimism that was sharply tempered at certain points, but still not to a degree demanding the evocation of the term "disenchanting." Teachers' status and prestige remained undisturbed and undiminished, respectively; pupil reaction was found to be on the whole favorable; and the parental eye, toward ITV experimentation in the schools, held a gleam of approbation.

Because some of the responses on the questionnaires showed a marked change in attitude to a level of high statistical significance, they will be examined in greater detail in the subsequent sections.

ANALYSIS OF INDIVIDUAL QUESTIONS

For the purpose of determining the significance of attitude changes on the individual questions designed to measure attitudes toward ITV, the McNemar test for the significance of changes was employed.[1] The McNemar test is particularly applicable to those "before and after" designs in which each person is used as his own control and in which measurement is in the strength of either a nominal or ordinal scale.[2]

The results of this comparison are shown in Table 5. As can readily be seen from an examination of Table 5, ten of

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[1]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956), p. 63.

[2]Ibid., p. 63.

the questions treated reflect statistically significant attitude changes from the first to the second set of questionnaires. Of the ten, three questions reveal changes from favorable to less favorable, and the remaining seven indicate changes from favorable to more favorable. It will be recalled that Table 5 treats the responses of only the ninety-nine teachers who had had no ITV experience prior to September, 1959.

Favorable to less favorable changes. Question 9 (Do you think that the teaching techniques used by the ITV teacher will be helpful to you in making your own presentations?) produced a change from favorable to less favorable that was significant at the one-tenth of one per cent level, as Table 5 shows. For the precise breakdown, Table 2 reveals that the total "Yes" responses fell from 76.8 per cent on the first questionnaire to 53.5 per cent on the second, and the "No" response rose from 7.1 per cent to 31.3 per cent. A reference to Table 1 indicates that the over-all response of the 232 participants corresponds quite closely to the percentages just cited. In endeavoring to account for this diminution of favorableness, the subjects who were interviewed were asked, "Have you any idea why so many people changed from "Yes" to "No"? All seven interviewees were initially baffled and unable to provide an explanation for the change. They themselves firmly asserted that the techniques utilized by the ITV teachers were extremely helpful and illuminating to them. Further questioning, however, elicited the view that perhaps many

TABLE 5

COMPARISON OF CHANGES ON ATTITUDE QUESTIONS
FROM FIRST TO SECOND QUESTIONNAIRES

(N=99 teachers inexperienced in ITV prior to Sept., 1959)

Questions	Chi Square	First Questionnaire		Second Questionnaire
3	3.3750	plus	to	minus
4	2.0281	plus	to	minus
5	.2539	minus	to	plus
7	.3902	minus	to	plus
8	2.7692	minus	to	plus
9	21.9512***	plus	to	minus
11	10.5800**	minus	to	plus
13	12.0416***	minus	to	plus
14	.7812	minus	to	plus
#15/16a	2.0645	minus	to	plus
b	3.5208	plus	to	minus
c	5.6250*	plus	to	minus
16/17	13.2250***	plus	to	minus
17/18	7.2250**	minus	to	plus
19/20a	3.1842	minus	to	plus
b	.1377	plus	to	minus
c	1.7297	plus	to	minus
20/21a	1.3611	plus	to	minus
b	.8000	minus	to	plus
c	9.5869**	minus	to	plus
25	10.3214**	minus	to	plus
26	31.5571***	minus	to	plus
29/27	3.0476	minus	to	plus
30/28	.4324	minus	to	plus
31/29	8.8888**	minus	to	plus

First number identifies question on the first questionnaire, and the second number identifies the same question on the second questionnaire.

* A difference as large as this would occur by chance fewer than two times in one hundred.

** A difference as large as this would occur by chance fewer than one time in one hundred.

*** A difference as large as this would occur by chance fewer than one time in one thousand.

classroom teachers were somewhat disappointed because the TV lessons were presented in many cases by the all-too-familiar lecture method--a technique, though usually indispensable, still one that teachers have been urged not to emulate too frequently. One other possible reason was advanced by the interviewees for the change from "Yes" to "No" on this question: many of the receiving classroom teachers sincerely believed that they themselves were as competent and effective as the ITV teachers they had been observing on the television screen, and in consequence, could record no answer to the question but a candid "No."

Question 15/16c (In your opinion, how do you think the use of ITV in the classroom will affect the amount of learning by the slower pupils?) also resulted in an originally favorable to less favorable change, significant at the two per cent level (Table 5). An examination of Table 2 reveals that on this particular question the "More" responses fell from 43.4 per cent on the first questionnaire to 17.2 per cent on the second. The "Less" response doubled in percentage, from 7.1 per cent to 14.1 per cent, and the "About the same" response gained on the second questionnaire by approximately 15 percentage points, that is, from 31.3 per cent to 46.5 per cent. When the seven interviewees were invited to shed some light on this less favorable manifestation, they were unable to proffer any logical and definitive explanation. On the contrary, all seven respondents averred that it was no more difficult to evaluate slower than faster children in respect to academic progress. Furthermore,

they all regarded ITV as an excellent motivator for slower children, especially those with reading problems, who seemed to derive greater benefits from the combined picture and sound telecasts than from the usual classroom experiences. One possible explanation for this obvious contradiction between the questionnaire results and the interviewees' viewpoints may lie in the fact that no uniform evaluating techniques were used in measuring the amount of learning which actually occurred in a precisely-specified period of time. Although the response on the second questionnaire to this question was significantly less favorable than on the first, Tables 1 and 2 both reveal that the combined responses of "More" and "About the same" on the second questionnaire approximate 63 per cent of the total responses--certainly not an un-favorable attitude on the whole.

The final question in Table 5 that shows a significant attitude change from favorable to less favorable, at the one-tenth of one per cent level, is question 16/17 (How do you think ITV in your classroom would affect the children's attitude toward school in general?). Turning again to Table 2 for exact frequency responses, it shows that "Favorably" fell from 63.6 per cent on the first questionnaire to 22.2 per cent on the second; and, that "No effect" responses increased from 23.2 per cent to 52.5 per cent respectively. The over-all response in Table 1 runs parallel to that of the response in Table 2. Ostensibly, the respondents' expectations of ITV on this specific question far exceeded their realizations. For, subsequent to ITV participation, they patently concluded that

television instruction in the classroom, per se, neither improved nor vitiated children's attitudes toward school in general, but by and large remained an objective medium of presentation.

Less favorable to more favorable changes. The seven questions in Table 5 reflecting less favorable to more favorable attitude changes will now be analyzed.

Question 11 (What effect do you think that taking part in ITV will have on the problem of maintaining ability groups--for example, reading groups--at different levels of progress?) definitely shows a change in attitude to more favorable, significant at the one per cent level. The salient changes on this question were from "Increase" and "Don't know," 14.1 per cent and 39.4 per cent respectively, on the first questionnaire to "No effect," 65.7 per cent, on the second (Table 2). Presumably, experience taught that usually ITV had an insignificant effect on the ability groupings as employed by the respondents at this time. The over-all responses in Table 1 are consonant to those in Tables 2 and 5.

Complementing Question 11, Question 13 (Do you think that the necessity of preparing the entire classroom for an ITV program would reduce the effectiveness of your ability grouping?) also produced a highly significant change in attitude from favorable to more favorable. As Table 5 shows, the level of significance was at the one-tenth of one per cent level, and therefore, it would seem reasonable to assume that ability

grouping would not be seriously affected by participating in instructional television.

Question 17/18 (Do you think that the inability of the pupils to ask questions directly of the ITV teacher will prove to be a handicap?) answers--for the purposes of this study--with reasonable clarity one of the more controversial issues in the debate pro and con ITV. The majority of the teachers on the first questionnaire, and a significantly greater majority on the second signified distinctly that the inability of the pupils to ask questions directly of the ITV teacher was either a minor handicap or no handicap at all (Tables 1, 2 and 5). Table 5 shows that the change from the first questionnaire to the second on this question was significant at the one per cent level.

Question 20/21c (What effect would you expect classroom ITV programs to have on work-study skills, for example, organizing research data?) reveals that the shift in attitude was from less favorable to more favorable at the one per cent level of significance (Table 5). A study of the frequency count in Table 2, however, indicates that the primary change occurred from "Don't know" on the first questionnaire to "No effect" on the second, and thus conveying a merely neutral response or attitude, not a genuinely favorable one. In precise terms, 42.4 per cent of the teachers felt that ITV had no effect on organizing research data skills, and another 40.4 per cent still did not know what effect was produced--even after nine months of participation in instructional television programs.

The seven interviewees were asked if they could offer an explanation for the relatively large percentage of "Don't know" responses. Six of the seven subjects queried concurred wholly that ITV was an excellent catalyst for motivating pupils to do research with the corollary of improving the research skills of children. But because this skill was not assayed through formal procedures and was appraised, in most instances, subjectively, many respondents preferred to record a noncommital "Don't know" on the questionnaires. The seventh interviewee stated that she always taught these skills regularly to her pupils and thus could not judge with any precision the role ITV played in enhancing them.

Another controversial issue often raised in debates revolving around the strengths and weaknesses of ITV was posed in Question 25 (Do you think that teachers in general would resent having their pupils "taken over" by the ITV instructor?). Table 2 reveals that the majority--66.7 per cent--of teachers responding to the first questionnaire indicated that the ITV teacher would not be resented, and the second questionnaire produced a result of 71.1 per cent. As Table 5 shows, this change from favorable to more favorable was significant at the one per cent level. Clearly, resentment of the ITV teacher was comparatively minor as far as the respondents of the study were concerned.

Regarding Question 26 (In general, what do you think is the attitude of your pupils' parents toward ITV in your classroom?), the first questionnaire showed that 23.2 per cent

of the teachers thought the parents' attitudes toward ITV was favorable, and 60.6 per cent did not know (Table 2). On the second questionnaire, the "Favorable" responses burgeoned to 48.5 per cent and the "Don't know" responses diminished to 15.2 per cent. In measuring the degree of significance of attitude change on this question, Table 5 presents the data that the change to more favorable was significant at the one-tenth of one per cent level. The "Neutral" responses on the second questionnaire comprised 31.3 per cent of the total. Coupling the "Favorable" and "Neutral" responses--79.8 per cent--it would be within the bounds of logic to conclude that, from the teachers' viewpoint, the parents were not averse to their children's participation in ITV programs. In the personal interviews, it was brought out that many parents viewed the ITV lessons at home and were well pleased with the presentations.

The last question in Table 5 that displayed a significant change in the direction of more favorable is Question 31/29 (How do you feel about the use of ITV in your classroom in the future?). The increase in favorableness was significant at the one per cent level. In studying the exact breakdown of responses, Table 2 shows that "Prefer it" was expanded from 45.4 per cent on the first questionnaire to 58.6 per cent on the second, while the "Don't know" responses shrank from 29.3 per cent to 6.1 per cent. It is interesting to note that the percentages on this question and Question 14, pertaining to a rigid ITV time schedule, are in relatively close agree-

ment when comparing "Prefer it," "Difficult but desirable" and the "Don't know" responses. This strong correlation of percentages may be assumed to imply that a considerable degree of consistency prevailed in the replies of the respondents, for many of the other questions elicited a similar high degree of correspondence on analogous items.

Other significant questions. At this point several questions--although not revealing uniformly startling changes from one questionnaire to the other--will be examined for their peculiar significance to the study and ITV in general.

Question 1 (Do you think that classroom teachers who will receive ITV programs need special training in order to be better able to handle TV instruction?) was felt to be of particular importance in the study, which, it will be recalled, postulated as a signal purpose the identification of problems in ITV. Table 1 indicates that although a majority--59.5 per cent--of the 232 respondents expressed the view that no special training was required or needed, a rather substantial minority of 32.8 per cent signalized that some kind of special training would be worthwhile. To help cast further illumination upon this question, the seven interviewees were asked, "What would be the most practical kind of help that a receiving teacher could be given?" Six of the seven subjects asserted that no formal university-type course was necessary for the receiving teachers in order for them to derive the greatest benefits from ITV programs. They did express, however, the

need of a short workshop--perhaps from two to three days in length--that ideally should be held before the ITV programs commence at the beginning of the school year. The agenda of the workshop would include such topics as the proper placement and operation of the TV receiver, coupled with a brief review of the course of study for the subjects to be taught via the TV medium. The need for this type of preparation would seem quite axiomatic.

The seventh interviewee also agreed that a short workshop preceding the reception of ITV was sine qua non for the receiving teachers. But he declared an additional need for these teachers. It was his contention that many of the classroom teachers needed special training, probably a university-prepared course, particularly after they had received several ITV lessons. The cardinal aim of the special course would be to orient the teachers to the role ITV had to play in education, what the teachers and pupils were supposed to obtain from participation in instructional television, and to learn how to evaluate the results and impact of the medium upon the pupils' participation. In other words, from his viewpoint, the receiving teachers have not been provided the assistance necessary to extract the optimum profits from ITV.

In regard to Question 12 (Do you think that ITV programs would be better suited to pupils of one ability level?), the "No" responses increased from the first to the second questionnaire in every subgroup of respondents. The results are presented in Tables 1 and 2. The majority--55.2 per cent--of

the respondents indicated that the telecast programs would not be better suited to children of one particular ability level, while 27.1 per cent recorded a "Yes" response. During the follow-up interviews, all seven subjects were wholly in agreement that all children of all abilities can profit substantially, and in varying degrees, of course, from ITV, and that segregating pupils for televiewing in light of their abilities would be extremely undesirable. Their consensus--supported by universally accepted psychological findings--was that the more senses are involved in learning, the more learning takes place, for all pupils. Several respondents expressed amazement at the amount of information the pupils were able to recall from the telecasts seen weeks before.

In their response to Question 14 (What is your reaction to the necessity of planning your regular classes around a rigid ITV time schedule?), almost 76 per cent, combining "Difficult but desirable" and "Easy, no problem," of the 232 respondents expressed a favorable attitude. It was brought out during the personal interviews that scheduling classes around a rigid TV time slot did prove to be a problem for the building principals at the beginning of the school year, but once the schedule was established, it ceased to be a problem in most cases.

Question 21/22 (What effect do you think that participating in ITV would have on the evaluating techniques for the subjects covered?) elicited the greatest percentage of "Don't

know" responses in the study: 52.6 per cent. As can be observed from an inspection of Table 1, 33.2 per cent of the responses indicated that new evaluating techniques would be needed, and 14.2 per cent showed that old techniques would be adequate. Yet, 52.6 per cent of the 232 respondents expressed "Don't know" on the questionnaires, apparently considering themselves unqualified to render a judgment of definitive certitude on this question. The query, "Why were there so many 'Don't know' responses on the question?" was broached to the interviewees. They stated that they themselves were employing the old standard methods for gauging pupils' progress and achievement in subjects taught via ITV. Three of the interviewees felt that new means of evaluation were necessary, but were unable to suggest what types of techniques and in what areas they would be desired. The remaining four subjects were employing traditional methods of measuring achievements and deemed them adequate. In accounting for the preponderant number of "Don't know" replies to this question, the interviewees proposed the notion that the newness of the medium and teachers' comparatively brief experience with it made them feel grossly incapable to give a definite answer. Presumably, the degree of certainty on this question will develop in direct proportion to the degree of experience accumulated by the receiving teachers of ITV.

The response to Question 23 (What was the reaction of teachers in your building when asked to participate in ITV?), which was included in only the first questionnaire, was varied

and indefinite as regards delineating a clear-cut reaction (Table 1). When the interviewees were asked why would classroom teachers be reluctant to participate in ITV, the following reasons were advanced:

> ITV was just another educational fad and would be a time-consumer.
>
> ITV would require more work on the part of teachers, for nothing was being eliminated but additions made to the curriculum; e.g., Spanish.
>
> ITV was too cold and impersonal.
>
> (And, paradoxically) ITV would undermine the classroom teachers' prestige.

All the interviewees themselves, however, ardently favored ITV and judged it a very useful, effective and enriching tool, comparable but superior to other audio-visual aids. When Classroom 10 first began operating, in March, 1959, there was criticism voiced that sixth-grade classes were receiving excessive amounts of TV lessons. The following fall, however, this objection was dissolved to a great extent, for the ITV programs were more evenly distributed over grades three through six, the interviewees reported.

Table 1 shows that the replies to Question 30/28 (As a professional educator, how do you feel toward expanding the use of ITV in American schools?) of the respondents following a year's, or more, experience with ITV could be interpreted as encouraging to proponents of instructional television. As the table indicates, 16.8 per cent were "Very favorably" inclined for the expansion of ITV in American schools, while

a substantial 72.8 per cent expressed a "Favorably, with reservations" response on this point. Merging the two percentages, it is evident that 89.6 per cent of the 232 subjects display a favorable attitude toward further experimentation with ITV in our schools.

Unquestionably, one of the most significant queries constituting the questionnaires was Question 29/27 (Do you think that participation in ITV will make a contribution to the pupils' learning situation over and above what you are now doing in the classroom?). Whereas 66.8 per cent of the respondents signified--on Question 31/29, Table 1--that they would like to have ITV in their own classrooms in the future, 81.5 per cent averred that ITV would enhance the normal classroom activities now pursued within their rooms. The approximately 15 per cent difference between the two responses implied, apparently, that although ITV <u>does</u> enhance standard classroom activities, this group represented by the 15 per cent would prefer not to be a recipient of the telecasts--at least, at the time the questionnaires were answered. It is interesting to observe that 90.7 per cent of the administrators expressed the view that ITV would be an enriching influence within the classroom (Table 1).

ANALYSIS OF OPEN-END QUESTIONS

As previously stated in Chapter I, one of the principal intents of the study was to identify administrative and instructional problems related to participation in ITV programs ema-

nating from Classroom 10, WMSB-TV East Lansing, Michigan. To provide an opportunity for the respondents to disinter problems, a semi-structured, open-end question was included on each set of questionnaires. The reactions to this question will now be presented and analyzed.

Of the 232 respondents who comprised the panel for the study, only 127 indited what were judged usuable answers on the first set of questionnaires in terms of the identification of problems pertinent to ITV. The remainder of the subjects either failed to record any answer to the question, or expressed totally irrelevant reactions, which were, therefore, eschewed for classification and subsequent analysis.

On the second set of questionnaires, 192 responses were considered relevant and usable, with the remainder omitted due to inappropriateness.

Table 6 presents the results of the structured portion of the open-end question, in addition to those that lent themselves to classification. Even a casual examination of the table discloses that only half a dozen problems evoked more than ten frequency responses. Easily the most conspicuous change occurred from 4 "No problem" responses on the first questionnaire to 56 responses on the second. Presumably, what problems did exist or were anticipated at the outset, either never materialized or else were successfully mastered for these particular respondents.

The second largest frequency response in Table 6 pertained to the need of additional time and work ITV would neces-

TABLE 6

FREQUENCY RESPONSES TO OPEN-END QUESTION

As you see it now, the greatest problem in taking part in ITV programs in the classroom is (Please check one only):

	Statement of Problem	No. Responses on First Questionnaire	No. Responses on Second Questionnaire
1.	No problem	4	56
2.	Require much additional time and work for classroom teacher	29	42
3.	Would cause much time to be wasted	4	8
4.	Would cost too much	3	4
5.	Would cost more than it is worth	0	11
6.	Worth it, but do not have the money for it (on 2nd Q. only)		4
7.	Scheduling, rigid time slot inconvenient	19	8
8.	Curriculum geared to one school system, inflexible	18	19
9.	Too many TV programs	12	4
10.	Combination grades difficult to handle	6	5
11.	Lack of adequate communication between TV and classroom teacher	6	3
12.	More TV sets needed	5	2
13.	Learning how to use TV effectively; teachers not prepared	4	2
14.	Don't know	6	2

sitate upon the part of the classroom teacher. This number rose from 29 on the first questionnaire to 42 on the second. However unpalatable the conclusion may be, it seems reasonable to assume that ITV--as it was conducted during the course of the study, anyway--was certainly not a time-saver for many of the receiving teachers. In pursuing the factor of time-saving with the interviewees, they pointed out that whether additional time and work for the classroom teacher was necessary depended substantially upon: 1) the subjects received via ITV, and 2) the degree of conscientiousness immanent in the classroom teacher to perform at his highest level of effectiveness.

As a case in point, teachers who received Spanish telecasts were compelled to devote more time in preparation and drill with the pupils, for usually, although Spanish would be added to the curriculum, nothing would be eliminated. And if Spanish were to be taught effectively, at least fifteen minutes of vocabulary drill was required each day. The drill periods per se accounted for seventy-five minutes per week, and the fifteen-minutes each Spanish telecasts, four times per week, consumed another sixty minutes. Obviously, if 135 minutes are utilized for an additional subject appended to the existant curriculum, and the school day is not lengthened, the teacher must somehow pare or squeeze out 135 minutes from the other regularly taught subjects. Pressure upon a conscientious teacher seems inevitable if he feels duty bound to continue to teach all other subjects, in addition to Spanish, as ably as he can. Most of the interviewees stated that such

pressure was extant.

In science ITV classes, additional time was often necessary, the interviewwes observed, for the lessons demanded more research upon the part of the pupils and teachers than many had been accustomed to. In social studies, however, the required time did not deviate significantly from non-ITV classes, as the subject was a standard fixture of the curriculum and the preparation time always had been utilized in the past.

Despite the fact that often more time and effort were required of the receiving teachers who participated in ITV, the interviewees maintained that these demands were on the whole interesting, stimulating and enriching to both teachers and pupils alike.

A notable result in Table 6 concerns the response to the cost of ITV. Only 3 respondents on the first questionnaire and 4 on the second indicated that participation in instructional television programs would cost too much. Eleven respondents, however, thought ITV would cost more than it is worth. Of the 232 respondents, then, only 15 perceived cost as the greatest problem in the reception of ITV telecasts on the second questionnaire.

Eighteen respondents on the first questionnaire and 19 on the second questionnaire identified curriculum rigidity--item 8, Table 6--as the greatest problem related to ITV. It is understandable that if the ITV lessons, courses of study and textbooks are geared to one specific school system--the Lansing Public Schools, in this instance--flexibility would

be trammeled to some extent for those participants employing texts and courses of study other than those used by the Lansing Schools. But the degree of inflexibility and restriction pressed upon the receiving classroom teacher may often hinge upon his ingenuity to modify and adapt the ITV presentations to suit the needs of his particular class. Of course, modification and adaptation may be attenuated to a point of diminishing returns, after which the TV telecasts may become ineffectual. Ideally, it is presumed, the ITV instructors and the receiving classroom teachers would have recourse to the same texts and lesson plans--if optimum teaching effectiveness were to predominate.

"Scheduling" was identified as the greatest problem 19 times on the first set of questionnaires; this number was reduced to 8 on the second set. But, as was pointed out in a preceding section, once the schedules were satisfactorily set up by the building principal, they ceased to be considered problems. Supposedly, the receiving teachers adjusted to the schedules with relative ease, for they were rarely alluded to several weeks after the ITV programs had begun, the interviewees reported.

The final item in Table 6, item 9, that received more than 10 responses, signifying that it was the "greatest problem," pertained to "Too many ITV programs." Twelve respondents selected it as the greatest problem on the first questionnaire. The respondents were nearly all sixth-grade teachers who had participated in ITV from March through the middle of

June, 1959. During this period, most of the telecasts from Classroom 10 were aimed at the fifth and sixth grade levels and received by those classes, hence the expressed concern of "Too many ITV programs." The following fall, however, ITV programs were balanced throughout grades three through six, and the plethora of programs on the fifth and sixth grade levels no longer existed. This is evidenced by the fact that only 4 respondents still identified "Too many ITV programs" as the greatest problem on the second set of questionnaires, i.e., in June, 1960.

Listed below are a few of the miscellaneous responses to the open-end question eliciting the identification of the greatest problem in ITV. Their frequency of occurrence was rarely more than one, thus precluding classification, of course. But they are listed for the purpose of providing a sample of the gamut of responses submitted.

> "As you see it now, the greatest problem in taking part in ITV programs in the classroom is":
>
> Children uninterested.
>
> Poor reception.
>
> Depends on subject taught.
>
> 30 minutes too long.
>
> Spanish--hard to follow for new subject.
>
> Attitude of the teacher.
>
> Evaluation of achievement.

In precis, it would seem that the responses to the

open-end question fell somewhat short of identifying an egregiously difficult problem in the field of ITV for these particular participants.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The basic predications upon which the study was launched were set forth as: (1) to make a comparison study of anticipated and realized problems of selected classroom teachers receiving instructional television lessons, and (2) to identify, analyze and evaluate existent problems in elementary school ITV programs in the Channel 10 area. The operational design of the investigation required the elicitation and comparison of the attitudes toward ITV of those classroom teachers and administrators who were participating in Classroom 10 telecasts, and concomitantly, the identification of pertinent problems of an instructional and administrative nature related to ITV. Data were procured through the employment of two sets of questionnaires, supplemented by personal interviews of chosen respondents. Treatment of the data consisted of a correlation technique, comparison of frequency counts and percentages technique, and the McNemar test for the significance of before and after changes.

SUMMARY

An inspection of the hypotheses of the study will provide the framework for the summarization of the essential findings.

Hypothesis 1

Classroom teachers who are inexperienced in ITV are apprehensive regarding it, and as a consequence, hold unfavorable attitudes toward ITV.

Since the mean attitude scores of the teachers selected for this appraisal were 96.6--out of a possible score of 125, with a score of 75 assumed to register a neutral attitude--the hypothesis was not supported (Table 3, p. 82). On the contrary, an inference may be drawn that the expectations and attitudes of the inexperienced-in-ITV teachers who participated in the study were highly optimistic.

Hypothesis 2

A year's (or more) experience with ITV by classroom teachers will significantly diminish their apprehensions relevant to it.

It was assumed that apprehensions of classroom teachers would be expressed by their unfavorable attitudes toward ITV programs. This hypothesis was also unconfirmed, for the mean attitude scores of teachers subsequent to nine months of participation in ITV were lower, from 96.6 points to 90.6 points, than they had been prior to any experience with ITV (Table 3, p. 82). Although the diminution in favorable to less favorable attitudes was significant at the one per cent level after nine months' experience, the over-all attitude was still considered favorable compared to a neutral score of 75 points.

Hypothesis 3

Teachers with greater experience (as classroom teachers) will manifest a more favorable attitude toward ITV than teachers with less experience.

An inspection of the data in Table 4 (p. 83) shows that no significant difference was found between the attitudes of teachers with over five years' general teaching experience and those with five years' and less. Hence, the hypothesis was also found to be invalid. The number of years of general teaching experience was, ostensibly, inconsequential in coloring the attitudes of teachers toward instructional television. Experience with ITV per se seemed to be the determining factor.

Hypothesis 4

Administrators hold more favorable attitudes toward ITV than do classroom teachers.

The study supported this hypothesis. Table 4 shows that the difference between the mean scores of teachers and administrators was significant at the two per cent level, with the administrators achieving the higher scores. Since the mean attitude scores of both groups exceeded 90 points, it can be acknowledged that teachers and administrators alike held relatively favorable attitudes toward instructional television.

Findings on specific questions. Several pertinent questions reflecting frequently-mentioned problems in the literature will be summarized.

Question 17/18. Do you think that the inability of the pupils to ask questions directly of the ITV teacher will prove to be a handicap?

One of the more frequent arguments broached against teaching by television is that it is "one-way communication," that pupils do not have an opportunity to make comments or ask questions in the course of a lesson presentation. The ratio of responses to this question indicated that lack of direct and immediate feedback was not considered a major disadvantage by the respondents, either before or after the ITV experience. The over-all totals on the second questionnaire were as follows: 75.8 per cent judged it as a minor handicap, or no handicap; 9.9 per cent did not know; and 14.2 per cent deemed it a great handicap (Table 1, p. 65).

Question 8. What effect do you think that ITV in the classroom will have on the prestige of the classroom teacher?

The apprehension was often mentioned--by the interviewees and in the literature--that ITV would relegate the classroom teacher into a secondary role, to a sort of TV custodian who merely placed, adjusted and turned on and off the receiver for the children. Evidence to support this fear failed to materialize in the study. The responses to this question were tabulated on the second questionnaire as follows: Increase it, 4.3 per cent; No effect, 82.8 per cent; Decrease it, .9 per cent; Don't know, 12.1 per cent (Table 1, p. 63).

> Question 9. Do you think that the teaching techniques used by the ITV teacher will be helpful to you in making your own presentations? Responses: Yes, 56.5 per cent; No, 25.0 per cent; Don't know, 18.5 per cent (Table 1, p. 63).

Proponents of ITV unfailingly mention that it is an excellent in-service training device, presenting a rich variety of teaching methods and resources, which in turn, upgrade the effectiveness of the classroom teachers. The responses to this question would seem to support this contention to a substantial degree. Not unexpectedly, only 39.5 per cent of the administrators recorded a "Yes" to the question, while their "Don't know" response was 51.2 per cent, for only one administrator of the study actually taught in the classroom and thus would have first-hand experience upon which to base a judgment.

> Question 29/27. Do you think that participation in ITV will make a contribution to the pupils' learning situation over and above what you are now doing in the classroom? Responses: Yes, 81.5 per cent; No, 8.2 per cent; No change, 3.4 per cent; Don't know, 6.9 per cent (Table 1, p. 68).

A relatively heavy percentage of the respondents feel that ITV <u>did</u> enhance the learning situation in the classroom. It seems impossible to divorce this response from the implication that ITV does possess signally beneficial attributes and is a desirable medium in the classrooms of American schools, as the following question discloses.

> Question 30/28. As a professional educator, how do you feel toward expanding the use of ITV in American

> schools? Responses: Very favorably, 16.8 per cent; Favorably, with reservations, 72.9 per cent; Unfavorably, 5.6 per cent; Neutral, .9 per cent; Don't know, 3.9 per cent (Table 1, p. 69).

Combining the "Very favorably" and "Favorably, with reservations" responses, it is clear that a highly significant percentage--89.6--of the respondents favor the expansion of ITV, at least on an experimental basis, throughout the nation's schools. Somewhat paradoxically, however, a smaller--but still substantial--percentage of the respondents desired the expansion to occur in classrooms other than their own, as the ensuing question reveals.

> Question 31/29. How do you feel about the use of ITV in your classroom in the future? Responses: Prefer it, 66.8 per cent; Don't prefer it, 5.2 per cent; Neutral, 18.5 per cent; Don't know, 9.5 per cent (Table 1, p. 69).

This patent inconsistency may be motivated by several factors. The teachers realize the worth of ITV, but they would prefer to receive it in doses determined by themselves. If subjects are added via ITV to the curriculum, others should be compressed, modified or eliminated, else the teacher is under constant pressure in an endeavor to keep up with all the subjects. Finally, each classroom should have its own TV receiver, thus removing the inconvenience of trundling a set between two or three rooms. If the conditions just described were extant, the probability of having received even more "Prefer it" responses would have been consequentially greater.

Summary of the "greatest problem" in ITV. The deepest concerns expressed--in terms of frequency counts, Table 6, p. 108--on the open-end question by the respondents were:

1. The necessity of additional time and work upon the part of those classroom teachers participating in ITV.
2. The inflexibility of the ITV curriculum created through the necessity of the participants to follow courses of study selected by staffs other than the local ones.

The second problem listed above would be restricted chiefly only to those school systems outside the Lansing district, which at the present time selects the subjects that are telecast via Classroom 10.

An admissible supposition would be that once administrators become alert to the problems just reviewed, they would introduce immediate measures to alleviate them. If full-scale ITV participation is planned for adoption, a careful scrutiny should first be made of the current curriculum. Should the subjects that were to be received through telecasts be additions to what is already being taught, some revision and pruning of the regular courses would be expected; in fact, imperative. It would seem unreasonable to expect a teacher to incorporate a new subject, e.g., Spanish, into the curriculum without first compressing or eliminating certain portions of the regularly-taught subjects. It would seem incumbent upon both the classroom teacher and his supervisor to initiate this necessary adjustment in the curriculum, else the pressures and frustrations of the teacher may mount in direct proportion

to his depth of professional conscientiousness.

CONCLUSIONS

In general, teachers held very favorable attitudes toward ITV prior to their participation in it. Subsequent to nine months' ITV experience, the teachers still indicated favorable attitudes, but to a somewhat lesser degree than originally. The administrators' attitudes were substantially more favorable than the teachers' on both occasions, i.e., before and after ITV experiences. The study descried that teachers' expectations of ITV were not met in some areas. On the other hand, many anticipated problems were never realized, or were subsequently judged to be of a less serious nature than initially expected.

ITV was considered to be an effective, useful and desirable mode of teaching by the majority of the respondents of the study. The teachers indicated that ITV was helpful in providing ideas and demonstrating valuable teaching techniques which could be and were utilized for their own presentations.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are set forth:

1. School districts planning participation in instructional television programs should secure the involvement of administrators, teachers, pupils and parents,

and concomitantly, assure full reciprocation of ideas among the four groups so that all are completely informed at every stage of the planning period as to what the subsequent steps are to be. Periodical reports should also be provided for all concerned during the period of actual ITV participation on the progress of the experience.

2. The number of ITV programs viewed each day by each child should be carefully determined and controlled, for excessive viewing of telecasts may create added burdens for teachers and pupils alike.

3. If a new subject is to be added to the curriculum via ITV, then the curriculum must be modified (jointly, by teacher and supervisor) to the extent necessary to preclude overburdening and pressuring the teacher to maintain pre-ITV-length periods in all the subjects ordinarily covered by him. The teacher must have full assurance that curricular modifications will be expected and approved officially.

4. Workshops for the receiving and ITV teachers must be arranged before the commencement of telecasting, and during the reception period for optimum articulation between the two groups, and to derive the greatest benefits from the medium.

5. Scrupulous care must be exercised by the ITV studio instructors to prevent the utilization of one particular method of presentation; specifically, the lecture method should be generously diluted with a variety of other acceptable techniques, else the tacit implication that the lecture method is best will be conveyed.

6. Telecasts in the elementary schools should not exceed 30 minutes in length, for children of this age level generally find it difficult to absorb and retain material if it is presented in longer blocks of time. Fifteen to 20 minute periods are preferable, depending upon the subject matter.

7. All pupils, regardless of ability, of a particular classroom should be allowed to view the ITV programs telecast from Classroom 10; in other words, the pupils should not be segregated for ITV viewing.

8. The present time schedule employed by Classroom 10 for telecasting should be continued, for the majority of the respondents of the study found it satisfactory.

Suggestions for further study.

1. A rigorous study would seem warranted to determine if the currently employed evaluating techniques of pupil progress and achievement in the elementary schools participating in ITV programs are adequate, or if the development of new techniques would be desirable and necessary.

2. A follow-up to this study--in two or three years--to determine the attitudinal changes toward ITV by teachers, pupils, parents and administrators subsequent to further experience with the TV medium.

3. A survey of classroom teachers to ascertain what types of programs would be of most use to them.

4. A study to determine how the efforts of ITV and classroom teachers could be better coordinated for optimum effectiveness.

5. A study to establish more specifically what the financial needs would be--in terms of a practical yardstick, e.g., a per pupil basis--to participate in ITV programs.

BIBLIOGRAPHY

Bundy, Edward W. An Experimental Study of the Relative Effectiveness of Television Presentational Techniques and Conventional Classroom Procedures in Promoting Initial Comprehension of Basic Verb Form Concepts in Elementary Spanish. Published Doctor's dissertation, University of Michigan, 1959.

Cummings, William K. This Is Educational Television. Ann Arbor: Edwards Brothers, Inc., 1954.

Division of Radio-Television Education Annual Report. Philadelphia, Pa.: Philadelphia Public Schools, June, 1958-August 1959.

Educational Television Factsheet. Washington, D.C.: Joint Council of Educational Television, May, 1960.

Foshay, Finette P. Interaction in Learning: Implications for Television. Washington, D.C.: National Education Association, 1959.

Gable, Martha A. "Some Benefits and Problems of School TV," National Association of Educational Broadcasters Journal, November, 1959.

Good, Carter V., Barr, A.S., and Scates, Douglas E. The Methodology of Educational Research. New York: Appleton-Century-Crofts, Inc., 1941.

Herminghaus, Earl G. An Investigation of Television Teaching. St. Louis, Mo.: St. Louis Public Schools, February, 1957.

Jacobs, James N., and Bollenbacher, Joan. "Teacher and Pupil Opinions of Instructional Television," Bulletin of the National Association of Secondary School Principals, XLIV, March, 1960.

Kumata, Hideya. An Inventory of Instructional Television Research. Ann Arbor: Educational Television and Radio Center, December 1, 1956.

McNemar, Quinn. Psychological Statistics. New York: John Wiley and Sons, Inc., 1955.

"MSU's Classroom 10," Michigan Educational Journal, May 1, 1959.

Payne, Stanley L. The Art of Asking Questions. New Jersey: Princeton University Press, 1951.

Perry, Arnold. "Teaching by Television in Today's Schools," The Educational Forum, XXIV, May, 1960.

RCA Educational TV News, Camden, N.J.: Radio Corporation of America, January, 1960.

Remmers, H.H. Introduction to Opinion and Attitude Measurement. New York: Harper Brothers, 1954.

Scanlon, John J. "The Expanding Role of Television in American Education," The Journal of Educational Sociology, XXXII, May, 1959.

See, Harold W. "Send It To The President," Phi Delta Kappan, XXXVIII, January, 1957.

Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, Inc., 1956.

Siepmann, Charles A. TV and Our School Crisis. New York: Dodd, Mead & Company, 1958.

Teaching by Television. A Report from the Ford Foundation and the Fund for the Advancement of Education. New York: Office of Reports, 1959.

Teaching by Television. Pittsburgh, Pa.: Pittsburgh Educational Station WQED, no date.

Teaching by Television. New York: Ford Foundation Office of Reports, May, 1959.

Teacher Reaction to TV and Radio Programs Presented 1952-53. Baltimore, Md.: Baltimore Public Schools, no date.

Wigren, Harold E. "ETV: The Story Up to Now," National Association of Educational Broadcasters Journal, May, 1959.

Zeisel, Hans. Say It With Figures. New York: Harper Brothers, 1947.

APPENDIX A

Dear Educational Co-worker:

This questionnaire is addressed to those select few who have already participated in classroom instructional television (ITV) over Channel 10, WMSB-TV in the past. As you well know, we are becoming more and more involved--by choice and sometimes by force of circumstance--in a truly exciting and potentially powerful educational tool: in-school instructional television! We need to know what you think about ITV in the light of your experiences to date, so that the benefit of <u>your</u> thoughts and experiences can be fully drawn upon for future guidance.

The direction ITV takes, the role it plays in the educational future will depend, in large measure, upon <u>your personal</u> reactions and <u>responses.</u> Consequently, we feel that <u>your</u> opinions are of the utmost importance.

For these reasons we earnestly hope that you will be willing to answer the following questions and return this questionnaire in the self-addressed envelope before September 21, 1959. Of course, your name will not be used in any way and a summary of the final results will be sent to you. Please note that the questionnaire is to be returned <u>directly</u> to Channel 10, not to your principal.

Edward R. Gork, director of survey
Charles Ruffing, Producer, Classroom 10, WMSB-TV

PLEASE CHECK YOUR BEST ANSWER TO EVERY QUESTION!

Name_____School_____

School Address_____

Position: Teacher___Grade___; Principal___; Supt.___; Curriculum supervisor___Other_____

Dear Educational Co-worker:

This questionnaire is addressed to those select few who will be participating in classroom instructional television (ITV) over Channel 10, WMSB-TV for the first time. It is sent to you because we are becoming more and more involved--by choice and sometimes by force of circumstance--in a truly exciting and potentially powerful educational tool: in-school instructional television! We need to know what you think about ITV so that the benefit of your thinking can be fully drawn upon for future guidance.

The direction ITV takes, the role it plays in the educational future will depend, in large part, upon your personal reactions and responses. Therefore, we feel that your opinions are of the utmost importance whether you have participated in ITV or not.

For these reasons we earnestly hope that you will be willing to answer the following questions and return this questionnaire in the self-addressed envelope before September, 21, 1959. Of course, your name will not be used in any way and a summary of the final results will be sent to you. Please note that the questionnaire is to be returned directly to Channel 10, not to your principal.

Edward R. Gork, director of survey
Charles Ruffing, Producer, Classroom 10, WMSB-TV

PLEASE CHECK YOUR BEST ANSWER TO EVERY QUESTION!

Name_____School_____

School Address_____

Position: Teacher___Grade___; Principal___; Supt.___; Curriculum supervisor____; Other_____

Degrees: Bachelor's_____; Master's_____;Doctor's____

Years experience in teaching profession_____

Have you participated in ITV before? No___Yes(no. of mos.)____

1. Do you think that classroom teachers who will receive ITV programs need special training in order to be better able to handle TV instruction? Yes____No____Don't know____

2. Do you think that ITV can meet the same needs as are met by the special teacher (for example, the art teacher)? Yes___ No___Don't know___

3. What do you think the pupils' initial reaction will be toward ITV? Favorable___Unfavorable___Indifferent___Don't know___

4. What do you think the pupils' reaction will be over a period of time? Increasingly favorable___Increasingly unfavorable___ Unchanged___Don't know___

5. Do you think that the rate of content coverage by the TV instructor will prove to be a problem? Big problem___Small problem___No problem___Don't know___

6. Do you think that the ITV teacher will have teaching aids and resources superior to that of the classroom teacher? Always ___Usually___Sometimes___Never___Don't know___

7. How do you think that the use of ITV will affect classroom discipline? Improve it___No effect___Worsen it___Don't know___

8. What effect do you think that ITV in the classroom will have on the <u>prestige</u> of the classroom teacher? Increase it___No effect ___Decrease it___Don't know___

9. Do you think that the <u>teaching techniques</u> used by the ITV teacher will be helpful to you in making your own presentations? Yes___No___Don't know___

10. How would you intend to use ITV in your classroom? As a regular but supplementary resource___As a main resource___Only incidentally___

11. What effect do you think that taking part in ITV will have on the problem of maintaining ability groups (for example, reading groups) at different levels of progress? Increase it___ Decrease it___No effect___Don't know___

12. Do you think that ITV programs would be better suited to pupils of one ability level? Yes___No___Don't know___

13. Do you think that the necessity of preparing the entire classroom for an ITV program would reduce the effectiveness of your ability grouping? Yes___No___Don't know___

14. What is your reaction to the necessity of planning your regular classes around a rigid ITV time schedule? Difficult and undesirable___Difficult but desirable___Easy, no problem___ Don't know___

15. In your opinion, how do you think the use of ITV in the classroom will affect the amount of learning by the:
    a. Bright pupils? More___Less___About the same___Don't know___
    b. Average pupils? More___Less___About the same___Don't know___
    c. Slower pupils? More___Less___About the same___Don't know___

16. How do you think ITV in your classroom would affect the children's attitude toward school in general? Favorably___No effect___Unfavorably___Don't know___

17. Do you think that the inability of the pupils to ask questions directly of the ITV teacher will prove to be a handicap? Great handicap___Minor handicap___No handicap___Don't know___

18. What effect do you think taking part in ITV will have on your lesson preparation time for the subjects covered by TV? Increase it___Decrease it___Have no effect___Don't know___

19. What effect do you think taking part in ITV would have on children's academic interests? For example:
    a. Reading? Increase them___Decrease them___No effect___ Don't know___
    b. Social Studies? Increase them___Decrease them___No effect___Don't know___
    c. Science? Increase them___Decrease them___No effect___ Don't know___

20. What effect would you expect classroom ITV programs to have on work-study skills? For example:
    a. Listening? Increase___Decrease___No effect___Don't know___
    b. Note-taking? Increase___Decrease___No effect___ Don't know___
    c. Organizing research data? Increase___Decrease___No effect ___Don't know___

21. What effect do you think participating in ITV would have on the evaluating techniques for the subjects covered? Would need new techniques___Old techniques adequate___Don't know___

22. What would you say is the maximum number of children who could comfortably watch an ITV program on one 21" receiver in the room? 15-20___;20-25___;25-30___;30-35___;35-40___;40-45 ___;other____

23. What was the reaction of teachers in your building when asked to participate in ITV? Eager to participate___Reluctant to participate___Indifferent___Don't know___

24. About how long would you say an ITV lesson should be for grades 4-6?

Subject	Length of Time in Minutes						
	15	20	25	30	40	50	Other
Art							
Spanish							
Social Studies							
Music							
Science							
Story Telling							

25. Do you think teachers in general would resent having their pupils taken over by the ITV instructor? Yes___No___Neutral___ Don't know___

26. In general, what do you think is the attitude of your pupils' parents toward ITV in your classroom? Favorable___Unfavorable___ Neutral___Don't know___

27. Were the parents of your pupils informed formally by the school administration that their children would be participating in an ITV program? Yes___No___I don't know___

28. If not formally, how many of your pupils' parents have been notified in some manner by a school representative that their children would be participating in ITV? All___Nearly all___About half___Few___None___I don't know___

29. Do you think that participation in ITV will make a contribution to the pupils' learning situation over and above what you are now doing in the classroom? Yes___No___No change___ Don't know___

30. As a professional educator, how do you feel toward expanding the use of ITV in American schools? Very favorably___Favorably, but with reservations___Unfavorably___Neutral___Don't know___

31. How do you feel about the use of ITV in your classroom in the future? Prefer it___Don't prefer it___Neutral___Don't know___

32. As you see it now, the greatest problem in taking part in ITV programs in the classroom would be: (Please check one only)

____No problem
____Require much additional time and work for classroom teacher.
____Would cause much time to be wasted.
____Would cost too much.
____Would cost more than it is worth.
____Other_____
(Please specify)

APPENDIX B

Dear Educational Co-worker:

We wish to extend a sincere professional and personal "Thank you" for your gratifying response last September to our questionnaire dealing with in-school instructional television (ITV).

You will recall that you checked a questionnaire regarding ITV programs that you had received, or were about to receive in your classroom from WMSB-TV, Channel 10.

Now, after a year's experience with ITV, your original opinions may have been reinforced, left relatively undisturbed, modified to a greater or lesser degree--or, they may have been changed completely. For this reason we are sending this follow-up questionnaire. You need not try to recall how you answered similar questions last fall. Just answer each as you now feel. You should feel free to check "Don't know" if you still are in doubt despite your experience.

The direction ITV takes, the role it plays in the educational future will depend, in large measure, upon your personal reactions and responses. Consequently, we feel that your opinions are of the utmost importance.

In view of these reasons, then, we trust that you will again be willing to check the following questionnaire and return it in the self-addressed envelope before June 1, 1960, please. Of course, your name will not be used in any way and a summary of the final results will be sent to you. The questionnaire, you will note, is to be returned directly to Channel 10, not to your principal.

Edward R. Gork, director of survey
Charles Ruffing, Producer, Classroom 10

PLEASE CHECK YOUR BEST ANSWER TO EVERY QUESTION!

Name_____School_____

School Address_____

1. Do you think that classroom teachers who will receive ITV programs need special training in order to be better able to handle TV instruction? Yes___No___Don't know___

2. Do you think that ITV can meet the same needs as are met by the special teacher? (for example, the art teacher?) Yes___ No___Don't know___

3. What was the initial reaction of pupils toward ITV? Favorable___Unfavorable___Indifferent___Don't know___

4. What was the pupils' reaction as the year progressed? Increasingly favorable___Increasingly unfavorable___Unchanged___

5. Did the rate of content covered by the TV instructor prove to be a problem? Big problem___Small problem___No problem___ Don't know___

6. Did you find that the ITV teacher had teaching aids and resources superior to yours? Always___Usually___Sometimes___ Never___Don't know___

7. Did you find that ITV affects classroom discipline? Improved it___No effect___Worsened it___Don't know___

8. What effect did ITV in the classroom have on the prestige of the classroom teacher? Increased it___No effect___Decreased it ___Don't know___

9. Were the teaching techniques used by the ITV teacher helpful to you in making your own presentations? Yes___No___Don't know___

10. How would you use ITV in your classroom in the future? As a regular but supplementary resource___As a main resource___ Only incidentally___

11. What effect did taking part in ITV have on the problem of maintaining ability groups (for example, reading groups) at different levels of progress? Increased it___No effect___Decreased it___Don't know___

12. Do you think that ITV programs would be better suited to pupils of one ability level? Yes___No___Don't know___

13. Did you find that the necessity of preparing the entire classroom for an ITV program reduced the effectiveness of your ability grouping? Yes___No___Don't know___

14. What is your reaction to the necessity of planning your regular classes around a rigid ITV time schedule? Difficult and undesirable___Difficult but desirable___Easy, no problem___ Don't know___

15. Was the time at which the ITV programs were scheduled a satisfactory one, or would you have preferred another time? Satisfactory___Would have preferred___a.m.___p.m.
(Please state time)

16. How did the use of ITV in the classroom affect the amount of learning by the:
Bright pupils? More___Less___About the same___Don't know___
Average pupils? More___Less___About the same___Don't know___
Slower pupils? More___Less___About the same___Don't know___

17. Do you think that ITV in your classroom has affected the children's attitude toward school in general? Favorably___ No effect___Unfavorably___Don't know___

18. Did the inability of the pupils to ask questions directly of the ITV teacher prove to be a handicap? Great handicap___ Minor handicap___No handicap___Don't know___

19. What effect did taking part in ITV have on your lesson preparation time for the subject covered by TV? Increased it___ Decreased it___Had no effect___Don't know___

20. What effect did taking part in ITV have on the children's academic interests: For example:
Reading? Increased them___Decreased them___No effect___
Don't know___
Social Studies? Increased them___Decreased them___No effect___
Don't know___
Science? Increased them___Decreased them___No effect___
Don't know___

21. What effect did you find classroom ITV programs to have on work-study skills? For example:
Listening? Increased them___Decreased them___No effect___
Don't know___
Note-taking? Increased them___Decreased them___No effect___
Don't know___
Organizing research data? Increased them___Decreased them___
No effect___Don't know___

22. What effect did participating in ITV have on the evaluating techniques for the subjects covered? Need new techniques___ Old techniques were adequate___Don't know___

23. What is the maximum number of children who can comfortably watch an ITV program on one 21" receiver in the classroom?
15-20___20-25___25-30___30-35___35-40___40-45___Other___

24. About how long would you say an ITV lesson should be? (Please indicate grade level you have in mind: grade___)

Subject	Length of Time in Minutes						
	15	20	25	30	40	50	Other
Art							
Spanish							
Social Studies							
Music							
Science							
Story Telling							

25. Do you think that teachers in general resented having their pupils "taken over" by the ITV instructor? Yes___No___Neutral___ Don't know___

26. In general, what do you think is the attitude of your pupils' parents toward ITV in your classroom? Favorable___ Unfavorable___Neutral___Don't know___

27. Do you think that participating in ITV made a contribution to the pupils' learning situation over and above what you would have done ordinarily in the classroom? Yes___No___No change___ Don't know___

28. As a professional educator, how do you feel toward expanding the use of ITV in American schools? Very favorably___ Favorably, but with reservations___Unfavorably___Neutral___ Don't know___

29. How do you feel about the use of ITV in your classroom in the future? Would like it___Neutral___Would not like it___ Don't know___

30. In your opinion, how does ITV compare with instructional films in the classroom? TV better___Films better___No difference___Depends on purpose of film or TV___

31. As you see it now, the greatest problem in taking part in ITV programs in the classroom is: (Please check one only.)

____No problem
____Require much additional time and work for teacher.
____Would cause much time to be wasted.
____Would cost too much.
____Would cost more than it is worth.
____Worth it, but do not have the money for it.
____Other_____
(Please specify)

APPENDIX C

PERSONAL INTERVIEW OUTLINE

Name_____School_____

Position: Teacher____Grade____Other_____

Years experience in teaching____Experience in ITV_____
(months)

In analyzing the responses to the two questionnaires, I noted certain developments that I felt could be understood with greater clarity if they were discussed more fully in personal interviews. For that reason I am interviewing several persons who had been participating in "Classroom 10" telecasts and responded to both questionnaires. Your cooperation in responding to the two questionnaires and participating in this interview is deeply appreciated.

1. Re question 12 (Do you think that ITV programs would be better suited to pupils of one ability level?): Out of 189 teachers, 104 responded "No." Would you say that ITV is equally beneficial to children of all abilities, or that children of all abilities can profit in some measure from ITV programs?

2. Re question 22 (What effect did participating in ITV have on the evaluating techniques for the subjects covered? Need new techniques? Old techniques adequate?): This question received 96 "Don't know" responses on the second questionnaire. Only 30 respondents felt that "Old techniques" would be adequate. Why do you think there were so many "Don't know" responses? In what way and in what areas are the old evaluating methods inadequate?

3. Re question 23, on the first questionnaire only (What was the reaction of teachers in your building when asked to participate in ITV?): For what reasons would teachers be reluctant to participate? What sort of things did you hear teachers say?

4. Re question 9 (Were the teaching techniques used by the ITV teacher helpful to you in making your own presentations?): The second questionnaire carried 38 more "No" responses than the first. Although more than 60 per cent of the respondents answered "Yes," would you have any idea why 38 changed to "No"?

5. Re question 15c (How did the use of ITV in the classroom affect the amount of learning by the slower pupils?): The "Don't know" responses increased from 22 to 37 on the second questionnaire. Would you say this indicates that it is more difficult to evaluate the slow pupils? What other reasons would you suggest?

6. Re question 21b (What effect did you find classroom ITV programs to have on work-study skills: For example, note-taking?): Out of the 189 teachers, 40 responded "Don't know," and 76 indicated ITV had "No effect." Do you think that a systematic attempt was made by the teachers to measure growth in note-taking-skills? Or is there very little note-taking taught in elementary schools?

7. Re question 21c (What effect did you find classroom ITV programs to have on organizing-research skills?): "No effect" was checked by 77 teachers, and 57 responded "Don't know." Again, are these skills taught in the elementary school? How would they be measured?

8. Re question 1 (Do you think that classroom teachers who receive ITV programs need special training in order to be better able to handle ITV instruction?): Although 118 of the 189 teachers felt special training was not required, 56 indicated that it was. What would be the most practical kind of help that a receiving teacher could be given?

9. Re question 19 (What effect did taking part in ITV have on your lesson preparation time for the subjects covered by ITV?): Of the 189 teachers, 78 indicated that lesson preparation time was increased. In exactly what ways was it increased? For example, how many more hours per week were required? Was this increased time interesting? Challenging? Or a bore--something that had to be done?

10. Re question 32 (As you see it now, the greatest problem in taking part in ITV programs in the classroom would be): "Lack of time" was frequently listed as the greatest problem. Lack of time for what? The introduction of the TV lesson? For the follow-up? For the lesson itself? How do films and filmstrips compare with ITV in the classroom? Would lack of time be a significant factor here too? Just as in ITV? "Scheduling" was also given quite frequently

as the greatest problem. What do you think the respondents meant by this answer?

11. How do you think school administrators feel about ITV?

12. Did you or any teachers in your building experience any physical or mechanical problems in connection with ITV? For example, were you able to get the TV set when you needed it? Good reception? Any problems of sharing the TV set? Classroom suitable?

13. What would you say is the "climate of opinion" regarding the use of TV in the classroom? How do teachers in general react to ITV? In your building? At meetings? At workshops?

14. As you look back, do you think the questionnaires covered the important aspects of teachers and instructional television? What didn't the questionnaires ask that should have been asked? Have you any second thoughts on the questions that <u>were</u> covered by the questionnaires? (Copy of questionnaire was provided for the interview.)

15. What do you think about "Airborne TV"? That is, the plan for telecasting classroom instruction from an airplane circling 23,000 feet above northern Indiana?

APPENDIX D

WEIGHTINGS OF ATTITUDE-MEASURING QUESTIONS

Degrees: Bachelor's_____; Master's_____;Doctor's____

Years experience in teaching profession_____

Have you participated in ITV before? No___Yes(no. of mos.)____

1. Do you think that classroom teachers who will receive ITV programs need special training in order to be better able to handle TV instruction? Yes____No____Don't know____

2. Do you think that ITV can meet the same needs as are met by the special teacher (for example, the art teacher)? Yes___ No___Don't know___

\+ 3. What do you think the pupils' initial reaction will be toward ITV? Favorable 5 Unfavorable 1 Indifferent 3 Don't know 3

\+ 4. What do you think the pupils' reaction will be over a period of time? Increasingly favorable 5 Increasingly unfavorable 1 Unchanged 3 Don't know 3

\+ 5. Do you think that the rate of content coverage by the TV instructor will prove to be a problem? Big problem 1 Small problem 4 No problem 5 Don't know 3

6. Do you think that the ITV teacher will have teaching aids and resources superior to that of the classroom teacher? Always ___Usually___Sometimes___Never___Don't know___

\+ 7. How do you think that the use of ITV will affect classroom discipline? Improve it 5 No effect 3 Worsen it 1 Don't know 3

\+ 8. What effect do you think that ITV in the classroom will have on the prestige of the classroom teacher? Increase it 5 No effect 3 Decrease it 1 Don't know 3

\+ 9. Do you think that the teaching techniques used by the ITV teacher will be helpful to you in making your own presentations? Yes 5 No 1 Don't know 3

10. How would you intend to use ITV in your classroom? As a regular but supplementary resource___As a main resource___Only incidentally___

\+ 11. What effect do you think that taking part in ITV will have on the problem of maintaining ability groups (for example, reading groups) at different levels of progress? Increase it 1 Decrease it 5 No effect 3 Don't know 3

12. Do you think that ITV programs would be better suited to pupils of one ability level? Yes___No___Don't know___

+ 13. Do you think that the necessity of preparing the entire classroom for an ITV program would reduce the effectiveness of your ability grouping? Yes 1 No 5 Don't know 3

+ 14. What is your reaction to the necessity of planning your regular classes around a rigid ITV time schedule? Difficult and undesirable 1 Difficult but desirable 4 Easy, no problem 5 Don't know 3

+ 15. In your opinion, how do you think the use of ITV in the classroom will affect the amount of learning by the:
    a. Bright pupils? More 5 Less 1 About the same 3 Don't know 3
    b. Average pupils? More 5 Less 1 About the same 3 Don't know 3
    c. Slower pupils? More 5 Less 1 About the same 3 Don't know 3

+ 16. How do you think ITV in your classroom would affect the children's attitude toward school in general? Favorably 5 No effect 3 Unfavorably 1 Don't know 3

+ 17. Do you think that the inability of the pupils to ask questions directly of the ITV teacher will prove to be a handicap? Great handicap 1 Minor handicap 3 No handicap 5 Don't know 3

18. What effect do you think taking part in ITV will have on your lesson preparation time for the subjects covered by TV? Increase it___ Decrease it___ Have no effect___ Don't know___

+ 19. What effect do you think taking part in ITV would have on children's academic interests? For example:
    a. Reading? Increase them 5 Decrease them 1 No effect 3 Don't know 3
    b. Social Studies? Increase them 5 Decrease them 1 No effect 3 Don't know 3
    c. Science? Increase them 5 Decrease them 1 No effect 3 Don't know 3

+ 20. What effect would you expect classroom ITV programs to have on work-study skills? For example:
    a. Listening? Increase 5 Decrease 1 No effect 3 Don't know 3
    b. Note-taking? Increase 5 Decrease 1 No effect 3 Don't know 3
    c. Organizing research data? Increase 5 Decrease 1 No effect 3 Don't know 3

21. What effect do you think participating in ITV would have on the evaluating techniques for the subjects covered? Would need new techniques___ Old techniques adequate___ Don't know___

22. What would you say is the maximum number of children who could comfortably watch an ITV program on one 21" receiver in the room? 15-20___;20-25___;25-30___;30-35___;35-40___;40-45___;other____

23. What was the reaction of teachers in your building when asked to participate in ITV? Eager to participate___Reluctant to participate___Indifferent___Don't know___

24. About how long would you say an ITV lesson should be for grades 4-6?

Subject	Length of Time in Minutes						
	15	20	25	30	40	50	Other
Art							
Spanish							
Social Studies							
Music							
Science							
Story Telling							

+ 25. Do you think teachers in general would resent having their pupils taken over by the ITV instructor? Yes 1 No 5 Neutral 3 Don't know 3

+ 26. In general, what do you think is the attitude of your pupils' parents toward ITV in your classroom? Favorable 5 Unfavorable 1 Neutral 3 Don't know 3

27. Were the parents of your pupils informed formally by the school administration that their children would be participating in an ITV program? Yes___No___I don't know___

28. If not formally, how many of your pupils' parents have been notified in some manner by a school representative that their children would be participating in ITV? All___Nearly all___About half___Few___None___I don't know___

+ 29. Do you think that participation in ITV will make a contribution to the pupils' learning situation over and above what you are now doing in the classroom? Yes 5 No 1 No change 3 Don't know 3

+ 30. As a professional educator, how do you feel toward expanding the use of ITV in American schools? Very favorably 5 Favorably, but with reservations 4 Unfavorably 1 Neutral 3 Don't know 3

+ 31. How do you feel about the use of ITV in your classroom in the future? Prefer it 5 Don't prefer it 1 Neutral 3 Don't know 3

32. As you see it now, the greatest problem in taking part in ITV programs in the classroom would be: (Please check one only)

____No problem
____Require much additional time and work for classroom teacher.
____Would cause much time to be wasted.
____Would cost too much.
____Would cost more than it is worth.
____Other_____
(Please specify)