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TEACHER-PUPIL PERCEPTIONS REGARDING EDUCATIONAL TELEVISION IN SELECTED METROPOLITAN AREA ELEMENTARY SCHOOLS

by

George Allan Gogo

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in the
University of Michigan
1966

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TEACHER-PUPIL PERCEPTIONS REGARDING EDUCATIONAL TELEVISION IN SELECTED METROPOLITAN AREA ELEMENTARY SCHOOLS

by

George Allan Gogo

The purpose of this study was twofold: (1) to determine the degree of acceptance or rejection by students and classroom teachers of educational television as an effective medium of instruction; (2) to determine whether or not there are certain personal characteristics of students and classroom teachers which are related to their acceptance or rejection of educational television as an effective classroom medium of instruction.

Hypotheses

Two general hypotheses were tested within the framework of these purposes:

1. Circumstances in personal and professional characteristics of teachers along with the nature of their experiences with educational television will be found to be

associated with the degree of acceptance of educational television as a classroom teaching medium by classroom teachers.

2. Circumstances in the characteristics of students, student experiences with educational television, and teachers' attitudes toward educational television will be found to be associated with the degree of acceptance of educational television as a classroom teaching medium by students.

Procedure

One hundred eighty-three teachers of fourth, fifth, and sixth grade students in selected metropolitan area elementary schools, presently utilizing educational television as an instructional medium in their classrooms, were administered the Educational Television Teacher Attitude Inventory and the Educational Television Teacher Experience Questionnaire. Data collected from the ETTAI were utilized to select ten teachers who scored in the upper quartile with respect to favorable attitudes toward educational television and ten teachers who scored in the lower quartile with respect to unfavorable attitudes toward educational television.

Three hundred twenty-three students of the ten teachers with favorable attitudes and 310 students of the ten teachers

with unfavorable attitudes were administered the Educational Television Attitude Scale, Grades 4-6.

Findings

Significant relationships were found between the following teacher characteristics and a favorable attitude toward educational television.

Degree of home television viewing

Participation in the decision to use educational television in the classroom

Perceiving educational television as a means to improve instruction rather than as an economy measure

Perceiving that educational television affords greater opportunity for recognition of students' individual differences

Perceiving educational television as a means to evaluate student achievement in a variety of ways

Degree to which teachers prepare for the educational television lesson

Perceiving educational television as providing student experiences not otherwise possible

Significant relationships were found between the following student characteristics and a favorable attitude toward educational television.

Age

Frequency of participation in extra-curricular activities

Degree of previous exposure to educational television

Placement of students in science and mathematics classes as opposed to English or social studies classes

Participation in the decision to use educational television in the classroom

Having a classroom teacher who possesses favorable attitudes toward educational television

ACKNOWLEDGEMENTS

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To my children, Debra, Robert, Diane, Ritchie, and John, I express my gratitude for their patience in sacrificing some of their interests and activities and the companionship they deserve from a father so that he might complete this dissertation.

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CHAPTER I

INTRODUCTION

Educators in recent years have come to realize that the nation's schools and colleges face the dual challenge in the coming years of educating increasinging numbers of students and of improving the quality of their education.

To accomplish these goals, educational expenditures will have to increase, but most educators agree that it will require more than money to solve the problems posed by this challenge. It seems reasonable to assume that both quality and quantity can be raised simultaneously, and problems of finance and teacher shortage overcome, but it is likely that basic changes need to be made in conventional practices of schools and colleges in order to accomplish these goals. As a result, the past few years have witnessed an unprecedented number of experiments and new developments in American education.

One of the most controversial and perhaps significant of these innovations has been the application of television as a medium of instruction. Few fundamental innovations in education have spread as rapidly as television. A disting-

uished professor once remarked that it took about fifty years for a new idea to gain acceptance in American education, but this certainly has not been the case with educational television.[1] Because of its enormous educational potential, the use of instructional television has been compared by some as important as the textbook in its impact on the educational process.[2]

Numerous efforts have been made to assess the value of educational television through observation and research.[3,4] Although some of these attempts have proved valuable, one area that needs further investigation is that of the factors that determine the acceptance or rejection of educational television as an effective medium of instruction by students and classroom teachers. Since the classroom teacher and his pupils are the significant participants in the learning situation, it is essential that their reactions to educational television be studied in greater depth than has

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[1] Teaching by Television, Ford Foundation and the Fund for the Advancement of Education, (New York: 1960), p. 1.

[2] Ibid., p. 2.

[3] Hideya Kumata, An Inventory of Instructional Television Research (Ann Arbor: Educational Television and Research Center, December, 1956).

[4] Presley D. Holmes, Jr., Television Research in the Teaching-Learning Process (Detroit: Wayne State University Division of Broadcasting, 1959).

heretofore been the case.

SIGNIFICANCE OF THE STUDY

The value of this investigation lies in the need to provide empirical data which may corroborate hypotheses about the acceptance or rejection, by classroom teachers and students, of educational television as an effective classroom teaching medium. The corroboration of these hypotheses would be valuable in giving direction to curriculum improvement utilizing educational television.

It is hoped also that this study might provide some insights into the perceptions of students and teachers concerning classroom use of television which may lead to (1) improved telecasts (2) greater articulation between educational broadcasters and users (3) more effective utilization of educational television and (4) more useful materials in conjunction with educational telecasts.

In addition, it may give some indication as to the kind of teacher and student who might profit most from educational television.

Finally, this study might serve as a step in focusing greater attention on the growing impact of educational television on the schools and hopefully offer some direction in which further research might be directed.

STATEMENT OF THE PROBLEM

The purpose of this study was twofold: (1) to determine the degree of acceptance or rejection by students and classroom teachers of educational television as an effective medium of instruction; (2) to determine whether or not there are certain personal characteristics of students and classroom teachers which are related to their acceptance or rejection of educational television as an effective classroom medium of instruction.

HYPOTHESES

I. Circumstances in personal and professional characteristics of teachers along with the nature of their experiences with educational television will be found to be associated with the degree of acceptance of educational television as a classroom teaching medium by classroom teachers.

A. Teachers having the following personal characteristics will be more likely to be favorably inclined towards educational television.

1. They will be males.
2. They will be younger.
3. They will be married.
4. They will have children.
5. They will spend more time at home watching television.
6. They will have participated in dramatics or related activities in high school, college, or in community groups.

7. They will have favorable attitudes toward educational television as measured by the Educational Television Teacher Attitude Inventory.[1]

B. Teachers having the following professional characteristics will be more likely to be favorably inclined towards educational television.

1. They will have fewer years experience in the profession.
2. They will have more formal education.
3. They will have more recent formal training.
4. They will have taken more formal courses in audio-visual education.
5. They will have been formally educated in subject areas associated with communication skills.
6. They will have utilized educational television in their student teaching.
7. They will have received in-service education in the use of educational television.
8. They will be teachers of lower grade levels.

C. Teachers having the following experiences will be more likely to be favorably inclined toward educational television.

1. They will have made greater use of materials supplied by the educational television broadcast source.
2. They will have communicated more frequently with the educational television source.
3. They will have been students in classes which utilized educational television in instruction.

---

[1]Charles W. Hardaway, A Study of Attitudinal Changes of Teachers and Pupils Toward Educational Television (Terre Haute: Indiana State College, June, 1963).

4. They will have participated in the decision to utilize educational television in their classrooms.

5. They will have spent more years using educational television in their classrooms.

6. They will have perceived that educational television was introduced into their classrooms to improve instruction as opposed to being instituted as an economy measure.

7. They will have perceived their role as being dominant to that of the educational television instructor.

8. They will have perceived that educational television affords greater opportunity for recognition of individual differences.

9. They will have perceived that educational television provides them with indirect in-service training in teaching methods.

10. They will have perceived that educational television affords greater opportunity to evaluate student achievement in a variety of ways.

11. They will have spent more time in pre-television instruction time to supplement the televised lesson.

12. They will have spent more time in post-television instruction time to supplement the televised lesson.

13. They will have perceived that educational television provides student experiences not otherwise possible.

II. Circumstances in the characteristics of students, student experiences with educational television, and teachers' attitudes toward educational television will be found to be associated with the degree of acceptance of educational television as a classroom teaching medium by students.

A. Students having the following personal characteristics will be more likely to be favorably inclined towards

educational television.

1. They will be males.
2. They will be younger.
3. They will have participated more frequently in extra-curricular activities.
4. They will spend more hours each week at home watching television.
5. They will have less ambitious educational plans.
6. They will have less ambitious occupational plans.

B. Students having the following experiences will be more likely to be favorably inclined towards educational television.

1. They have had more previous exposure to educational television.
2. They will be in science and mathematics classes as opposed to social studies and English classes.
3. They will have participated in the decision to be placed in a class employing educational television.

C. Students whose teachers have higher scores on the ETTAI will be more favorably inclined towards educational television than students whose teachers score lower on the ETTAI.

LIMITATIONS OF THE STUDY

This study was limited to teachers and students from selected metropolitan elementary schools which were utilizing educational television in their instructional programs

during the 1965-1966 school year.

The participants in this study were further restricted to students in fourth, fifth, and sixth grades and classroom teachers of these grades.

Subject areas were limited to English, science, social studies, arithmetic, and foreign language.

Sources of the educational broadcasts have been limited to those originating or broadcast from the Midwest Program on Airborne Television Instruction and the Detroit Public School's educational television station WDTR.

A further limitation is the instruments used. The many limitations of the questionnaire method in research have been carefully pointed out by Jenkins[1,2] and Lazarsfeld.[3] Among these limitations are the following:

1. The answers to questions are in part, at least, a function of the way the questions are asked.
2. A respondent may not have the necessary information to answer the question.

---

[1]John G. Jenkins, "Characteristics of the Question as Determinants of Dependability," Journal of Consulting Psychology, V (July-August, 1941), pp. 164-169.

[2]John G. Jenkins, "The Questionnaire as a Research Instrument," Transactions of the New York Academy of Science, II (February, 1940), pp. 118-140.

[3]Paul F. Lazarsfeld, "The Art of Asking Why in Marketing Research," National Marketing Review, I (1935), pp. 1-13.

3. No two individuals interpret a question in exactly the same manner.

4. There may be reasons that cause participants to give inaccurate answers.

5. As in the case in all questionnaires the data received are dependent on the honesty and sincerety of the respondents.

The evaluation of this study was confined to the interpretation of data collected, and to the implications of these data for further research.

DESCRIPTION OF INSTRUMENTS

Hardaway developed the following scales which are designed to measure the attitudes of teachers and pupils toward educational television.

1. Educational Television Attitude Scale, Upper Elementary - Grades 4-6

2. Educational Television Teacher Attitude Inventory

The development of the pupils' scale was accomplished through the cooperative efforts of the faculty and pupils of the Indiana State College Laboratory School and the teachers and pupils of the Evansville, Indiana, Public Schools. The elementary teachers of the Laboratory School drafted a pool of items suitable in content and reading level for upper elementary school pupils. The TV Research Committee of Indiana State College followed similar procedures in constructing appropriate items for use with teachers. This committee then went through the process of screening, revising, editing, and organizing items into

two tentative scales.

Classroom activities covered in each scale include the following:

1. Curricular content - items pertaining to specific aspects of the subject matter, objectives, course offerings, and the like.

2. Instructional effectiveness - items geared directly to the teaching-learning process and general teaching skills or the teaching act.

3. Role of the teacher - items having to do with the security of the teacher, or conversely, having to do with threats to the teacher.

4. Role of the pupil - items referring to traits or developments of the pupils involving such things as attitudes, skills, habits, and overall impact of television on the pupil.

The scale items require forced-choice answers, by which the respondent indicates that he "strongly agrees," "agrees," is "undecided," "disagrees," or "strongly disagrees" with the statements.

Both scales were examined for level of reading difficulty. The Dale-Chall formula was used, counting "television," "TV," and "instructional" as familiar words. It was found that the elementary form was at the fifth-sixth grade reading level and the teacher form at the eleventh-twelfth grade reading level.

Preliminary forms of the two scales were then administered to 124 elementary pupils and sixty-one teachers in the Evansville Public Schools and to 123 elementary pupils and fifty teachers in the Indiana State College Laboratory School. The Evansville pupils and teachers had been participating in the Southwestern Indiana Educational Council's educational television program for three years, while the teachers and pupils in the Laboratory School had no previous experience with the medium of television in the classroom. It was assumed that if an item discriminated between the two groups, it possessed sufficient validity to justify inclusion in the scales. Such discriminate power was determined by an item response tabulation. Final forms of the two scales were then developed and printed.

An Educational Television Teacher Experience Questionnaire was developed to gather data pertinent to personal and professional characteristics of teachers and the nature of teachers' experiences with educational television.

An Educational Television Student Experience Questionnaire was developed to gather data pertinent to personal characteristics of students and the nature of student experiences with educational television.

METHODS AND PROCEDURES

Once appropriate administrative approval of participation was secured, a randomly selected sample of 183 teachers

and 633 students from selected Detroit metropolitan area schools were scheduled for the administration of the instruments. All subjects were presently utilizing educational television as a planned part of their instructional programs.

The Educational Television Teacher Attitude Inventory and the Educational Television Teacher Experience Questionnaire were administered to all teacher subjects to determine their degree of acceptance of educational television as a planned part of their instructional programs.

Ten teachers who scored favorably (third quartile and higher, a score of 148 or higher) and ten teachers who scored unfavorably (first quartile and lower, a score of 120 and lower) on the ETTAI were chosen for further study.

Students in the classes of those teachers designated favorable and unfavorable towards educational television were administered the Educational Television Attitude Scale Grade 4-6 and the Educational Television Student Experience Questionnaire.

Data were coded for recording on IBM cards. Frequency and percentagized tables were calculated for all variables relating to the hypotheses. Data in these tables were examined using the chi-square distribution.

ASSUMPTIONS

In an effort to establish direction, focus, and meaning to this study, the following assumptions were made.

First of all, it was assumed that differences in personal and professional characteristics existed in the subjects being considered in this study and that these differences have important implications in acquiring greater insights into various aspects of educational television.

It is assumed that students and teachers, in this study, have attitudes toward educational television and that they are willing to express these attitudes.

It is assumed that attitudes can be measured and their statistical relationship to other factors may hold implications for the improvement of educational television.

Finally, and perhaps most importantly, this study assumes that attitudes of students and teachers have an effect on student learning.

DEFINITION OF TERMS

For the purpose of this study, terms that may be ambiguous are defined as follows:

Attitude: Many definitions of attitude have been proposed. Psychologists' definitions have a common theme

that suggests that attitude may be viewed as a latent variable. Thurstone in his pioneer work used attitude to "denote the sum-total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specific topic."[1] Allport, after a careful analysis of early definitions regarding attitude, concluded that "attitude is a mental and neural state of readiness exerting a direct influence upon the individual's response to all objects and situations with which it is related."[2] The definition of attitude which is most applicable to this study is that of Guilford. He defines attitude as "a personal disposition common to individuals but possessed to different degrees, which impels them to react to objects, situations, or propositions in ways that can be called favorable or unfavorable."[3]

Follow-Up Time: The period of time following the television portion of the lesson.

On Camera Teacher: The teacher in the television studio presenting the television lesson via television.

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[1]L. L. Thurstone, The Measurement of Attitudes (Chicago: University of Chicago Press, 1929), p. 6.

[2]Gordon W. Allport, "Attitudes" in Murchison, Carl (ed.) A Handbook of Social Psychology (Worchester: Clark University Press, 1935), p. 810.

[3]J. P. Guilford, Psychometric Methods (New York: McGraw-Hill Book Company, Inc., 1954), p. 456.

Preparation Time: The period of time preceding the television portion of the lesson.

TV Class: A class designated to study a specific subject which is presented by television.

Viewing Teacher: The teacher in the classroom utilizing the television lesson with the children.

PLAN OF STUDY

Chapter I reported the current significance and delineation of a problem in a neglected area. Hypotheses to be tested, assumptions underlying the study, and terms unique to the study have also been discussed and defined.

In Chapter II, research related to the study will be reviewed. An analysis of the data and the findings of the study will be presented in Chapter III. In Chapter IV, conclusions, implications, and recommendations for further research will be presented.

CHAPTER II

REVIEW OF RELATED RESEARCH

Instructional television research is concentrated in the decade of the 1950's. Although much of this research is concerned with the implications of television for education generally, attention is directed to the following topics which the writer feels have special significance to this study.

1. A brief history of educational television.
2. Attitudes of teachers regarding educational television.
3. Attitudes of students regarding educational television.
4. Learning from educational television.
5. Issues and problems confronting educational television.
6. Future of educational television.

HISTORY OF EDUCATIONAL TELEVISION

The early beginnings of instruction by television were

characterized by programs that had educational implications as indicated by these reports.

> Probably the most extensive of early endeavors in educational television programming were the more than 400 programs transmitted over a mechanical scanning system at the State University of Iowa's experimental station W9XK between 1932 and 1939 . . . telecasts included lectures in art, engineering, shorthand, botany and astronomy, among other, as well as entertainment events.[1]

> As early as 1940, Dr. Francis Norton opened the 40th Anniversary exercises at the General Electric Research Laboratories with a telecast demonstration of "Glass to Metal Seals," from station WRGB-TV Schenectady, N. Y., sporadic science telecasts were made during World War II.[2]

In 1942, the National Broadcasting Company produced a series of telecasts for the purpose of training thousands of air-raid wardens in the New York area. This was the first effort of mass education via television.[3]

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[1]William Kenneth Cumming, This is Educational Television (Columbia: Communications Series, Box 621, 1954) p. 1.

[2]Lynn Poole, Science Via Television (Baltimore: The Johns Hopkins Press, 1950), p. 2.

[3]National Broadcasting Company, Department of Information, RCA-NBC Firsts in Television (New York: National Broadcasting Company), p. 3.

In-school telecasting on a regular basis began in the Philadelphia Public Schools on commercial stations in 1948-1949. The nation's first television station licensed to an educational institution was WOI-TV, operated commercially by Iowa State College since 1950.[1]

In 1951 Western Reserve University began producing courses for university credit over the commercial station in Cleveland. The following year saw the broadcast of a full day of regular lessons to thirteen schools in two communities from Montclair State College in New Jersey.[2]

The potential educational value of the new medium was recognized early and in 1952 the Federal Communications Commission reserved 242 channels for educational purposes.[3] This number has since been substantially increased.[4]

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[1]Mary Howard Smith, Using Television in the Classroom Midwest Program on Airborne Television Instruction, (New York: McGraw-Hill Book Company, Inc., 1961),p. 6.

[2]Ibid. p. 6.

[3]Dartmouth Television Committee, "A Faculty Committee Looks at Educational Television," The Educational Record, Vol. 35, No. 4 (October, 1954),p. 294.

[4]George N. Gordon, Educational Television (New York: The Center for Applied Research in Education, Inc., 1965), p. 8.

The first educational television station KUHT in Houston, Texas, began operations on May 25, 1953.[1] Since then educational television has grown almost as rapidly as commercial television. In 1965, there were over ninety educational television stations on the air and more than 1000 closed-circuit installations in schools and colleges throughout the country.[2]

The Midwest Program on Airborne Television Instruction represents one of the latest and most dramatic ventures into the educational television field. This venture is designed to bring instructional programs, in various subject areas, to public school and college students in an area of the Midwest, embracing parts of six states ... Wisconsin, Michigan, Ohio, Illinois, Indiana, and Kentucky. Covered by the "umbrella" of the airplanes signal are such cities as Detroit, Milwaukee, Toledo, Lansing, Cleveland, Columbus, Dayton, Cincinnati, South Bend, Fort Wayne, Indianapolis, Evansville, Chicago, Peoria, Louisville, and Lexington.

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[1]John C. Schwarzwalder, "The Story of KUHT: Part One," Educational Television News (February, 1954), p. 3.

[2]George N. Gordon, op. cit., pp. 13-14.

The potential "audience" has been estimated at five million school and college students in 13,000 schools and colleges of the region. To date, schools with an enrollment of some 500,000 students have indicated a desire to participate in the project.[1]

Today, practically every course in the school and college curriculum, from first grade arithmetic to college zoology, is being taught somewhere over television.[2]

According to a study made by the Fund for the Advancement of Education, the following estimates can safely be made:

1. At least 3,000,000 students in 7,500 elementary and secondary schools throughout the nation are receiving part of their daily instruction by television.

2. Perhaps as many additional students are receiving televised "enrichment" programs, which are not considered as part of the regular curriculum but which, nevertheless, are regarded by teachers as a valuable supplement to daily lessons.

---

[1]Smith, op. cit., p. 10.

[2]The Ford Foundation, Teaching by Television p. 4.

3. Approximately 250 colleges and universities are offering credit courses on television to about 250,000 students. In addition, 300 colleges and universities are offering credit courses taught on "Continental Classroom", a nation-wide program, broadcast daily over the National Broadcasting Company network.[1]

Since 1958, the federal government has played an increasingly larger role in the area of educational television. Through the Educational Media Branch of the United States Office of Education, they have for some time, issued publications and conducted small research projects of value to educational broadcasters. The United States Office of Education also administers Title VII of the National Defense Education Act of 1958. Although this Act is concerned mainly with research into the effects and effectiveness of open and closed educational television, it has also provided the stimulus for a number of promising applications of educational television in the schools.[2]

ATTITUDES OF STUDENTS AND TEACHERS

Recognizing the importance of attitude in the learning

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[1] Ibid., Preface.

[2] George N. Gordon, Educational Television (New York: The Center for Applied Research in Education, Inc., 1965).

process, several investigators have measured and/or compared the attitudes of students and teachers toward educational television.[1,2,3,4,5]

Attitudes are formulated at an early age. In a study of forty kindergarten and twenty-two nursery school children's reactions to weekly television programs for children, Evans found that the "most noticeable affect on these children was apparent in the development of their vocabulary. It may be good or bad depending on the quality of the program."[6] She summarizes by stating that education-

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[1]Harvey Zorbaugh, "Analysis of Responses of College Educators to Televised Instruction," (1959), Mimeographed.

[2]Cyril R. Mill, "Attitudes Affect Pupils' Learning," Educational Leadership, Vol. 17, No. 4 (January, 1960).

[3]Washington County Board of Education, Closed-Circuit Television A Report Prepared by the Staff of the Washington County Board of Education (Hagerstown: The Board of Education, 1959).

[4]Hope L. Klapper, Closed-Circuit Television as a Medium of Instruction at New York University 1956-1957 (New York: New York University, 1958).

[5]Samuel L. Becker, James N. Murray, Harold R. Bechtoldt, Teaching by the Discussion Method (Iowa City: State University of Iowa, 1958).

[6]Clara Evans, "Television for the Preschool Child," Elementary English (December, 1955), p. 541.

al television can be an important educational tool when properly administered.

Carpenter and Greenhill[1] reported the findings of six Pennsylvania State University experiments. They found that responses toward television varied rather widely from course to course. They concluded that characteristics of students and instructors, interests in course content, level of difficulty, methods used, and other factors influenced opinions.

In a report of their four-year project Miami University reported the evaluation of students' attitudes toward instructional television. The results of their study indicate that "students in most courses preferred small classes both to large classes and to TV classes."[2]

Holmes, in 1959, analyzed and correlated available and pertinent data concerning instructional television. Of the fifteen related studies of students' attitudes toward the

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[1]C. R. Carpenter and L. P. Greenhill, An Investigation of Closed-Circuit Television for Teaching University Courses (University Park: Pennsylvania State University, 1958).

[2]Final Report of the Experimental Study in Instructional Procedures (Oxford, Ohio: Miami University, 1960).

content, he found that changes took place in a positive direction. Students who had instructional television experiences tended to evidence more favorable attitudes than students who had not had these experiences.[1]

Bakal, after analyzing the Hagerstown project, reported that differences in attitudes existed between elementary and secondary students. The secondary students were more critical of "the delivery and mannerisms of some television teachers, the method of presentation of certain individual lessons, and the use of some visual aids."[2]

Hope Klapper concluded from her data, "Students do not need personal student-teacher contact in order to feel favorably disposed toward or, indeed, enthusiastic about televised instruction."[3]

Meierhenry conducted a study to determine whether instructional television received in the home was as effective as televised instruction in the classroom. His data indicated that, "... the home group was more enthusiastic about television instruction and (the students) did

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[1]Presley D. Holmes, Jr., "Television Research in the Teaching-Learning Process," (Unpublished Ph.D. dissertation, Wayne State University, 1959).

[2]Carl Bakal, "The Schools of Tomorrow," The Saturday Review (August 24, 1957), p. 36.

[3]Hope L. Klapper, op. cit., p. 56.

not miss the instructor-student relationship."[1]

In Detroit, the Hutchins Junior High School Workshop Committee administered an interest questionnaire to all 9A pupils in both television and non-television classes. Results were summarized as follows:

1. Fifty per cent of the total group stated they would like to be in a television class in grade 10B.

2. Nearly a third (31.6 per cent) of the television pupils would not like to have a television class next semester, while more than half (56.5 per cent) of the non-television pupils would not like to have a television class next semester.

3. Of the television pupils, 53 per cent stated they would like to take world history by television next semester whereas only 23.7 per cent of the non-television pupils did so.[2]

The Atlanta Public Schools conducted a study on the attitudes of their ninth-graders in general science classes and twelfth-graders in physics classes. Their study indicated that ninth-graders favored the television classes

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[1]W. E. Meierhenry, A Study of Teaching by Television Under Two Conditions (Lincoln, Nebraska: The University of Nebraska, 1955).

[2]"A Study of Techniques Used in Evaluating Television Classes," Hutchins Junior High School, Detroit Public Schools, Detroit, Michigan, p. 5.

while the twelfth-graders had conflicting opinions.[1]

Cincinnati schools conducted a similar study to determine the attitudes held by students in their biology classes. Their data indicated that students favored conventional classroom instruction as opposed to educational television lessons.[2]

Numerous other findings regarding student acceptance of televised instruction are also conflicting. Naval reservists at the Special Devices Center rated television instruction highly,[3] as did students at Michigan State University.[4] However, studies conducted at Pennsylvania State University[5] and in the St. Louis Public Schools,[6] reported that students evidenced negative feelings regard-

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[1] Fund for the Advancement of Education, The National Program in the Use of Television in the Public Schools A Report on the National Workshop at Chapel Hill, North Carolina (New York: Fund for the Advancement of Education, September, 1959), p. 35.

[2] Ibid., p. 39.

[3] R. T. Rock, J. S. Duva, and J. E. Murray, The Comparative Effectiveness of T.V. Instruction in Training Naval Air Reservists Technical Reports SD C 476-02-s2 (Port Washington, Long Island, New York: Special Devices Center, United States Navy, 1951).

[4] Harry W. Sundwall, "An Experiment with Closed-Circuit Television in Educational Psychology," College of Education Quarterly (East Lansing: Michigan State University, II, 1956), pp. 10-13.

[5] Carpenter and Greenhill, op. cit., p. 54.

[6] Earl G. Herminghaus, An Investigation of Television Teaching (St. Louis: St. Louis Public Schools, 1957).

ing educational television even though their achievement was equal to or better than the conventional situation.

Generally speaking, the literature appears to indicate that teachers who teach on television come to like it. However, those teachers who do not teach on television tend to be "suspicious and resistant" regarding the medium.[1]

In the Hagerstown experiments, teachers were asked whether they preferred to teach their classes with or without the aid of television; eighty-three per cent responded affirmatively.[2]

In Detroit, sixty-eight per cent reported their attitudes toward television had become more favorable since they had some experience using it in the classroom.[3]

Most teacher opposition to educational television is centered in the colleges.[4] Studies conducted at University of Oregon , and the State University of Iowa, indicated that

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[1]Hagerstown Board of Education, Closed-Circuit Television Teaching in Washington County 1958-1959 (Hagerstown, Maryland: Board of Education, 1959).

[2]Ibid.

[3]Detroit Public Schools, The Television Teaching Project Report for the Year 1958-1959 (Detroit: Board of Education, 1959).

[4]Wilbur Schramm, "Learning from Instructional Television," Review of Educational Research, 32 (April, 1962), pp. 156-167.

professors were unfavorable regarding any extensive use of educational television.[1,2]

Additional studies reflect the same conflicting results regarding student-teacher attitudes and their relationship to educational television.[3,4,5,6,7,8]

LEARNING FROM TELEVISION

Comprehensive reviews of experiments comparing the academic success of conventionally taught students

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[1]G. Starlin and J. E. Lollas, Inter-Institutional Teaching by Television in the Oregon State System of Higher Education (Eugene, Oregon: Oregon System of Higher Education, 1960).

[2]E. B. Stuit, "Some Faculty Reactions to Teaching on Closed-Circuit Television," Journal of Higher Education, 18 (1957), pp. 339-343.

[3]Canadian Broadcasting Corporation, "Television in the Classroom," The Corporation (1954).

[4]Carl F. Hasen, Report on an Experiment in Teaching Elementary School Music by Television in the Washington Public Schools (Washington,D.C.: Board of Education, 1952).

[5]R. E. Helmick, "Television in High Schools," American School Board Journal, 123 (December 21-22, 1951).

[6]Stanley Degraff, Educational Television Programs and Evaluations 1954-1955 (San Diego: Board of Education,1955).

[7]Edgar Dale, "The Effects of Television on Teachers and Learners," (Paper delivered at Turkey Run Conference, National Education Association, 1962), pp. 1-24. Mimeograph.

[8]Paul Blanchard, Jr., "Audience Survey #1 -- Television Seminar Project," NAEB Factsheet IV, No. 34.

to television taught students by Carpenter,[1] Finn,[2] Holmes,[3] Kumata,[4] and Schramm[5] indicated that in some cases the students may learn more, in some cases less, but the overall conclusion was "no significant difference" between the two methods. These writers reviewed more than 1000 studies in educational television before arriving at their conclusions.

Studies conducted at the elementary and secondary school levels in the subject areas of music,[6] slide rule instruction,[7] English composition,[8] general science,[9] second

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[1] C. R. Carpenter, "Approaches to Promising Areas of Research in the Field of Instructional Television," New Teaching Aids for the American Classroom (Stanford: Institute for Communication Research, 1960), pp. 73-94.

[2] J. D. Finn, "Television and Education: A Review of Research," Audio-Visual Communication Review, I, (1953), pp. 106-126.

[3] Holmes, op. cit.

[4] Hideya Kumata, "A Decade of Teaching by Television," The Impact of Educational Television, ed. Wilbur Schramm (Urbana: University Illinois Press, 1960), pp. 176-192.

[5] Wilbur Schramm, op. cit., pp. 156-167.

[6] Carl F. Hasen, op. cit.

[7] George R. Anderson and Abram W. VanderMeer, "A Comparative Study of the Effectiveness of Lessons on the Slide Rule Presented Via Television and in Person," Mathematics Teacher, 47 (1954), pp. 323-327.

[8] Earl G. Herminghaus, op. cit.

[9] Ibid.

grade spelling,[1] physics,[2] arithmetic,[3] and biology[4] reported television instruction to be as effective as conventional classroom instruction in the area of student achievement.

Similar studies conducted at the college and university level by Macomber, Siegel, et al,[5] McKeachie,[6] Husband,[7] Sundwall,[8] and Evans, et al,[9] reported no significant difference in the area of student achievement between instructional television and conventional methods.

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[1] Ibid.

[2] M. D. Engelhart, E. C. Schwachtgen, and Mary M. Nee, "Chicago Public Schools Television Instruction Experiment in High School Physics," American Journal of Physics, 26 (1958), pp. 347-349.

[3] Wilbur Schramm, op. cit.

[4] J. N. Jacobs and J. Ballenbacher, "Experimental Study in Teaching High School Biology by Television in the Cincinnati Public Schools," Science Education, 43 (1959), pp. 399-405.

[5] F. G. Macomber, L. Siegel, et al, Experimental Study in Instructional Procedures: Report Number Two (Oxford, Ohio: Miami University, October, 1957).

[6] W. J. McKeachie, "Teaching Psychology on Television," The American Psychologist, VII (1952), pp. 503-506.

[7] Richard W. Husband, "Television Versus Classroom for Learning General Psychology," The American Psychologist, XIX (1954), pp. 181-183.

[8] Harry Sundwall, op. cit., pp. 10-13.

[9] Richard I. Evans, H. Burr Roney, and Walter J. McAdams, "An Evaluation of the Effectiveness of Instruction and Audience Reaction to Programming on an Educational Television Station," Journal of Applied Psychology, XXXIX (1955), pp. 277-279.

Blanchard, reporting the results of an audience survey, showed that eighty per cent of the students believed they were getting at least as much from the television courses as they would have by taking the same lessons on campus. Sixty-three per cent of the students indicated that they felt that they were being reached as individuals by the television instructor.[1]

A study conducted in 1950 by Xavier University to determine the general effect of television on school achievement indicated that television was not a factor in whether or not children learned in school.

> Whether or not children learn in school is not affected one way or the other by whether or not they have a television set at home. Nor is their learning affected very much by the way parents control televiewing. These answers are clearly indicated by the Xavier University research into the effect of television.[2]

Tarbet, in a study designed to determine the effects of television on school achievement reported that, "students who had television sets in their homes did better on the tests on current events than the students who did not have television sets in their homes.[3]

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[1]Paul Blanchard, op. cit.

[2]"Of Children and Television," Report of research conducted by Xavier University, Graduate Division, (Cincinnati: Xavier University, 1950).

[3]Donald Tarbet, "TV Watching: Help or Hindrance," The Clearing House, Vol. 27, No. 8 (April, 1953), p.489.

In a study conducted by the U. S. Army in 1955, it was reported that television was:

> Generally more effective than regular instruction. Particularly effective for lower aptitude individuals. Remembered at least as well as regular instruction by trainees of all I.Q. ratings, and even better than regular instruction by those with low I.Q.s.[1]

It was reported in a study conducted at the University of Houston to determine the effectiveness of an elementary psychology course and an elementary biology course on KUHT-TV, as compared to the same courses taught in the conventional manner, that no significant differences were found in the average scores of any of the course groups. It was concluded that courses taught by television are as effective as courses taught in the conventional manner.[2]

Another study, conducted at Fordham University on learning and retention, resulted in the following report.

> ... (1) All grades of reservists made statistically significant gains on the information tests after viewing the telecasts; (2) reservists remembered what they learned on TV, officers retaining 85 percent and enlisted men 65 percent when they were retested four and six weeks later; ...(5) reservists liked to be taught by TV, more than half preferring it to conventional classroom instruction and saying it was more instructive than the average training film.[3]

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[1]"Army Test Proves Television is an Excellent Teaching Tool," Educational Television News (March, 1955), pp. 1-2.

[2]Richard L. Evans, et al, op. cit.

[3]W. Allen, "Training by Television: A Study in Learning and Retention," Audio-Visual Communication Review, Vol.I, No. 1 (Winter, 1953), p. 63.

Summarizing research to date, Schramm states, that in the area of learning from television, we find that in sixty-five per cent of the studies there is "no significant difference", in twenty-one per cent of the studies, students learned "significantly more", and in fourteen per cent of the studies, students learned "significantly less" in television classes as compared to conventional classrooms.[1]

ISSUES AND PROBLEMS

Educational television, like any mushrooming innovation in public education, has certainly encountered its share of critics, supporters, and problems. Educators and laymen alike, continue to debate its advantages and shortcomings. H. K. Newburn, formerly President, Educational Television and Radio Center, Ann Arbor, Michigan, identifies what he considers to be the seven major problems facing educational television.

1. Just what do we mean by the term educational television?

2. What are the major objectives to be sought through education by television?

3. What can be done as program materials are selected and produced locally or nationally to make certain that such presentations will meet proper qualitative standards?

4. What types of audience research are necessary to determine whether or not the objectives of education by television are being achieved?

5. How can we bring together the scholar the writer-producer, the engineer, the camera man, the educator to the end that the experiences presented by television will be

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[1] Educational Television, The Next Ten Years, op. cit., p. 53.

educationally sound, technically superior, artistically satisfying, and at the same time productive of the intended outcomes?

6. What can be done to encourage an intelligently experimental attitude on the part of all concerned in an effort to determine the kinds of educational experience which best lend themselves to the medium, those types of presentations which are most effective, and those formats which are most conducive to proper audience motivation?

7. What can be done to insure the necessary continuing financial support for the enterprise without which it cannot hope to achieve its mission?[1]

The advocates of educational television, many who supported and nurtured it through times of criticism and doubt, are sold on its ultimate success. They contend, that as a medium of instruction, television has several unique advantages such as the following:

1. It can vastly extend the reach of the nation's better teachers particularly in areas where good teachers are presently scarce. One striking example of this took place in "Continental Classroom" during a series of classes in physics and chemistry. Though the classes had adequate instruction, fourteen Nobel Prize winners were brought before the cameras to supplement certain aspects of the courses.

2. Television as a medium of instruction can bring to students educational experiences far beyond the potential of conventional teaching in the classroom. Television overcomes time and cost limitations of bringing a thousand and one artifacts, special maps, original documents, photographs, sketches and expensive science equipment into the classroom. For example, history students in the Philadelphia Public Schools recently had a chance to see the actual wampum belt presented to William Penn by the Indians. In Alabama, thousands of science students were taken by television on a tour of the Army's Redstone Arsenal, one of the nation's most important missile centers.

3. Television's ability to convey reality, to give the

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[1] H.K. Newburn, "Recent Developments in Educational Television," Current Issues in Higher Education 1954, ed. G.Smith (Washington,D.C.: Higher Education, 1954), p.141.

viewer a "you are there" feeling, also contributes to its usefulness as an educational tool. An example of this happened when fifth-graders in the Pittsburg Public Schools had an opportunity to hear and see Robert Frost read some of his poems over television.

4. Television's intimacy has the ability to make you feel the television instructor is talking "just to you."

5. Television's dramatic power and consequent ability to stimulate and motivate the learner.

6. Its ability to reach large numbers of individuals instantly.

7. Its immediacy — a minimum of delay is required in dissemination of information.

8. Its ability to focus the attention of the viewer on the subject at hand.

9. Its ability to provide close-ups. It becomes an excellent demonstration magnifier. It really provides every student with a front row seat.

10. Its ability to transmit sound and picture simultaneously as they are created.

11. Its mobility. It can move in for a closer look, swing around for a better look, and back away for a broader look.

12. Its visual characteristics and requirements make it possible and necessary to use a wide variety of visual teaching materials and resources in any effective presentation.

13. It requires and demands well organized presentations.

On the other side of the coin educational television's critics feel that its shortcomings and limitations leave much to be desired. Their criticisms and cautious attitude appear throughout the literature in the following statements.

1. Its rate is constant. It cannot be speeded up for the rapid learner and slowed down for the slower. This tends to make it increasingly difficult in providing for individual differences.

2. It is limited to a single performance, unless it is

recorded for reshowing later or unless the original performance is duplicated.

3. Its initial cost is high compared to most instructional tools.

4. The size of its screen is small, making viewing difficult for large groups unless multiple receivers are provided.

5. It is primarily a one-way communication channel, transmitting its message in one direction, from one point to another.

6. It cannot take into account readiness to learn. Viewers may not be ready for a specific experience.

7. It is difficult for it to adapt to needs and interests of specific groups of learners.

8. It is difficult to overcome rigid time scheduling of programs for in school use.

9. Breeds too much standardization and uniformity of instruction and not enough creativity and individuality.

10. Tends to encourage too much dependence on the television teacher by the classroom teacher, robbing him of individual initiative and control of his own classroom.

11. Television has limited feedback qualities. Interaction between the television teacher and the student is difficult to achieve.

12. There is a tendency to focus on the teacher rather than on the learner.

13. There is a loss of personal contact between the students and the teacher.

14. It is difficult to assess the reactions of the audience through observation while the program progresses.

15. Television makes for limited participation by the students during the lesson. There is a tendency to develop watchers rather than participators.

16. Television deprives the classroom teacher of freedom in selecting experiences. This is especially true when students and teachers are required to view a program.[1]

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[1] Carl Bakal, "The Schools of Tomorrow", Saturday Review (August 24, 1957), p. 9.

Individual school systems participating in the National Program in the Use of Television in the Public Schools, indicated that they were continuing to encounter the following problems as they entered their third year of programming.[1]

1. The problem of inadequate facilities. This was the major problem faced by most of the participating school systems. Auditoriums and cafeterias were not designed for use as classrooms, and they were far from ideal when they were used for the large television classes.

2. The problem of finding, recruiting, and training studio teachers. Generally speaking, good classroom teachers make good television teachers, but there are special techniques any teacher must master in using television as a medium of instruction.

3. The problem of training teachers in the techniques of handling large classes, particularly in the techniques of eliciting student participation. Discipline has not been a problem in the large classes, but student participation in a large class must of necessity take different forms than is customary in a small class.

4. Students too, need to learn the techniques of learning in a large-class situation. Here again, much remains to be learned about the nature of student participation and the various forms it can take.

5. The problem of integrating the telecast part of the lesson and the classroom "follow-up" into a unified, meaningful whole.

6. The problem of reorganizing the curriculum to take maximum advantage of television as a teaching tool. On the basis of the first two years' experience, the participating school systems are convinced that the new medium makes possible a much broader, deeper, and richer curriculum than is possible under conventional methods of instruction. The problem is to develop a curriculum that fully utilizes the potentialities of the new medium.

7. The problem of adapting the new technique of teaching by television to the varying abilities of students. This also is a problem in conventional instruction, but it becomes increasingly important when a television teacher reaches several thousand students in widely scattered

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[1] Teaching by Television, op. cit., pp. 64-66.

classrooms.

8. The problems of 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. The latter aspect of the problem has important implications for the problem of integrating the telecast and the classroom "follow-up" into a meaningful whole.

9. Finally, there is the never-ending problem of quality. Television is essentially neutral as a conveyor of ideas, concepts, and information. The quality of the output can only be as good as the quality of the input. A mediocre teacher on television communicates her mediocrity to a much wider audience than a mediocre teacher in a classroom. Generally speaking, the quality of the television teaching in the National Program has been excellent, but the studio teachers themselves are constantly working to make it even better.

It appears quite clear, in light of the information presented, that those who support educational television will need to solve many of the problems presently encountered by the medium if they expect its acceptance to grow.

In speculating on the problems facing educational television Siepmann suggests that "the condition of further effective advances in this field is caution — great deliberation, more careful and extensive testing and, above all, concern with standards."[1]

FUTURE OF EDUCATIONAL TELEVISION

The literature continues to reflect mixed feelings

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[1]Charles A. Siepmann, Television and Education in the United States (Paris, France: United Nations Educational, Scientific and Cultural Organization, 1952), p. 115.

regarding the future impact of educational television.[1,2,3,4] Although this medium continues to grow, its rate of growth has decreased substantially in the past few years.[5]

Henry identifies the future of educational television in the following way:

> If we keep educational broadcasting educational, the road ahead is clear. We shall continue to be good neighbors with commercial stations, and contribute many programs, some of great educational strength, some of general intellectual entertainment, some of public relations value. But the mission of educational broadcasting can be fulfilled only when the station is an arm of the educational establishment, a part of the regular financial, instructional, and administrative structure. This way the quality will not be diluted by irrelevant concerns nor the objectives distorted by non-educational influences. With this approach, the cost of a station will not seem impossible but only as the equivalent of an elementary school or a wing of a small college building on the campus, and the operation expense likewise comparable.[6]

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[1]Mark Garbarini, "What MPATI Doesn't Have," Michigan Education Journal (April 1, 1964), pp. 9-11.

[2]George L. Arms, "Educational-Television: The Future," (Houston: University of Houston, 1960), Unpublished mimeographed report.

[3]"Instructional TV Cannot Do the Job Alone," Michigan Education Journal (December 1, 1960), p. 313.

[4]Constance Warren, "TV Can Solve Our Educational Problem," The New York Times Magazine, Section 6 (December 19, 1954), pp. 16-21.

[5]Hoxley Cooley, "Schoolroom on the Air, Educational TV Progresses," The Nation (May 28, 1955), p. 461.

[6]David D. Henry, op. cit., p. 321.

A special conference, sponsored by the Educational Television and Radio Center at Ann Arbor, Michigan, in 1954, formulated a series of questions which they felt must be answered if educational television is to realize its full potential in the coming years. These questions were:

1. What is the relationship between the perceived dependability of the content of the program and its acceptance or rejection or the amount learned by the viewers?

2. What are the cues, signs, or symbols by which the real and the dependable are recognized and perceived?

3. What are the relations of the audio and visual components of television?

4. For what kinds of learning can television be effectively used? What are its strengths and weaknesses in developing understanding, teaching skills, modifying attitudes, or changing behavior?

5. How can controversial issues best be presented?

6. What is the relation of motivation to learning from television?

7. What are the learning effects of a long-term program series?

8. What is the effect of the social context in which educational television is viewed?

9. How can educational television contribute to community education?

10. How can educational television best be used in the schools?

11. Can commercial sponsorship be used without interfering with objectives of educational television?

12. What makes an effective teacher and for effective teaching by educational television?

13. How much difference does technical quality make in the learning process of educational television?

14. How can we improve the methods of evaluating the

attainment of educational television goals?[1]

In 1959, the Subcommittee on Television of the North Central Association of Colleges and Secondary Schools met in Chicago for the purpose of considering recommendations regarding the future of educational television. They emphasized the following points:

1. Educational institutions of small enrollment should analyze carefully the possibility of supplementing their curricula by televised instruction from other institutions and educational television installations.

2. Educational institutions of large enrollment should analyze carefully the ways in which television may be used to make their educational activities more efficient.

3. Cooperative study of how best to use television should be undertaken by all school faculties.

4. In using television a conscious effort should be made to improve articulation and coordination between grade levels and among institutions.

5. Before experimental programs are initiated, teachers and administrators should determine their objectives in using television, study the research evidence in the field, and create a suitable attitudinal climate.

6. Current sources of reliable information and counsel in regard to educational television should be used to avoid unnecessary duplication of experimental efforts.

7. Teacher-training institutions should orient future teachers to the use of educational television.

8. State departments of public instruction and state institutions of higher education should assume special responsibilities in helping educators and educational institutions become aware of the values of television as an educational medium.

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[1]"Research Needs in Educational Television," (Ann Arbor: Educational Television and Radio Center, 1954).

9. The United States Office of Education and national educational organizations should develop an improved system of coordinating research activity and of identifying areas for research in the educational uses of television, in order to avoid unnecessary duplications and to insure wide and prompt dissemination of research findings.

10. Educators should make the final decisions regarding the educational applications of television, in full recognition of the fact that the full cooperation and assistance of commercial and manufacturing interests are important to the continued growth of educational television.

11. Recognizing that foundations have made a significant contribution to experimental and established educational television activities, educational institutions should clearly foresee their own ability to sustain the continued use of television in education.[1]

[1] The Uses of Television in Education (Washington, D.C.: The Subcommittee on Television of the Commission on Research and Service of the North Central Association of Colleges and Secondary Schools, 1961), pp. 22-23.

CHAPTER III

ANALYSIS OF THE DATA

Four instruments were used in this study to collect data pertinent to the hypotheses stated in Chapter I. The data will be reported in two parts; (1) all teacher data will be reported first and (2) all student data will be reported second.

PROCEDURE

One hundred eighty-three fourth, fifth, and sixth grade teachers in Detroit metropolitan area elementary schools, presently utilizing educational television as an instructional medium in their classrooms, were administered the Educational Television Teacher Attitude Inventory and the Educational Television Teacher Experience Questionnaire. Data collected from the ETTAI were utilized to determine ten teachers with favorable attitudes toward educational television and ten teachers with unfavorable attitudes toward educational television. In addition, these data were used

to provide information and findings relative to the hypotheses stated in Chapter I concerning teachers who use educational television as an instructional medium in their classrooms.

Students of the ten teachers with favorable attitudes and the ten teachers with unfavorable attitudes were administered the Educational Television Attitude Scale, Elementary, Grades 4-6, and the Educational Television Student Experience Questionnaire. Data from these instruments were used to provide information and findings relative to the hypotheses stated in Chapter I concerning students who receive instruction by educational television.

Scoring the ETTAI and the ETAS

Items of the type found in Hardaway's instruments, the ETTAI and the ETAS, are scored on a five point scale. The possible responses are; "strongly agree", "agree", "uncertain or undecided", "disagree", and "strongly disagree". If "strongly disagree" is the correct response, "strongly disagree" is scored five, "disagree" is scored four, "uncertain or undecided" is scored three, "agree" is scored two, and "strongly agree" is scored one. If "strongly agree" is the correct response, "strongly agree" is scored five, "agree" is scored four, "uncertain or undecided" is scored

three, "disagree" is scored two, and "strongly disagree" is scored one.

The highest and lowest possible scores on the ETTAI are 210 and 42 respectively. The highest and lowest scores on the ETAS are 130 and 26 respectively. In this study, teachers designated as having favorable attitudes toward educational television needed a score of 148 or higher and teachers designated as having unfavorable attitudes toward educational television needed scores of 120 or lower. These scores were arrived at by listing all teachers' scores in a frequency table and applying the quartile deviation statistic to them. Scores contained in the third quartile (148+) were considered favorable scores and scores contained in the first quartile (120-) were considered unfavorable scores, and scores between 120 and 148 were considered neutral scores. The same procedure was followed in categorizing the attitudinal scores of the students. Due to the fewer number of student questions, twenty-six on the students' scale as opposed to forty-two on the teachers' scale, a factor of 1.615 was applied to student scores to give their scores the same weight as the teachers' scores, i.e., a student's score of 100 would be equal to 161.9 on the teachers' scale.

Coding the Data

It had been determined at the outset of this study that electronic equipment would be used to facilitate the processing of the data. The availability of the computer laboratory at the University of Michigan, in addition to the speed and accuracy of tabulation characteristic of this computational instrument, prompted this decision.

The procedures employed in the mechanical processing of the data comprise three stages: (1) the coding of data so that all data from the instruments could be conveyed to IBM cards; (2) the application of the coding system to the formulation of the data cards; (3) the assigning of a code number to each datum so that each participant in the study could be identified.

Processing of the Data

The initial computational phase yielded frequency and percentagized tables of the interrelationships of teacher and student attitudes and their personal, professional, and experiential backgrounds.

Once the procurement of the tabular data was completed, it was necessary to test the statistical significance of each control variable in relationship to the various personal, professional, and experiential factors of the

teachers and students. It was determined, in consultation with Dr. M. Clemens Johnson, statistician, School of Education, University of Michigan that the application of the chi-square statistic would prove most desirable for this purpose.

Statistical Treatment of the Data

The chi-square test represents a useful method of comparing experimentally obtained results with those to be expected theoretically on some hypothesis. The equation for chi-square (X^2) is stated as follows:

$$X^2 = \sum \left[\frac{(f_o - f_e)^2}{f_e} \right]$$

in which f_o = frequency of occurence of observed or determined facts and f_e = expected frequency of occurence on some hypothesis.

The difference between observed and expected frequencies are squared and divided by the expected number in each case, and the sum of these quotients is chi-square (X^2). The more closely the observed results approximate to the expected, the smaller the chi-square and the closer the agreement between observed data and the hypothesis being tested. Contrariwise, the larger the chi-square the greater the probability of a real divergence of experimentally observed from expected results. To evaluate chi-square we consult Fisher's X^2

Table[1] with the computed value of chi-square and the appropriate number of degrees of freedom. The number of degrees of freedom (df) equals (r-1)(c-1) in which r is the number of rows and c the number of columns in which the data are tabulated. From Fisher's X^2 Table we read P, the probability to determine whether the obtained chi-square value is significant.

In determining the standard of significance for the possible acceptance of hypotheses in this study, the writer selected the five percent level as significant.

PRESENTATION OF THE DATA

The tabulated findings for all variables and their statistical significance will be presented and described in the remainder of this chapter.

Test of Hypotheses

Hypothesis IA1: Hypothesis IA1 states that male teachers will be more likely to be favorably inclined towards educational television.

Table 1 presents the distribution of subjects according

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[1] Henry E. Garrett, Statistics in Psychology and Education (New York: David McKay Company, Inc., 1965), p. 450.

to sex. Of the 183 teachers in the study, forty-five, or 24.59 percent, were males and 138, or 75.41 percent, were females. Nine male teachers evidenced favorable attitudes toward educational television, twenty-five male teachers had neutral attitudes toward educational television, and eleven male teachers had unfavorable attitudes toward educational television. As one can readily determine, there is little difference in the number of male teachers who had favorable attitudes toward educational television as compared with the number of male teachers who had unfavorable attitudes toward educational television. The data indicate substantially the same condition with respect to the female teachers. Of the 138 female teachers, thirty-one had favorable attitudes toward educational television whereas thirty-seven had unfavorable attitudes toward educational television.

Applying the chi-square statistic to the data contained in Table 1 we arrive at a chi-square value of .319288. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IA1 is not supported.

Hypothesis IA2: Hypothesis IA2 states that younger

TABLE 1

SEX OF TEACHERS

Teacher Attitude	Male Number	Male Per Cent	Female Number	Female Per Cent	Totals Number	Totals Per Cent
Favorable	9	22.50	31	77.50	40	100.00
Neutral	25	26.32	70	73.68	95	100.00
Unfavorable	11	22.92	37	77.08	48	100.00
Totals	45	24.59	138	75.41	183	100.00

Chi-square = .319288
DF = 2
Chi-square is not significant at the five percent level.

teachers will be more likely to be favorably inclined towards educational television.

Tables 2 and 3 present the distribution of subjects according to age. As these data indicate there is no pattern in evidence that would indicate a relationship between age of teacher and favorable or unfavorable attitudes toward educational television. Of the forty teachers who evidenced favorable attitudes toward educational television only two of the twelve teachers under twenty-five years of age had favorable attitudes toward educational television. Of the forty-eight teachers who evidenced unfavorable

attitudes toward educational television only two of the twelve teachers under twenty-five years of age had unfavorable attitudes toward educational television. A similar pattern exists between teachers with favorable attitudes toward educational television and teachers with unfavorable attitudes toward educational television in the other age categories.

Applying the chi-square statistic to the data contained in Tables 2 and 3 we arrive at a chi-square value of 8.512657. Consulting Fisher's X^2 Table it is determined that, at eight degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IA2 is not supported.

TABLE 2

AGE OF TEACHERS
(Frequency)

Teacher Attitude	Under 25	26-35	36-45	Over 45	No Response	Totals
Favorable	2	7	10	12	9	40
Neutral	8	27	17	31	12	95
Unfavorable	2	9	15	12	10	48
Totals	12	43	42	55	31	183

TABLE 3

AGE OF TEACHERS

(Percent)

Teacher Attitude	Under 25	26-35	36-45	Over 45	No Response	Totals
Favorable	5.00	17.50	25.00	30.00	22.50	100.00
Neutral	8.42	28.42	17.89	32.63	12.64	100.00
Unfavorable	4.17	18.75	31.25	25.00	20.83	100.00
Totals	6.56	23.50	22.95	30.05	16.94	100.00

Chi-square = 8.512657
DF = 8
Chi-square is not significant at the five percent level.

Hypothesis IA3: Hypothesis IA3 states that married teachers will be more likely to be favorably inclined towards educational television.

Tables 4 and 5 present the distribution of subjects according to marital status. These data indicate that of the forty teachers with favorable attitudes toward educational television twenty-eight, or 70 percent, were married. However, of the forty-eight teachers with unfavorable attitudes toward educational television thirty-five, or 72.92 percent, were also married. The data in Tables 4 and

5 also show that there is a similar pattern between single teachers and their attitudes toward educational television. Of the forty teachers with favorable attitudes toward educational television nine, or 22.50 percent, were single. When this is compared with the proportion of single teachers with unfavorable attitudes toward educational television, twelve, or 25 percent, of the teachers in this category, it is apparent that no relationship exists between the marital status of teachers and their attitudes toward educational television.

Applying the chi-square statistic to these data in Tables 4 and 5, we arrive at a chi-square value of 1.918546. Consulting Fisher's X^2 Table we find that, at four degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IA3 is not supported.

Hypothesis IA4: Hypothesis IA4 states that teachers with children will be more likely to be favorably inclined towards educational television.

Table 6 presents the distribution of subjects relative to whether or not they have children. These data indicate that of the 183 teachers in this study, 150, or 81.97 percent, had children of their own. However, a closer

TABLE 4

MARITAL STATUS OF TEACHERS

(Frequency)

Teacher Attitude	Married	Single	Other	Totals
Favorable	28	9	3	40
Neutral	68	20	7	95
Unfavorable	35	12	1	48
Totals	131	41	11	183

TABLE 5

MARITAL STATUS OF TEACHERS

(Percent)

Teacher Attitude	Married	Single	Other	Totals
Favorable	70.00	22.50	7.50	100.00
Neutral	71.58	21.05	7.37	100.00
Unfavorable	72.92	25.00	2.08	100.00
Totals	71.58	22.40	6.02	100.00

Chi-square = 1.918546
DF = 4
Chi-square is not significant at the five percent level.

analysis of these data reveal that thirty-two of the 150 teachers with children had favorable attitudes toward educational television whereas forty-three of the 150 teachers with children had unfavorable attitudes toward educational television. The data appear to indicate a similar pattern concerning teachers without children and their attitudes toward educational television. On the basis of the data presented in Table 6 it is concluded that there is little relationship between a teacher's attitude toward educational television and having children of his own.

Applying the chi-square statistic to these data in Table 6 we arrive at a chi-square value of 6.824565. Consulting Fisher's X^2 Table it is determined that, at ten degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IA4 is not supported.

Hypothesis IA5: Hypothesis IA5 states that teachers favorably inclined towards educational television will spend more time at home watching television.

Tables 7 and 8 present the distribution of subjects according to the amount of time they spend at home each week watching television. These data indicate that six, or 15 percent, of the teachers with favorable attitudes toward

TABLE 6

NUMBER OF VIEWING TEACHERS' CHILDREN

Teacher Attitude	Teachers With Children		Teachers Without Children		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	32	80.00	8	20.00	40	100.00
Neutral	75	78.55	20	21.05	95	100.00
Unfavorable	43	89.58	5	10.42	48	100.00
Totals	150	81.97	33	18.03	183	100.00

Chi-square = 6.824565
DF = 10
Chi-square is not significant at the five percent level.

educational television spend more than fifteen hours each week watching television at home whereas only three, or 6.25 percent, of the teachers with unfavorable attitudes toward educational television spend more than fifteen hours each week watching television at home. These data also indicate that twenty-eight, or 58.33 percent, of the teachers with unfavorable attitudes toward educational television spend less than six hours each week watching television at home whereas only fifteen, or 37.50 percent, of the teachers with favorable attitudes toward educational television spend less than six hours each week watching television at home.

TABLE 7

HOME TELEVISION VIEWING BY TEACHERS

(Frequency)

Teacher Attitude	None	1-5 Hours Each Week	6-10 Hours Each Week	11-15 Hours Each Week	More Than 15 Hours Each Week	Totals
Favorable	3	12	14	5	6	40
Neutral	2	33	43	15	2	95
Unfavorable	1	27	10	7	3	48
Totals	6	72	67	27	11	183

TABLE 8

HOME TELEVISION VIEWING BY TEACHERS

(Percent)

Teacher Attitude	None	1-5 Hours Each Week	6-10 Hours Each Week	11-15 Hours Each Week	More Than 15 Hours Each Week	Totals
Favorable	7.50	30.00	35.00	12.50	15.00	100.00
Neutral	2.11	34.74	45.26	15.79	2.11	100.00
Unfavorable	2.08	56.25	20.83	14.58	6.25	100.00
Totals	3.28	39.34	36.61	14.75	6.02	100.00

Chi-square = 20.903909
DF = 8
Chi-square is significant at the one percent level.

An additional observation made regarding the data in Tables 7 and 8 is that 62.50 percent of the teachers with favorable attitudes toward educational television spend six hours or more at home each week watching television whereas only 41.66 percent of the teachers with unfavorable attitudes toward educational television spent more than six hours at home each week watching television.

Applying the chi-square statistic to these data in Tables 7 and 8 we arrive at a chi-square value of 20.903909. Consulting Fisher's X^2 Table it is determined that, at eight degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IA5 is supported

Hypothesis IA6: Hypothesis IA6 states that teachers who have participated in dramatics or related activities in high school, college, or in community groups will be more likely to be favorably inclined towards educational television.

Table 9 presents the distribution of subjects according to their experience in dramatics or related activities in high school, college, or community groups. These data indicate that sixteen, or 40 percent, of the forty teachers with favorable attitudes toward educational television had

dramatic or related experiences in high school, college, or community groups whereas thirty, or 62.50 percent, of the forty-eight teachers with unfavorable attitudes toward educational television had dramatic or related experiences in high school, college, or community groups. Although statistically there is no significant relationship between teachers having dramatic or related experiences and attitudes toward educational television, the data do indicate that more teachers with these kinds of experiences were unfavorable in their attitudes toward educational television.

Applying the chi-square statistic to these data in Table 9 we arrive at a chi-square value of 4.431253. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IA6 is not supported.

Hypothesis IA7: Hypothesis IA7 states that teachers will have favorable attitudes toward educational television as measured by the Educational Television Teacher Attitude Inventory.[1]

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[1]Hardaway, op. cit.

TABLE 9

DRAMATIC OR RELATED EXPERIENCE OF TEACHERS

Teacher Attitude	Teachers With Experience		Teachers Without Experience		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	16	40.00	24	60.00	40	100.00
Neutral	50	52.63	45	47.37	95	100.00
Unfavorable	30	62.50	18	37.50	48	100.00
Totals	96	52.46	87	47.54	183	100.00

Chi-square = 4.431253
DF = 2
Chi-square is not significant at the five percent level.

Table 10 indicates the attitudes of teachers as measured by the Educational Television Teacher Attitude Inventory. Of the 183 teachers included in this study forty, or 21.86 percent, measured favorable attitudes toward educational television, ninety, or 51.91 percent, measured neutral attitudes toward educational television, and forty-eight, or 26.23 percent, measured unfavorable attitudes toward educational television. As the data clearly demonstrate there is no indication that teachers in this study possess a preponderance of favorable attitudes toward educational television. On the basis of the data in Table 10 there is no relationship between teachers who utilize

educational television in their classrooms and their attitudes toward educational television.

Applying the chi-square statistic to these data in Table 10 we arrive at a chi-square value of 1.891936. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IA7 is not supported.

TABLE 10

TEACHERS' ATTITUDES TOWARD EDUCATIONAL TELEVISION

Teacher Attitude	Number of Teachers	Percent of Teachers
Favorable	40	21.86
Neutral	95	51.91
Unfavorable	48	26.23
Totals	183	100.00

Chi-square = 1.891936
DF = 2
Chi-square is not significant at the five percent level.

Hypothesis IB1: Hypothesis IB1 states that teachers having fewer years experience in the profession will be more likely to be favorably inclined towards educational

television.

Tables 11 and 12 present the distribution of subjects according to the number of years they have in the teaching profession. These data indicate that teachers' attitudes toward educational television are not related to the number of years they have spent in the teaching profession. Teachers with one to three years teaching experience are divided regarding their attitudes toward educational television. Of the twenty-one teachers with one to three years teaching experience, three evidenced favorable attitudes toward educational television and five evidenced unfavorable attitudes toward educational television. A similar pattern was evidenced by the teachers with more than nine years in the teaching profession. Of the 125 teachers with more than nine years teaching experience, thirty-one had favorable attitudes toward educational television and thirty-seven had unfavorable attitudes toward educational television.

Applying the chi-square statistic to these data in Tables 11 and 12 we arrive at a chi-square value 8.959729. Consulting Fisher's X^2 Table it is determined that, at six degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB1 is

not supported.

TABLE 11

PROFESSIONAL EXPERIENCE OF CLASSROOM TEACHERS

(Frequency)

Teacher Attitude	1-3 Years	4-6 Years	7-9 Years	More Than 9 Years	Totals
Favorable	3	2	4	31	40
Neutral	13	13	12	57	95
Unfavorable	5	1	5	37	48
Totals	21	16	21	125	183

TABLE 12

PROFESSIONAL EXPERIENCE OF CLASSROOM TEACHERS

(Percent)

Teacher Attitude	1-3 Years	4-6 Years	7-9 Years	More Than 9 Years	Totals
Favorable	7.50	5.00	10.00	77.50	100.00
Neutral	13.68	13.68	12.64	60.00	100.00
Unfavorable	10.42	2.08	10.42	77.08	100.00
Totals	11.48	8.74	11.48	68.30	100.00

Chi-square = 8.959729
DF = 6
Chi-square is not significant at the five percent level.

Hypothesis IB2: Hypothesis IB2 states that teachers having more formal education will be more likely to be favorably inclined towards educational television.

Tables 13 and 14 present the distribution of subjects according to the amount of formal education they possessed. These data indicate that of the forty teachers with favorable attitudes toward educational television nineteen, or 47.50 percent, possessed at least a master's degree. A similar pattern was evidenced by those teachers who had unfavorable attitudes toward educational television. Of the forty-eight teachers with unfavorable attitudes toward educational television nineteen, or 39.58 percent, possessed at least a master's degree. It is interesting to note that of the 183 teachers included in this study 177, or 96.72 percent, possessed at least a bachelor's degree; 136, or 74.32 percent, possessed at least a bachelor's degree plus fifteen hours; seventy-seven, or 42.07 percent, possessed at least a master's degree; and twenty-seven, or 14.75 percent, possessed at least a master's degree plus fifteen or more hours of formal training.

Applying the chi-square statistic to these data in Tables 13 and 14 we compute a chi-square value of 7.922580. Consulting Fisher's X^2 Table it is determined that, at eight

degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB2 is not supported.

TABLE 13

FORMAL EDUCATION OF TEACHERS
(Frequency)

Teacher Attitude	No Degree	B.A.	B.A.+15	M.A.	M.A.+15 Or More	Totals
Favorable	2	7	12	10	9	40
Neutral	3	26	27	25	14	95
Unfavorable	1	8	20	15	4	48
Totals	6	41	59	50	27	183

TABLE 14

FORMAL EDUCATION OF TEACHERS
(Percent)

Teacher Attitude	No Degree	B.A.	B.A.+15	M.A.	M.A.+15 Or More	Totals
Favorable	5.00	17.50	30.00	25.00	22.50	100.00
Neutral	3.16	27.37	28.42	26.32	14.74	100.00
Unfavorable	2.08	16.67	41.67	31.25	8.33	100.00
Totals	3.28	22.40	32.24	27.32	14.75	100.00

Chi-square = 7.922580
DF = 8
Chi-square is not significant at the five percent level.

Hypothesis IB3: Hypothesis IB3 states that teachers having more recent formal training will be more likely to be favorably inclined towards educational television.

Tables 15 and 16 present the distribution of subjects according to their recency of formal training. Of the forty teachers with favorable attitudes toward educational television nineteen, or 47.50 percent, had received formal training as recent as two years ago. Of the forty-eight teachers with unfavorable attitudes toward educational television eighteen, or 37.50 percent, had received formal training in the past two years. Eighty-five of the 183 teachers included in this study had received some formal training in the past two years. Fifty-one, or 27.87 percent, of the 183 teachers in this study had not received any formal training in the past seven years.

Applying the chi-square statistic to these data in Tables 15 and 16 we compute a chi-square value of 4.064806. Consulting Fisher's X^2 Table it is determined that, at six degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB3 is not supported.

Hypothesis IB4: Hypothesis IB4 states that teachers

TABLE 15

RECENCY OF FORMAL TRAINING OF TEACHERS
(Frequency)

Teacher Attitude	Past Two Years	Past Four Years	Past Six Years	More Than Six Years Ago	Totals
Favorable	19	8	3	10	40
Neutral	48	20	4	23	95
Unfavorable	18	9	3	18	48
Totals	85	37	10	51	183

TABLE 16

RECENCY OF FORMAL TRAINING OF TEACHERS
(Percent)

Teacher Attitude	Two Years	Four Years	Six Years	More Than Six Years Ago	Totals
Favorable	47.50	20.00	7.50	25.00	100.00
Neutral	50.53	21.05	4.21	24.21	100.00
Unfavorable	37.50	18.75	6.25	37.50	100.00
Totals	46.45	20.22	5.46	27.87	100.00

Chi-square = 4.064806
DF = 6
Chi-square is not significant at the five percent level.

who have taken more formal courses in audio-visual education will be more likely to be favorably inclined towards educational television.

Tables 17 and 18 present the distribution of subjects according to the number of hours they have completed in audio-visual courses. These data indicate that there is no relationship between attitudes of teachers toward educational television and the number of hours completed in audio-visual courses. Of the forty teachers with favorable attitudes toward educational television, fourteen, or 35 percent, had completed no formal work in audio-visual courses. Of the forty-eight teachers with unfavorable attitudes toward educational television, nineteen, or 39.58 percent, had no formal work in audio-visual courses. Eighteen, or 45 percent, of the teachers with favorable attitudes toward educational television had completed one to four hours in audio-visual courses whereas twenty-one, or 43.75 percent, of the teachers with unfavorable attitudes toward educational television had completed one to four hours in audio-visual courses. Six, or 15 percent, of the teachers with favorable attitudes toward educational television had completed five to eight hours of course work in audio-visual education and two, or 5 percent, of the teachers with favorable attitudes toward educational television had

completed more than eight hours of work in audio-visual courses. Seven, or 14.58 percent, of the teachers with unfavorable attitudes toward educational television had completed five to eight hours of work in audio-visual courses and one, or 2.08 percent, of the teachers with unfavorable attitudes toward educational television had completed more than eight hours of audio-visual work.

Applying the chi-square statistic to these data in Tables 17 and 18 we compute a chi-square value of 7.666367. Consulting Fisher's X^2 Table it is determined that, at six degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB4 is not supported.

TABLE 17

AUDIO-VISUAL TRAINING OF TEACHERS
(Frequency)

Teacher Attitude	None	1-4 Hours	5-8 Hours	More Than 8 Hours	Totals
Favorable	14	18	6	2	40
Neutral	44	44	7	0	95
Unfavorable	19	21	7	1	48
Totals	77	83	20	3	183

TABLE 18

AUDIO-VISUAL TRAINING OF TEACHERS
(Percent)

Teacher Attitude	None	1-4 Hours	5-8 Hours	More Than 8 Hours	Totals
Favorable	35.00	45.00	15.00	5.00	100.00
Neutral	46.32	46.32	7.36	.00	100.00
Unfavorable	39.58	43.75	14.58	2.09	100.00
Totals	42.08	45.36	10.93	1.63	100.00

Chi-square = 7.666367
DF = 6
Chi-square is not significant at the five percent level.

Hypothesis IB5: Hypothesis IB5 states that teachers formally educated in subject areas associated with communication skills will be more likely to be favorably inclined towards educational television.

Table 19 presents the distribution of subjects according to their major academic area. These data indicate that of the forty teachers with favorable attitudes toward educational television twenty-two, or 55 percent, completed undergraduate majors in the communication areas whereas of the forty-eight teachers with unfavorable attitudes toward

educational television twenty-six, or 55.74 percent, completed undergraduate majors in the communication areas. As the data in Table 19 clearly indicate, there is no relationship between teachers trained in the communication areas and their attitudes toward educational television.

Applying the chi-square statistic to these data in Table 19 we compute a chi-square value of .103812. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB5 is not supported.

TABLE 19

UNDERGRADUATE MAJOR OF TEACHERS

Teacher Attitude	Majors In Communication Areas		Majors In Non-Communication Areas		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	22	55.00	18	45.00	40	100.00
Neutral	54	56.84	41	43.16	95	100.00
Unfavorable	26	54.17	22	45.83	48	100.00
Totals	102	55.74	81	44.26	183	100.00

Chi-square = .103812
DF = 2
Chi-square is not significant at the five percent level.

Hypothesis IB6: Hypothesis IB6 states that teachers who have utilized educational television during their student teaching will be more likely to be favorably inclined towards educational television.

Table 20 presents the distribution of subjects according to whether they utilized educational television during their student teaching experience. Twenty-two, or 12.02 percent, of the 183 teachers included in this study indicated that they used educational television during their student teaching contact. Of this number, four teachers with favorable attitudes toward educational television utilized educational television during their student teaching contact, six teachers with unfavorable attitudes utilized educational television during their student teaching contact, and twelve teachers with neutral attitudes toward educational television utilized this medium during their student teaching contact. As the data in Table 20 indicate, there is no relationship between teachers' attitudes toward educational television and their use of educational television during their student teaching contact.

Applying the chi-square statistic to these data in Table 20 we compute a chi-square value of .198369. Consulting Fisher's X^2 Table it is determined that, at two degrees of

freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB6 is not supported.

TABLE 20

TEACHER UTILIZATION OF EDUCATIONAL TELEVISION DURING THEIR STUDENT TEACHING

Teacher Attitude	Teachers Who Used Television		Teachers Who Did Not Use Television		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	4	10.00	36	90.00	40	100.00
Neutral	12	12.63	83	87.37	95	100.00
Unfavorable	6	12.50	42	87.50	48	100.00
Totals	22	12.02	161	87.98	183	100.00

Chi-square = .198369
DF = 2
Chi-square is not significant at the five percent level.

Hypothesis IB7: Hypothesis IB7 states that teachers who have received in-service education in the use of educational television will be more likely to be favorably inclined toward educational television.

Table 21 presents the distribution of subjects according to whether they have received in-service education in the use of educational television. These data indicate that

their is no relationship between a teacher receiving in-service training in the use of educational television and his attitude towards educational television. Of the forty teachers with favorable attitudes toward educational television fifteen, or 37.50 percent, had received in-service training in the use of educational television whereas of the forty-eight teachers with unfavorable attitudes toward educational television fifteen, or 31.25 percent, had received in-service training in the use of educational television.

Applying the chi-square statistic to these data in Table 21 we compute a chi-square value of 3.688618. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB7 is not supported.

Hypothesis IB8: Hypothesis IB8 states that teachers of lower grade levels will be more likely to be favorably inclined towards educational television.

Tables 22 and 23 present the distribution of subjects according to their grade level. These data clearly indicate that there is no relationship between grade level of the

TABLE 21

TEACHER IN-SERVICE TRAINING IN THE USE OF EDUCATIONAL TELEVISION

Teacher Attitude	Teachers Receiving In-Service Training		Teachers Not Receiving In-Service Training		Totals	
	Number	Percent	Number	Percent	Number	Per Cent
Favorable	15	37.50	25	62.50	40	100.00
Neutral	21	22.11	74	77.89	95	100.00
Unfavorable	15	31.25	33	68.75	48	100.00
Totals	51	27.87	132	72.13	183	100.00

Chi-square = 3.688618
DF = 2
Chi-square is not significant at the five percent level.

teacher and the attitude he holds toward educational television. Of the forty teachers with favorable attitudes toward educational television sixteen, or 40 percent, had a fourth grade teaching assignment, twelve, or 30 percent, had a fifth grade teaching assignment, and twelve, or 30 percent, had a sixth grade teaching assignment. Comparing these figures with those teachers holding unfavorable attitudes toward educational television, we find that of the forty-eight teachers in this category, seventeen, or 35.42 percent, had a fourth grade teaching assignment, eighteen, or 37.50 percent, had a fifth grade teaching assignment, and thirteen,

or 27.08 percent, had a sixth grade teaching assignment.

Applying the chi-square statistic to these data in Tables 22 and 23 we compute a chi-square value of 3.294195. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IB8 is not supported.

Hypothesis IC1: Hypothesis IC1 states that teachers who have made greater use of materials supplied by the educational television broadcast source will be more likely to be favorably inclined towards educational television.

Table 24 presents the distribution of subjects according to whether they utilize the materials supplied by the educational television broadcast source. Of the 183 teachers included in this study, ninety-one, or 49.73 percent, utilized the materials supplied by the educational television broadcast source. Of this total, twenty-one had favorable attitudes toward educational television and twenty-one had unfavorable attitudes toward educational television. These data clearly demonstrate that there is no relationship between the attitude a teacher holds toward educational television and whether he utilizes the materials provided by the educational television broadcast

source.

Applying the chi-square statistic to these data in Table 24 we compute a chi-square value of 1.517622. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IC1 is not supported.

TABLE 22

GRADE LEVEL OF TEACHERS
(Frequency)

Teacher Attitude	Fourth Grade	Fifth Grade	Sixth Grade	Totals
Favorable	16	12	12	40
Neutral	42	22	31	95
Unfavorable	17	18	13	48
Totals	75	52	56	183

Chi-square = 3.294195
DF = 4
Chi-square is not significant at the five percent level.

TABLE 23

GRADE LEVEL OF TEACHERS
(Percent)

Teacher Attitude	Fourth Grade	Fifth Grade	Sixth Grade	Totals
Favorable	40.00	30.00	30.00	100.00
Neutral	44.21	23.16	32.63	100.00
Unfavorable	35.42	37.50	27.08	100.00
Totals	40.98	28.42	30.60	100.00

TABLE 24

UTILIZATION OF BROADCAST SOURCE MATERIALS BY TEACHERS

Teacher Attitude	Teachers Using Materials		Teachers Not Using Materials		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	21	52.50	19	47.50	40	100.00
Neutral	49	51.58	46	48.42	95	100.00
Unfavorable	21	43.75	27	56.25	48	100.00
Totals	91	49.73	92	50.27	183	100.00

Chi-square = 1.517622
DF = 2
Chi-square is not significant at the five percent level.

Hypothesis IC2: Hypothesis IC2 states that teachers who have communicated more frequently with the educational television source will be more likely to be favorably inclined towards educational television.

Tables 25 and 26 present the distribution of subjects according to the frequency with which they contact the educational television source. Of the 183 teachers included in this study, eighty-five, or 46.45 percent, had no contact with the educational television source and 166, or 90.71 percent, contacted the educational television source only once every two months or less. The data also reflect that only three, or 6.05 percent, of the 183 teachers included in this study contacted the educational television source more often than once a month. Data contained in Tables 25 and 26 clearly demonstrate that there is no relationship between the attitudes held by teachers toward educational television and the frequency with which they contact the educational television source.

Applying the chi-square statistic to these data in Tables 25 and 26 we compute a chi-square value of 7.291214. Consulting Fisher's X^2 Table it is determined that, at six degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IC2 is

not supported.

TABLE 25

TEACHER CONTACT WITH THE EDUCATIONAL TELEVISION SOURCE
(Frequency)

Teacher Attitude	Never	Once Every Two Months Or Less	Once A Month	More Often Than Once A Month	Totals
Favorable	14	21	3	2	40
Neutral	46	39	9	1	95
Unfavorable	25	21	2	0	48
Totals	85	81	14	3	183

TABLE 26

TEACHER CONTACT WITH THE EDUCATIONAL TELEVISION SOURCE
(Percent)

Teacher Attitude	Never	Once Every Two Months Or Less	Once A Month	More Often Than Once A Month	Totals
Favorable	35.00	52.50	7.50	5.00	100.00
Neutral	48.42	41.05	9.47	1.06	100.00
Unfavorable	52.08	43.75	4.17	.00	100.00
Totals	46.45	44.26	7.65	1.64	100.00

Chi-square = 7.291214
DF = 6
Chi-square is not significant at the five percent level.

Hypothesis IC3: Hypothesis IC3 states that teachers who have been students in classes which utilized educational television in instruction will be more likely to be favorably inclined towards educational television.

Table 27 presents the distribution of subjects according to whether they have been students in classes utilizing educational television. Of the 183 teachers included in this study, Forty-five, or 24.59 percent, had been students in classes utilizing educational television. Of the forty teachers with favorable attitudes toward educational television, six, or 15 percent, had been students in classes utilizing educational television whereas of the forty-eight teachers with unfavorable attitudes toward educational television, nine, or 18.75 percent, had been students in classes utilizing educational television.

Applying the chi-square statistic to these data in Table 27 we compute a chi-square value of 5.369082. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IC3 is not supported.

Hypothesis IC4: Hypothesis IC4 states that teachers who have participated in the decision to utilize educational

TABLE 27

TEACHERS AS STUDENTS IN CLASSES UTILIZING EDUCATIONAL TELEVISION

Teacher Attitude	Student In A Class Utilizing Television		Student Not In A Class Utilizing Television		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	6	15.00	34	85.00	40	100.00
Neutral	30	31.58	65	68.42	95	100.00
Unfavorable	9	18.75	39	81.25	48	100.00
Totals	45	24.59	138	75.41	183	100.00

Chi-square = 5.369082
DF = 2
Chi-square is not significant at the five percent level.

television in their classrooms will be more likely to be favorably inclined towards educational television.

Tables 28 and 29 present the distribution of subjects according to whether they participated in the decision to utilize educational television in their classrooms. Of the 183 teachers included in this study, seventy-two, or 39.34 percent, had no role in the decision as to whether or not they would use educational television in their classrooms and 111, or 60.65 percent, participated to some degree in this decision. Of the forty teachers with favorable attitudes

toward educational television, thirty-six, or 90 percent, participated to some degree in the decision to use educational television in their classrooms. Contrasted with these figures, of the forty-eight teachers with unfavorable attitudes toward educational television, only seventeen, or 35.42 percent, participated to some degree in the decision to use educational television in their classrooms. These data in Tables 28 and 29 clearly demonstrate a relationship between teachers' attitudes toward educational television and their participation in the decision to use educational television in their classrooms.

Applying the chi-square statistic to these data in Tables 28 and 29 we compute a chi-square value of 27.999412. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IC4 is supported.

Hypothesis IC5: Hypothesis IC5 states that teachers who have spent more years using educational television in their classrooms will be more likely to be favorably inclined towards educational television.

Tables 30 and 31 present the distribution of subjects according to the number of years they have utilized educa-

TABLE 28

TEACHERS' DECISION-MAKING ROLE IN THE UTILIZATION OF EDUCATIONAL TELEVISION
(Frequency)

Teacher Attitude	No Role In The Decision	Some Role In The Decision	Much Role In The Decision	Totals
Favorable	4	12	24	40
Neutral	37	21	37	95
Unfavorable	31	8	9	48
Totals	72	41	70	183

TABLE 29

TEACHERS' DECISION-MAKING ROLE IN THE UTILIZATION OF EDUCATIONAL TELEVISION
(Percent)

Teacher Attitude	No Role In The Decision	Some Role In The Decision	Much Role In The Decision	Totals
Favorable	10.00	30.00	60.00	100.00
Neutral	38.95	22.10	38.95	100.00
Unfavorable	64.58	16.67	18.75	100.00
Totals	39.34	22.40	38.25	100.00

Chi-square = 27.999412
DF = 4
Chi-square is significant at the one percent level.

tional television in their classrooms. Of the 183 teachers included in this study, forty-nine, or 26.78 percent, have utilized educational television one year, thirty-three, or 18.03 percent have utilized educational television two years, thirty-seven, or 20.22 percent, have used educational television three years, and sixty-four, or 34.97 percent, have utilized educational television more than three years. Although there is no statistically significant relationship between a teacher's attitude toward educational television and the number of years he has utilized it in the classroom the data indicate that teachers who have used educational television for longer periods of time tend to evidence more favorable attitudes toward educational television.

Applying the chi-square statistic to these data in Tables 30 and 31 we compute a chi-square value of 5.748876. Consulting Fisher's X^2 Table it is determined that, at six degrees of freedom, the value of chi-square is not significant at the five percent level. Therefore, Hypothesis IC5 is not supported.

Hypothesis IC6: Hypothesis IC6 states that teachers who perceive that educational television was introduced into their classrooms to improve instruction as opposed to being instituted as an economy measure will be more likely to be

TABLE 30

EDUCATIONAL TELEVISION EXPERIENCE OF CLASSROOM TEACHERS
(Frequency)

Teacher Attitude	One Year	Two Years	Three Years	More Than Three Years	Totals
Favorable	7	6	10	17	40
Neutral	30	15	17	33	95
Unfavorable	12	12	10	14	48
Totals	49	33	37	64	183

TABLE 31

EDUCATIONAL TELEVISION EXPERIENCE OF CLASSROOM TEACHERS
(Percent)

Teacher Attitude	One Year	Two Years	Three Years	More Than Three Years	Totals
Favorable	17.50	15.00	25.00	42.50	100.00
Neutral	31.58	15.79	17.89	34.74	100.00
Unfavorable	25.00	25.00	20.83	29.17	100.00
Totals	26.78	18.03	20.22	34.97	100.00

Chi-square = 5.748876
DF = 6
Chi-square is not significant at the five percent level.

favorably inclined towards educational television.

Tables 32 and 33 present the distribution of subjects according to their perceptions regarding the purposes of introducing educational television into their classrooms. Of the 183 teachers included in this study, 165, or 90.16 percent, perceived that the purpose of introducing educational television into their classrooms was to improve instruction. Of the forty teachers with favorable attitudes toward educational television, thirty-seven, or 92.50 percent, perceived that the purpose of introducing educational television into their classrooms was to improve the instructional program. Forty, or 83.33 percent, of the forty-eight teachers with unfavorable attitudes toward educational television perceived that the purpose of introducing educational television into their classrooms was to improve instruction. Only five, or 2.73 percent, of the teachers included in this study perceived the introduction of television in the classroom as an economy measure.

Applying the chi-square statistic to these data in Tables 32 and 33 we compute a chi-square value of 10.926491. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is significant at

the five percent level. Therefore, Hypothesis IC6 is supported.

TABLE 32

TEACHER PERCEPTIONS AS TO WHY EDUCATIONAL TELEVISION WAS INTRODUCED INTO THE CLASSROOM
(Frequency)

Teacher Attitude	To Improve Instruction	As An Economy Measure	To Improve Instruction And As An Economy Measure	Totals
Favorable	37	1	2	40
Neutral	88	4	3	95
Unfavorable	40	0	8	48
Totals	165	5	13	183

TABLE 33

TEACHER PERCEPTIONS AS TO WHY EDUCATIONAL TELEVISION WAS INTRODUCED INTO THE CLASSROOM
(Percent)

Teacher Attitude	To Improve Instruction	As An Economy Measure	To Improve Instruction And As An Economy Measure	Totals
Favorable	92.50	2.50	5.00	100.00
Neutral	92.63	4.21	3.16	100.00
Unfavorable	83.33	.00	16.67	100.00
Totals	90.16	2.74	7.10	100.00

Chi-square = 10.926491
DF = 4
Chi-square is significant at the five percent level.

Hypothesis IC7: Hypothesis IC7 states that teachers who have perceived their role as being dominant to that of the educational television instructor will be more likely to be favorably inclined towards educational television.

Tables 34 and 35 present the distribution of subjects according to how they perceived their role in relation to that of the educational television instructor. Of the 183 teachers included in this study, sixty, or 32.79 percent, perceived that the role of the educational television instructor was dominant to that of the classroom teacher; 104, or 56.83 percent, perceived their role as being dominant to that of the educational television instructor; and nineteen, or 10.38 percent, perceived that the roles of the educational television instructor and the classroom teacher were equal. Eighteen, or 45 percent, of the teachers with favorable attitudes toward educational television perceived their role as being dominant to that of the educational television instructor. Of the forty-eight teachers with unfavorable attitudes toward educational television, thirty-three, or 68.75 percent, perceived their role as being dominant to that of the educational television instructor.

Applying the chi-square statistic to these data in

Tables 34 and 35 we compute a chi-square value of 6.294550. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IC7 is not supported.

TABLE 34

ROLE PERCEPTION OF TEACHERS
(Frequency)

Teacher Attitude	Television Teacher Dominant	Classroom Teacher Dominant	Television Teacher And Classroom Teacher Equal	Totals
Favorable	17	18	5	40
Neutral	30	53	12	95
Unfavorable	13	33	2	48
Totals	60	104	19	183

TABLE 35

ROLE PERCEPTION OF TEACHERS
(Percent)

Teacher Attitude	Television Teacher Dominant	Classroom Teacher Dominant	Television Teacher And Classroom Teacher Equal	Totals
Favorable	42.50	45.00	12.50	100.00
Neutral	31.58	55.79	12.63	100.00
Unfavorable	27.08	68.75	4.17	100.00
Totals	32.79	56.83	10.38	100.00

Chi-square = 6.294550
DF = 4
Chi-square is not significant at the five percent level.

Hypothesis IC8: Hypothesis IC8 states that teachers who perceive that educational television affords greater opportunity for recognition of individual differences will be more likely to be favorably inclined towards educational television.

Tables 36 and 37 present the distribution of subjects according to their perceptions regarding the ability of educational television to provide greater opportunity for recognition of individual differences. Of the 183 teachers included in this study, ninety-four, or 51.37 percent, perceived no additional opportunity for recognizing individual differences; sixty-nine, or 37.70 percent, perceived some additional opportunities for recognizing individual differences; and twenty, or 10.93 percent, perceived much additional opportunity for recognition of individual differences. Of the forty teachers with favorable attitudes toward educational television, twenty-seven, or 67.50 percent, perceived educational television providing some or much additional opportunity for recognition of individual differences. Of the forty-eight teachers with unfavorable attitudes toward educational television, only eight, or 16.67 percent, perceived educational television providing some or much additional opportunity for recognition of individual differences. These data in Tables 36 and 37

clearly demonstrate a relationship between a teacher's attitude toward educational television and his perceptions regarding the ability of educational television to provide additional opportunity for recognition of individual differences.

Applying the chi-square statistic to these data in Tables 36 and 37 we compute a chi-square value of 36.090565. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IC8 is supported.

TABLE 36

TEACHER PERCEPTIONS REGARDING EDUCATIONAL TELEVISION AFFORDING GREATER OPPORTUNITY FOR RECOGNITION OF STUDENTS' INDIVIDUAL DIFFERENCES (Frequency)

Teacher Attitudes	No Additional Opportunity	Some Additional Opportunity	Much Additional Opportunity	Totals
Favorable	13	17	10	40
Neutral	41	47	7	95
Unfavorable	40	5	3	48
Totals	94	69	20	183

TABLE 37

TEACHER PERCEPTIONS REGARDING EDUCATIONAL TELEVISION AFFORDING GREATER OPPORTUNITY FOR RECOGNITION OF STUDENTS' INDIVIDUAL DIFFERENCES
(Percent)

Teacher Attitude	No Additional Opportunity	Some Additional Opportunity	Much Additional Opportunity	Totals
Favorable	32.50	42.50	25.00	100.00
Neutral	43.16	49.47	7.37	100.00
Unfavorable	83.33	10.42	6.25	100.00
Totals	51.37	37.70	10.93	100.00

Chi-square = 36.090565
DF = 4
Chi-square is significant at the one percent level.

Hypothesis IC9: Hypothesis IC9 states that teachers who perceive that educational television provides them with indirect in-service training in teaching methods will be more likely to be favorably inclined towards educational television.

Tables 38 and 39 present the distribution of subjects according to their perceptions regarding the ability of educational television to provide them with indirect in-service training experiences in teaching methods. Of the

183 teachers included in this study, thirty-seven, or 20.22 percent, perceived that educational television did not provide them with any indirect in-service training in teaching methods; eighty-three teachers, or 45.36 percent, perceived that educational television provided them with some indirect in-service training in teaching methods; and sixty-three, or 34.43 percent, perceived that educational television provided them with much indirect in-service training in teaching methods. Of the forty teachers with favorable attitudes toward educational television, thirty-three, or 82.50 percent, perceived that educational television provided some or much indirect in-service training in teaching methods whereas of the forty-eight teachers with unfavorable attitudes toward educational television, thirty-five, or 72.91 percent, perceived that educational television provided some or much indirect in-service training in teaching methods.

Applying the chi-square statistic to these data in Tables 38 and 39 we compute a chi-square value of 7.332280. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IC9 is not supported.

TABLE 38

TEACHER PERCEPTIONS REGARDING EDUCATIONAL TELEVISION AND IN-SERVICE TRAINING IN TEACHING METHODS
(Frequency)

Teacher Attitude	No Provision	Some Provision	Much Provision	Totals
Favorable	7	13	20	40
Neutral	17	48	30	95
Unfavorable	13	22	13	48
Totals	37	83	63	183

TABLE 39

TEACHER PERCEPTIONS REGARDING EDUCATIONAL TELEVISION AND IN-SERVICE TRAINING IN TEACHING METHODS
(Percent)

Teacher Attitude	No Provision	Some Provision	Much Provision	Totals
Favorable	17.50	32.50	50.00	100.00
Neutral	17.89	50.53	31.58	100.00
Unfavorable	27.08	45.84	27.08	100.00
Totals	20.22	45.36	34.43	100.00

Chi-square = 7.332280
DF = 4
Chi-square is not significant at the five percent level.

Hypothesis IC10: Hypothesis IC10 states that teachers who perceive that educational television provides greater opportunity to evaluate student achievement in a variety of ways will be more likely to be favorably inclined towards educational television.

Tables 40 and 41 present the distribution of subjects according to their perceptions regarding the ability of educational television to afford greater opportunities for evaluating student achievement in a variety of ways. Of the 183 teachers included in this study, sixty-four, or 34.97 percent, perceived that educational television affords no greater opportunity for evaluating student achievement in a variety of ways; ninety-five, or 51.91 percent, perceived that educational television afforded some additional opportunity for evaluating student achievement in a variety of ways; and twenty-four, or 13.11 percent, perceived that educational television afforded much additional opportunity for evaluating student achievement in a variety of ways. Of the forty teachers with favorable attitudes toward educational television, twenty-eight, or 70 percent, perceived that educational television afforded greater opportunity for evaluating student achievement in a variety of ways. Of the forty-eight teachers with unfavorable attitudes toward educational television, only seventeen, or 35.42 percent,

perceived that educational television afforded greater opportunity for evaluating student achievement in a variety of ways. These data in Tables 40 and 41 clearly demonstrate that a relationship exists between the attitude a teacher holds toward educational television and his perception of educational television's ability to provide greater opportunities for evaluating student achievement in a variety of ways.

Applying the chi-square statistic to these data in Tables 40 and 41 we compute a chi-square value of 27.588196. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IC10 is supported.

TABLE 40

TEACHER PERCEPTIONS OF EDUCATIONAL TELEVISION AND THE EVALUATION OF STUDENT ACHIEVEMENT
(Frequency)

Teacher Attitude	No Additional Opportunity	Some Additional Opportunity	Much Additional Opportunity	Totals
Favorable	12	20	8	40
Neutral	21	61	13	95
Unfavorable	31	14	3	48
Totals	64	95	24	183

TABLE 41

TEACHER PERCEPTIONS OF EDUCATIONAL TELEVISION AND THE EVALUATION OF STUDENT ACHIEVEMENT
(Percent)

Teacher Attitude	No Additional Opportunity	Some Additional Opportunity	Much Additional Opportunity	Totals
Favorable	30.00	50.00	20.00	100.00
Neutral	22.11	64.21	13.68	100.00
Unfavorable	64.58	29.17	6.25	100.00
Totals	34.97	51.91	13.11	100.00

Chi-square = 27.588196
DF = 4
Chi-square is significant at the one percent level.

Hypothesis IC11: Hypothesis IC11 states that teachers who have spent more time in pre-television instruction time will be more likely to be favorably inclined towards educational television.

Tables 42 and 43 present the distribution of subjects according to the amount of time they spend in pre-television instruction time. Of the forty teachers with favorable attitudes toward educational television, thirty-eight, or 95 percent, spent some time in pre-television instruction time whereas of the forty-eight teachers with unfavorable

attitudes toward educational television, thirty-eight, or 79.17 percent, spent some time in pre-television instruction time. One hundred sixty-two teachers, or 88.52 percent, of all the teachers included in this study spent some time in pre-television instruction time. As these data in Tables 42 and 43 indicate there is a relationship between a teacher's attitude toward educational television and the amount of time he spends in pre-television instruction time.

Applying the chi-square statistic to these data in Tables 42 and 43 we compute a chi-square value of 16.728706. Consulting Fisher's X^2 Table it is determined that, at eight degrees of freedom, the chi-square value is significant at the five percent level. Therefore, Hypothesis IC11 is supported.

TABLE 42

AMOUNT OF TEACHER PRE-TELEVISION INSTRUCTION TIME
(Frequency)

Teacher Attitude	No Time	1-20 Minutes	21-40 Minutes	41-60 Minutes	More Than 60 Minutes	Totals
Favorable	2	24	7	6	1	40
Neutral	9	57	21	4	4	95
Unfavorable	10	28	5	1	4	48
Totals	21	109	33	11	9	183

TABLE 43

AMOUNT OF TEACHER PRE-TELEVISION INSTRUCTION TIME
(Percent)

Teacher Attitude	No Time	1-20 Minutes	21-40 Minutes	41-60 Minutes	More Than 60 Minutes	Totals
Favorable	5.00	60.00	17.50	15.00	2.50	100.00
Neutral	9.47	60.00	22.11	4.21	4.21	100.00
Unfavorable	20.83	58.33	10.42	2.09	8.33	100.00
Totals	11.48	59.56	18.03	6.01	4.92	100.00

Chi-square = 16.728706
DF = 8
Chi-square is significant at the five percent level.

Hypothesis IC12: Hypothesis IC12 states that teachers who have spent more time in post-television instruction time will be more likely to be favorably inclined towards educational television.

Tables 44 and 45 present the distribution of subjects according to the amount of time they spend in post-television instruction time. Of the forty teachers with favorable attitudes toward educational television, thirty-nine, or 97.50 percent, spent some time in post-television instruction time whereas of the forty-eight teachers with unfavorable attitudes toward educational television, forty-three, or

89.58 percent, spent some time in post-television instruction time. One hundred seventy six teachers, or 96.17 percent, of all the teachers included in this study spent some time in post-television instruction time.

Applying the chi-square statistic to these data in Tables 44 and 45 we compute a chi-square value of 13.432936. Consulting Fisher's X^2 Table it is determined that, at eight degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IC12 is not supported.

TABLE 44

AMOUNT OF TEACHER POST-TELEVISION INSTRUCTION TIME
(Frequency)

Teacher Attitude	No Time	1-20 Minutes	21-40 Minutes	41-60 Minutes	More Than 60 Minutes	Totals
Favorable	1	19	9	7	4	40
Neutral	1	44	23	18	9	95
Unfavorable	5	27	10	2	4	48
Totals	7	90	42	27	17	183

TABLE 45

AMOUNT OF TEACHER POST-TELEVISION INSTRUCTION TIME
(Percent)

Teacher Attitude	No Time	1-20 Minutes	21-40 Minutes	41-60 Minutes	More Than 60 Minutes	Totals
Favorable	2.50	47.50	22.50	17.50	10.00	100.00
Neutral	1.05	46.32	24.21	18.95	9.47	100.00
Unfavorable	10.42	56.25	20.83	4.17	8.33	100.00
Totals	3.83	49.18	22.95	14.75	9.29	100.00

Chi-square = 13.432936
DF = 8
Chi-square is not significant at the five percent level.

Hypothesis IC13: Hypothesis IC13 states that teachers who perceive that educational television provides student experiences not otherwise possible will be more likely to be favorably inclined towards educational television.

Tables 46 and 47 present the distribution of subjects according to their perceptions regarding the ability of educational television to provide student experiences not possible otherwise. Of the 183 teachers included in this study, 174, or 95.08 percent, perceived that educational television provides students with experiences not possible otherwise. Of the forty teachers with favorable attitudes

toward educational television, forty, or 100 percent, perceived that educational television provides students with experiences not otherwise possible whereas of the forty-eight teachers with unfavorable attitudes toward educational television, forty, or 83.33 percent, perceived that educational television provides experiences not otherwise possible.

Applying the chi-square statistic to these data in Tables 46 and 47 we compute a chi-square value of 37.787893. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IC13 is supported.

TABLE 46

TEACHER PERCEPTIONS REGARDING EDUCATIONAL TELEVISION EXPERIENCES NOT POSSIBLE OTHERWISE
(Frequency)

Teacher Attitude	No Additional Experiences	Some Additional Experiences	Many Additional Experiences	Totals
Favorable	0	6	34	40
Neutral	1	34	60	95
Unfavorable	8	25	15	48
Totals	9	65	109	183

TABLE 47

TEACHER PERCEPTIONS REGARDING EDUCATIONAL TELEVISION EXPERIENCES NOT POSSIBLE OTHERWISE
(Percent)

Teacher Attitude	No Additional Experiences	Some Additional Experiences	Many Additional Experiences	Totals
Favorable	.00	15.00	85.00	100.00
Neutral	1.05	35.79	63.16	100.00
Unfavorable	16.67	52.08	31.25	100.00
Totals	4.92	35.52	59.56	100.00

Chi-square = 37.787893
DF = 4
Chi-square is significant at the one percent level.

Hypothesis IIA1: Hypothesis IIA1 states that male students will be more likely to be favorably inclined towards educational television.

Table 48 presents the distribution of subjects according to sex. Of the 633 students included in this study, 304, or 48.03 percent, were males and 329, or 51.97 percent, were females. Of the 139 students with favorable attitudes toward educational television, sixty-nine, or 49.64 percent, were males and seventy, or 50.36 percent were females. As the data in Table 48 demonstrate there is no relationship

between the attitude a student holds toward educational television and his sex.

Applying the chi-square statistic to these data in Table 48 we compute a chi-square value of .553617. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IIA1 is not supported.

TABLE 48

SEX OF STUDENTS

Student Attitude	Male Number	Male Percent	Female Number	Female Percent	Totals Number	Totals Percent
Favorable	69	49.64	70	50.36	139	100.00
Neutral	146	48.67	154	51.33	300	100.00
Unfavorable	89	45.88	105	54.12	194	100.00
Totals	304	48.03	329	51.97	633	100.00

Chi-square = .553617
DF = 2
Chi-square is not significant at the five percent level.

Hypothesis IIA2: Hypothesis IIA2 states that younger students will be more likely to be favorably inclined towards educational television.

Tables 49 and 50 present the distribution of subjects according to their age. Of the 633 students included in this study, 192, or 30.33 percent, were nine years of age; 178, or 28.12 percent were ten years of age; 211, or 33.33 percent, were eleven years of age; forty-three, or 6.79 percent, were twelve years of age; and nine, or 1.42 percent, were over twelve years of age. A breakdown of the students by age who evidenced favorable attitudes toward educational television is as follows: 34.53 percent were nine years of age; 30.94 percent were ten years of age; 30.22 percent were eleven years of age; 4.32 percent were twelve years of age; and there were no students over twelve years of age who evidenced favorable attitudes toward educational television.

Applying the chi-square statistic to these data in Tables 49 and 50 we compute a chi-square value of 28.822812. Consulting Fisher's X^2 Table it is determined that, at eight degrees of freedom, the chi-square value is significant at at the one percent level. Therefore, Hypothesis IIA2 is supported.

Hypothesis IIA3: Hypothesis IIA3 states that students who participate most frequently in extra-curricular activities will be more likely to be favorably inclined towards educational television.

TABLE 49

AGE OF STUDENTS
(Frequency)

Student Attitude	Nine Years	Ten Years	Eleven Years	Twelve Years	Over Twelve Years	Totals
Favorable	48	43	42	6	0	139
Neutral	81	99	98	21	1	300
Unfavorable	63	36	71	16	8	194
Totals	192	178	211	43	9	633

TABLE 50

AGE OF STUDENTS
(Percent)

Student Attitude	Nine Years	Ten Years	Eleven Years	Twelve Years	Over Twelve Years	Totals
Favorable	34.53	30.94	30.21	4.32	.00	100.00
Neutral	27.00	33.00	32.67	7.00	.33	100.00
Unfavorable	32.47	18.56	36.60	8.25	4.12	100.00
Totals	30.33	28.12	33.33	6.79	1.42	100.00

Chi-square = 28.822812
DF = 8
Chi-square is significant at the one percent level.

Tables 51 and 52 present the distribution of subjects according to the frequency with which they participated in extra-curricular activities. Of the 633 students included in this study, 215, or 33.97 percent, did not participate in any extra-curricular activity; 215, or 33.97 percent, participated in one extra-curricular activity; 114, or 18.01 percent, participated in two extra-curricular activities; sixty-three, or 9.95 percent, participated in three extra-curricular activities; and twenty-six, or 4.11 percent, participated in more than three extra-curricular activities. Of the 139 students with favorable attitudes toward educational television, 109, or 78.42 percent, participated in one or more extra-curricular activities whereas of the 194 students with unfavorable attitudes toward educational television, 119, or 61.34 percent, participated in one or more extra-curricular activities.

Applying the chi-square statistic to these data in Tables 51 and 52 we compute a chi-square value of 23.349843. Consulting Fisher's X^2 Table it is determined that, at eight degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IIA3 is supported.

TABLE 51

AMOUNT OF STUDENT EXTRA-CURRICULAR PARTICIPATION
(Frequency)

Student Attitude	No Activity	One Activity	Two Activities	Three Activities	More Than Three Activities	Totals
Favorable	30	52	28	22	7	139
Neutral	110	110	46	26	8	300
Unfavorable	75	53	40	15	11	194
Totals	215	215	114	63	26	633

TABLE 52

AMOUNT OF STUDENT EXTRA-CURRICULAR PARTICIPATION
(Percent)

Student Attitude	No Activity	One Activity	Two Activities	Three Activities	More Than Three Activities	Totals
Favorable	21.58	37.41	20.14	15.83	5.04	100.00
Neutral	36.67	36.67	15.33	8.66	2.67	100.00
Unfavorable	38.66	27.32	20.62	7.73	5.67	100.00
Totals	33.97	33.97	18.01	9.95	4.11	100.00

Chi-square = 23.349843
DF = 8
Chi-square is significant at the one percent level.

Hypothesis IIA4: Hypothesis IIA4 states that students favorably inclined towards educational television will spend more time at home each week watching television.

Tables 53 and 54 present the distribution of subjects according to the amount of time they watch television at home each week. Of the 633 students included in this study, four, or .63 percent, did not watch any television at home each week; 108, or 17.06 percent, watched television at home one to five hours each week; 143, or 22.59 percent, watched television at home six to ten hours each week; 137, or 21.64 percent, watched television at home eleven to fifteen hours each week; and 241, or 38.07 percent, watched television at home more than fifteen hours each week. Of the students with favorable attitudes toward educational television, 41.01 percent watched television at home more than fifteen hours each week compared with 35.57 percent of the students with unfavorable attitudes toward educational television.

Applying the chi-square statistic to these data in Tables 53 and 54 we compute a chi-square value of 10.366735. Consulting Fisher's X^2 Table it is determined that, at eight degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IIA4 is not supported.

TABLE 53

AMOUNT OF HOME TELEVISION VIEWING BY STUDENTS
(Frequency)

Student Attitude	None	1-5 Hours Weekly	6-10 Hours Weekly	11-15 Hours Weekly	More Than 15 Hours Weekly	Totals
Favorable	2	23	26	31	57	139
Neutral	2	59	68	56	115	300
Unfavorable	0	26	49	50	69	194
Totals	4	108	143	137	241	633

TABLE 54

AMOUNT OF HOME TELEVISION VIEWING BY STUDENTS
(Percent)

Student Attitude	None	1-5 Hours Weekly	6-10 Hours Weekly	11-15 Hours Weekly	More Than 15 Hours Weekly	Totals
Favorable	1.44	16.55	18.71	22.30	41.01	100.00
Neutral	.67	19.67	22.67	18.67	38.33	100.00
Unfavorable	.00	13.40	25.26	25.77	35.57	100.00
Totals	.63	17.06	22.59	21.64	38.07	100.00

Chi-square = 10.366735
DF = 8
Chi-square is not significant at the five percent level.

Hypothesis IIA5: Hypothesis IIA5 states that students who have less ambitious educational plans will be more likely to be favorably inclined towards educational television.

Table 55 presents the distribution of subjects according to their educational plans. Of the 633 students included in this study, 537, or 84.83 percent, indicated that they plan to attend college. Of this number, 119 had favorable attitudes toward educational television, 256 had neutral attitudes toward educational television, and 162 had unfavorable attitudes toward educational television. As the data in Table 55 clearly demonstrate, there is no relationship between a student's educational plans and his attitudes toward educational television.

Applying the chi-square statistic to these data in Table 55 we compute a chi-square value of .389714. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IIA5 is not supported.

Hypothesis IIA6: Hypothesis IIA6 states that students who have less ambitious occupational plans will be more

TABLE 55

STUDENTS' EDUCATIONAL PLANS

Student Attitude	Plan To Attend College		Plan Not To Attend College		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	119	85.61	20	14.39	139	100.00
Neutral	256	85.33	44	14.67	300	100.00
Unfavorable	162	83.51	32	16.49	194	100.00
Totals	537	84.83	96	15.17	633	100.00

Chi-square = .389714
DF = 2
Chi-square is not significant at the five percent level.

likely to be favorably inclined towards educational television.

Tables 56 and 57 present the distribution of subjects according to their occupational plans. Of the 633 students included in this study, 348, or 54.98 percent, plan to pursue professional occupations; sixty-five, or 10.27 percent, plan to pursue skilled occupations; 134, or 21.17 percent, plan to pursue semi-skilled occupations; and eighty-six, or 13.59 percent, did not respond to the question. Of the 139 students with favorable attitudes toward educational television, eighty-one, or 58.27 percent,

plan to pursue professional occupations; fifteen, or 10.79 percent, plan to pursue skilled occupations; twenty-eight, or 20.14 percent, plan to pursue semi-skilled occupations; and fifteen, or 10.79 percent, did not respond. Of the 194 students with unfavorable attitudes toward educational television, 102, or 52.58 percent, plan to pursue professional occupations; twenty-five, or 12.89 percent, plan to pursue skilled occupations; forty-two, or 21.65 percent, plan to pursue semi-skilled occupations; and twenty-five, or 12.89 percent, did not respond.

Applying the chi-square statistic to these data in Tables 56 and 57 we compute a chi-square value of 4.541097. Consulting Fisher's X^2 Table it is determined that, at six degrees of freedom, the chi-square value is not significant at the five percent level. Therefore, Hypothesis IIA6 is not supported.

Hypothesis IIB1: Hypothesis IIB1 states that students who have had more previous exposure to educational television will be more likely to be favorably inclined towards educational television.

Tables 58 and 59 present the distribution of subjects according to the number of years they have used educational

TABLE 56

STUDENTS' OCCUPATIONAL PLANS
(Frequency)

Student Attitude	Professional	Skilled	Semi-Skilled	No Response	Totals
Favorable	81	15	28	15	139
Neutral	165	25	64	46	300
Unfavorable	102	25	42	25	194
Totals	348	65	134	86	633

TABLE 57

STUDENTS' OCCUPATIONAL PLANS
(Percent)

Student Attitude	Professional	Skilled	Semi-Skilled	No Response	Totals
Favorable	58.27	10.79	20.14	10.79	100.00
Neutral	55.00	8.33	21.33	15.33	100.00
Unfavorable	52.58	12.89	21.65	12.89	100.00
Totals	54.98	10.27	21.17	13.59	100.00

Chi-square = 4.541097
DF = 6
Chi-square is not significant at the five percent level.

television as an instructional medium in their instructional programs. Of the 633 students included in this study, 213, or 33.65 percent, had used educational television for one year; 221, or 34.91 percent, had used educational television for two years; 112, or 17.69 percent, had used educational television for three years; and eighty-seven, or 13.74 percent, had used educational television for more than three years. Of the 139 students with favorable attitudes toward educational television, forty-three, or 30.94 percent, had used educational television for one year; fifty-three, or 38.13 percent, had used educational television for two years; twenty-three, or 16.55 percent, had used educational television for three years; and twenty, or 14.39 percent, had used educational television for more than three years. Of the 194 students with unfavorable attitudes toward educational television, eighty-seven, or 44.85 percent, had used educational television for one year; fifty-eight, or 29.90 percent, had used educational television for two years; thirty, or 15.46 percent, had used educational television for three years; and nineteen, or 9.79 percent, had used educational television for more than three years.

Applying the chi-square statistic to these data in Tables 58 and 59 we compute a chi-square value of 17.460502. Consulting Fisher's X^2 Table it is determined that, at six

degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IIB1 is supported.

TABLE 58

LENGTH OF STUDENT EXPOSURE TO EDUCATIONAL TELEVISION
(Frequency)

Student Attitude	One Year	Two Years	Three Years	More Than Three Years	Totals
Favorable	43	53	23	20	139
Neutral	83	110	59	48	300
Unfavorable	87	58	30	19	194
Totals	213	221	112	87	633

TABLE 59

LENGTH OF STUDENT EXPOSURE TO EDUCATIONAL TELEVISION
(Percent)

Student Attitude	One Year	Two Years	Three Years	More Than Three Years	Totals
Favorable	30.94	38.13	16.55	14.39	100.00
Neutral	27.67	36.67	19.67	16.00	100.00
Unfavorable	44.85	29.90	15.46	9.79	100.00
Totals	33.65	34.91	17.69	13.74	100.00

Chi-square = 17.460502
DF = 6
Chi-square is significant at the one percent level.

Hypothesis IIB2: Hypothesis IIB2 states that students in science and mathematics classes as opposed to those in social studies or English classes will be more likely to be favorably inclined towards educational television.

Tables 60 and 61 present the distribution of subjects according to the subject area that the students are receiving educational television instruction. Of the 633 students included in this study, 119, or 18.80 percent, were in English classes; ninety-eight, or 15.48 percent, were in social studies classes; 207, or 32.70 percent, were in mathematics classes; and 209, or 33.02 percent, were in science classes. Of the 139 students with favorable attitudes toward educational television, 115, or 83.73 percent, were in science and mathematics classes. Of the 194 students with unfavorable attitudes toward educational television, 102, or 52.55 percent, were in mathematics and science classes. These data in Tables 60 and 61 clearly demonstrate that students receiving educational television instruction in the mathematics and science areas evidence more favorable attitudes toward educational television as compared with students receiving educational television instruction in the English and social studies areas.

Applying the chi-square statistic to these data in

Tables 60 and 61 we compute a chi-square value of 42.856553. Consulting Fisher's X^2 Table it is determined that, at six degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IIB3 is supported.

TABLE 60

NUMBER OF STUDENTS BY SUBJECT AREAS
(Frequency)

Student Attitude	English	Social Studies	Mathematics	Science	Totals
Favorable	11	13	45	70	139
Neutral	59	42	110	89	300
Unfavorable	49	43	52	50	194
Totals	119	98	207	209	633

TABLE 61

NUMBER OF STUDENTS BY SUBJECT AREAS
(Percent)

Student Attitude	English	Social Studies	Mathematics	Science	Totals
Favorable	7.91	9.35	32.37	50.36	100.00
Neutral	19.67	14.00	36.67	29.67	100.00
Unfavorable	25.26	22.16	26.80	25.77	100.00
Totals	18.80	15.48	32.70	33.02	100.00

Chi-square = 42.856553
DF = 6
Chi-square is significant at the one percent level.

Hypothesis IIB3: Hypothesis IIB3 states that students who participate in the decision to be placed in a class employing educational television will be more likely to be favorably inclined toward educational television.

Table 62 presents the distribution of subjects according to whether they participated in the decision of being placed in a class employing educational television. Of the 633 students included in this study, sixty-eight, or 10.74 percent, participated in the decision to be placed in a class employing educational television and 565, or 89.26 percent, did not participate in this decision. Of the 139 students with favorable attitudes toward educational television, twenty-one, or 15.11 percent, participated in the decision to be placed in a class employing educational television whereas of the 194 students with unfavorable attitudes toward educational, thirteen, or 6.70 percent, participated in the decision.

Applying the chi-square statistic to these data in Table 62 we compute a chi-square value of 6.176491. Consulting Fisher's X^2 Table it is determined that, at two degrees of freedom, the chi-square value is significant at the five percent level. Therefore, Hypothesis IIB3 is supported.

TABLE 62

STUDENTS' ROLE IN DETERMINING THEIR PLACEMENT IN A CLASS UTILIZING EDUCATIONAL TELEVISION

Student Attitude	Student Decided Placement		Student Did Not Decide Placement		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	21	15.11	118	84.89	139	100.00
Neutral	34	11.33	266	88.67	300	100.00
Unfavorable	13	6.70	181	93.30	194	100.00
Totals	68	10.74	565	89.26	633	100.00

Chi-square = 6.176491
DF = 2
Chi-square is significant at the five percent level.

Hypothesis IIC1: Hypothesis IIC1 states that students whose teachers have higher scores on the ETTAI will be more likely to be favorably inclined towards educational television than students whose teachers score lower on the ETTAI.

Table 63 presents the distribution of subjects according to how their teachers scored on the Educational Television Teacher Attitude Inventory. Of the 139 students with favorable attitudes toward educational television, ninety-five, or 68.35 percent, were students in classrooms with teachers who were favorably inclined towards educational television. Of the 194 students with attitudes unfavorable

toward educational television, seventy-three, or 37.63 percent, were in classrooms with teachers favorably inclined towards educational television. These data clearly demonstrate that a relationship exists between the attitudes a student holds toward educational television and the attitude of his teacher toward educational television.

Applying the chi-square statistic to these data in Table 63 we compute a chi-square value of 30.667804. Consulting Fisher's X^2 Table it is determined that, at four degrees of freedom, the chi-square value is significant at the one percent level. Therefore, Hypothesis IIC1 is supported.

TABLE 63

THE RELATIONSHIP OF TEACHERS' ETTAI SCORES AND THE EDUCATIONAL TELEVISION ATTITUDE SCORES OF STUDENTS

Student Attitude	Teachers Favorably Inclined		Teachers Unfavorably Inclined		Totals	
	Number	Percent	Number	Percent	Number	Percent
Favorable	95	68.35	44	31.65	139	100.00
Neutral	155	51.67	145	48.33	300	100.00
Unfavorable	73	37.63	121	62.37	194	100.00
Totals	323	51.03	310	48.97	633	100.00

Chi-square = 30.667804
DF = 4
Chi-square is significant at the one percent level.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The purpose of this study was twofold: (1) to determine the degree of acceptance or rejection by students and classroom teachers of educational television as an effective medium of instruction; (2) to determine whether or not there are certain personal characteristics of students and classroom teachers which are related to their acceptance or rejection of educational television as an effective classroom medium of instruction.

Hypotheses

This study concerned itself with the following hypotheses:

I. Circumstances in personal and professional characteristics of teachers along with the nature of their experiences with educational television will be found to be associated with the degree of acceptance of educational

television as a classroom teaching medium by classroom teachers.

A. Teachers having the following personal characteristics will be more likely to be favorably inclined towards educational television.

1. They will be males.
2. They will be younger.
3. They will be married.
4. They will have children.
5. They will spend more time at home watching television.
6. They will have participated in dramatics or related activities in high school, college, or in community groups.
7. They will have favorable attitudes toward educational television as measured by the Educational Television Teacher Attitude Inventory.[1]

B. Teachers having the following professional characteristics will be more likely to be favorably inclined towards educational television.

1. They will have fewer years experience in the profession.
2. They will have more formal education.
3. They will have more recent formal training.
4. They will have taken more formal courses in audio-visual education.

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[1]Charles W. Hardaway, op. cit.

5. They will have been formally educated in subject areas associated with communication skills.

6. They will have utilized educational television in their student teaching.

7. They will have received in-service education in the use of educational television.

8. They will be teachers of lower grade levels.

C. Teachers having the following experiences will be more likely to be favorably inclined towards educational television.

1. They will have made greater use of materials supplied by the educational television broadcast source.

2. They will have communicated more frequently with the educational television source.

3. They will have been students in classes which utilized educational television in instruction.

4. They will have participated in the decision to utilize educational television in their classrooms.

5. They will have spent more years using educational television in their classrooms.

6. They will have perceived that educational television was introduced into their classrooms to improve instruction as opposed to being instituted as an economy measure.

7. They will have perceived their role as being dominant to that of the educational television instructor.

8. They will have perceived that educational television affords greater opportunity for recognition of individual differences.

9. They will have perceived that educational television provides them with indirect in-service training in

teaching methods.

10. They will have perceived that educational television affords greater opportunity to evaluate student achievement in a variety of ways.

11. They will have spent more time in pre-television instruction time to supplement the televised lesson.

12. They will have spent more time in post-television instruction time to supplement the televised lesson.

13. They will have perceived that educational television provides student experiences not otherwise possible.

II. Circumstances in the characteristics of students, student experiences with educational television, and teachers' attitudes toward educational television will be found to be associated with the degree of acceptance of educational television as a classroom teaching medium by students.

A. Students having the following personal characteristics will be more likely to be favorably inclined towards educational television.

1. They will be males.

2. They will be younger.

3. They will have participated more frequently in extra-curricular activities.

4. They will spend more hours each week at home watching television.

5. They will have less ambitious educational plans.

6. They will have less ambitious occupational plans.

B. Students having the following experiences will be more likely to be favorably inclined towards educational television.

1. They have had more previous exposure to educational television.
2. They will be in science and mathematics classes as opposed to social studies and English classes.
3. They will have participated in the decision to be placed in a class employing educational television.

C. Students whose teachers have higher scores on the ETTAI will be more likely to be favorably inclined towards educational television than students whose teachers score lower on the ETTAI.

Procedure

One hundred eighty-three teachers of fourth, fifth, and sixth grade students in Detroit metropolitan area elementary schools, presently utilizing educational television as an instructional medium in their classrooms, were administered the Educational Television Teacher Attitude Inventory (ETTAI) and the Teacher Educational Television Experience Questionnaire. Data collected from the ETTAI were utilized to select ten teachers who scored in the upper quartile with respect to favorable attitudes toward educational television and ten teachers who scored in the lower quartile with

respect to unfavorable attitudes toward educational television.

Three hundred twenty-three students of the ten teachers with favorable attitudes and 310 students of the ten teachers with unfavorable attitudes were administered the Educational Television Attitude Scale[1] and the Educational Television Student Experience Questionnaire.

Data acquired from these instruments were then transcribed and punched on IBM electronic computer cards. The facilities of the Computer Center, University of Michigan, were used to process all data.

The data were analyzed appropriate to the previously stated hypotheses. The chi-square distribution was used to test all hypotheses. In determining the standard of significance for the possible acceptance of hypotheses, the five percent level was used.

Results

Table 64 presents a summary of the chi-square values for all hypotheses tested in this study. Of the thirty-eight hypotheses considered, thirteen were significant.

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[1]Charles W. Hardaway, op.cit.

TABLE 64

SUMMARY OF CHI-SQUARE VALUES
AND THEIR SIGNIFICANCE FOR HYPOTHESES

Hypothesis	Degrees Of Freedom	Chi-square Value	Significance
IA1	2	.319288	-
IA2	8	8.512657	-
IA3	4	1.918546	-
IA4	10	6.824565	-
IA5	8	20.903909	.01
IA6	2	4.431253	-
IA7	2	.891936	-
IB1	6	8.959729	-
IB2	8	7.922580	-
IB3	6	4.064806	-
IB4	6	7.666367	-
IB5	2	.103812	-
IB6	2	.198369	-
IB7	2	3.688618	-
IB8	4	3.294195	-
IC1	2	1.517622	-
IC2	6	7.291214	-
IC3	2	5.369082	-
IC4	4	27.999412	.01
IC5	6	5.748876	-
IC6	4	10.926491	.05
IC7	4	6.294550	-
IC8	4	36.090565	.01
IC9	4	7.332280	-
IC10	4	27.588196	.01
IC11	8	16.728706	.05
IC12	8	13.432936	-
IC13	4	37.787893	.01
IIA1	2	.553617	-
IIA2	8	28.822812	.01
IIA3	8	23.349843	.01
IIA4	8	10.366735	-
IIA5	2	.389714	-
IIA6	6	4.541097	-
IIB1	6	17.460502	.01
IIB2	6	42.856553	.01
IIB3	2	6.176491	.05
IIC1	4	30.667804	.01

Significant relationships were found between the following teacher characteristics and a favorable attitude toward educational television. Each of these characteristics is related to the hypothesis number which precedes it.

IA5 Degree of home television viewing

IC4 Participation in the decision to use educational television in the classroom

IC6 Perceiving educational television as a means to improve instruction rather than as an economy measure

IC8 Perceiving that educational television affords greater opportunity for recognition of students' individual differences

IC10 Perceiving educational television as a means to evaluate student achievement in a variety of ways

IC11 Degree to which teachers prepare for the educational television lesson

IC13 Perceiving educational television as providing student experiences not otherwise possible

Significant relationships were found between the following student characteristics and a favorable attitude toward educational television.

IIA2 Age

IIA3 Frequency of participation in extra-curricular activities

IIB1 Degree of previous exposure to educational television

IIB2 Placement of students in science and mathematics classes as opposed to English or social studies

classes

IIB3 Participation in the decision to use educational television in the classroom

IIC1 Having a classroom teacher who possesses favorable attitudes toward educational television

No significant relationships were found between the following teacher characteristics and their attitudes toward educational television.

IA1 Sex

IA2 Age

IA3 Marital status

IA4 Having children of their own

IA6 Participation in dramatics, or related activities, in high school, college, or community groups

IA7 Teaching educational television classes

IB1 Having fewer years experience in the profession

IB2 Having more formal education

IB3 Having more recent formal training

IB4 Number of audio-visual courses

IB5 Formal education in subject areas related to communication skills

IB6 Use of educational television during the student teaching contact

IB7 Receiving in-service training in the use of educational television

IB8 Teaching lower grade levels

IC1 Use of materials supplied by the educational television broadcast source

IC2 Frequency of communication with the educational television source

IC3 Formerly a student in classes utilizing educational television in instruction

IC5 Number of years spent using educational television

IC7 Perceiving their role as being dominant to that of the educational television instructor

IC9 Perceiving that educational television provides indirect in-service training in teaching methods

IC12 Amount of time spent in post-television instruction time

No significant relationships were found between the following student characteristics and their attitudes toward educational television.

IIA1 Sex

IIA4 Amount of time spent at home each week watching television

IIA5 Educational plans

IIA6 Occupational plans

CONCLUSIONS

1. Both teachers and students should be afforded an opportunity to become involved in the decision as to whether they will utilize educational television as a medium of instruction in their classrooms. Teachers and students who

are involved in this decision will be more likely to develop favorable attitudes towards educational television. This suggests that these teachers and students are more likely to support and work for its successful implementation than will be the case with those teachers and students who are not involved in the decision to utilize educational television as a teaching medium in the classroom.

2. Teachers with favorable attitudes toward educational television spend more time in preparing themselves and their students for the educational television lesson. This suggests that through adequate preparation teachers and students derive greater benefits from the television lesson and, in turn, develop and reinforce attitudes which are favorable towards educational television.

3. Students tend to become more favorable towards educational television the longer they are exposed to it. This suggests that the role of the learner in educational television classes is different than the role of the learner in a conventional classroom situation. Perhaps students new to educational television need to make certain psychological adjustments, need to adjust their work and study habits such as taking notes, outlining, identifying major points in a lesson, noting items they do not understand and

reserving these items for future discussion purposes, adjusting to a situation that involves essentially one-way communication, need to develop their senses of sight and hearing more fully, need to develop compensatory techniques as a substitute for the essential passive role they play during the televised lesson, need to adjust to a team-teaching instructional approach, and need to adjust to a situation whereby the classroom teacher may or may not fill a primary teaching role during the televised lesson. Once the student has made these adjustments and accepts them in terms of himself and the objectives of the lesson he is likely to derive greater benefits from the televised lesson and his attitude toward the medium may become more favorable.

4. The data compiled in this study indicate that little or no relationship exists between the demographic characteristics of teachers and their attitudes towards educational television. Those characteristics that do have a relationship are experiential in nature. This suggests that teachers are not likely to develop any distinct attitudes toward educational television until they have utilized the medium in the classroom. Of the seven characteristics that were found to be significantly related to favorable attitudes toward educational television, six were related to the use of educational television in the classroom. Until teachers

actually acquire some experience utilizing educational television in their classrooms they are not likely to be aware of the strengths and weaknesses of the medium and a subsequent favorable attitude towards its use.

5. Because younger students and students in mathematics and science classes were found to have more favorable attitudes toward educational television, it is suggested that utilization of educational television should begin in the lower elementary grades with emphasis in the mathematics and science areas. This suggests also that the senses of sight and hearing perhaps play a larger role in the learning processes of younger students and because educational television, particularly science and mathematics classes, tend to emphasize demonstration lessons, experiments, and maximum utilization of visual-aids, students perceive themselves as deriving substantial benefits from this medium.

6. Students who have a classroom teacher that evidences favorable attitudes toward educational television are likely to be more favorable towards educational television than students who have a classroom teacher that evidences unfavorable attitudes toward educational television. This suggests that the attitude a teacher evidences, directly or indirectly, regarding educational television, is an important

determinant in the formulation of the attitudes his students will develop towards educational television.

RECOMMENDATIONS FOR FURTHER STUDY

The results of this study suggest several recommendations for further research.

1. It would be beneficial to investigate the relationship between student achievement and student attitude toward educational television as a classroom medium of instruction. Obviously, it cannot be assumed that students with favorable attitudes toward educational television achieve at a higher level than students with unfavorable attitudes toward educational television. However, if it were established that this relationship did exist, the findings of the present study would take on additional importance in providing guidance and insight into ways of improving the learning of children through the use of educational television.

2. A comparative study should be conducted of the relationship of the television instructor's physical and behavioral characteristics with those of the classroom teacher and student attitudes toward educational television. It seems important to determine whether or not students who

receive instruction via television develop more favorable attitudes toward the medium and achieve higher when the television instructor evidences physical and behavioral characteristics similar to those of the students' regular classroom teacher.

3. It would be valuable to conduct a study designed to analyze the relationship between the expressed attitudes of students toward educational television and what the viewing teacher perceives is the attitude of the student toward educational television and how well the student achieves. Do students achieve better in an educational television class when their classroom teacher possesses an accurate perception of their attitudes toward educational television as opposed to students in an educational television class where the classroom teacher has an inaccurate perception of their attitudes toward educational television?

4. A follow-up study of the present investigation six years hence would provide a comparative basis for the evaluation and changes occurring in student attitudes toward educational television as they progress from elementary school to high school. The present study indicated that the longer students are exposed to educational television the more favorable their attitudes become toward the medium.

Does this trend continue indefinitely? Is there a leveling off point or do student attitudes toward educational television become less favorable after "too much" exposure?

In conclusion, it is hoped that some small contribution has been made toward improving our understanding of some of the factors that contribute to the formulation of student and teacher attitudes toward educational television as a medium of instruction in the classroom.

APPENDICES

APPENDIX A

EDUCATIONAL TELEVISION TEACHER EXPERIENCE QUESTIONNAIRE

APPENDIX A

EDUCATIONAL TELEVISION TEACHER EXPERIENCE QUESTIONNAIRE

This research project, conducted jointly under the auspices of The University of Michigan's Department of Educational Administration and the Michigan Association for Supervision and Curriculum Development, is an attempt to study Viewing Teachers' perceptions of various aspects of educational television.

The success of this project is dependent upon the willingness of the respondents to participate and the frankness of their answers to the questions. Neither the individuals included in this study nor the institutions they represent will be identifiable in the published results.

The instructions for filling out the questionnaire are few, and the time required to complete the questions is approximately thirty minutes. Please follow the directions listed below.

Thank you for your cooperation.

INSTRUCTIONS

1. Read each statement completely before answering.
2. Answer every question.
3. Feel free to add comments to your answers.
4. After you have answered all the questions, seal the questionnaire in the attached envelope and return to the test administrator.

1. Please indicate, as accurately as possible, the average amount of time per week you watch television outside of school.

   _____ not at all

   _____ 5 hours or less

   _____ 6 hours to ten hours

   _____ 11 hours to fifteen hours

   _____ more than fifteen hours

2. Have you ever participated in high school, college, and/or community dramatics, or related activities?

   _____ Yes

   _____ No

   If yes, specify: _____

   _____

   _____

3. How many years of teaching experience do you have, including this year?

   _____ three years or less

   _____ four years to six years

   _____ seven years to nine years

   _____ more than nine years

4. Please list degrees held and dates received.

   _____ _____
   Degree Date

   _____ _____
   Degree Date

Degree	Date
Degree	Date

5. How many semester hours beyond your highest degree have you completed?

_____ less than fifteen hours

_____ Fifteen to thirty hours

_____ more than thirty hours

_____ no hours

6. How many semester hours in audio-visual education courses do you have including courses in which you are presently enrolled?

_____ none

_____ four hours or less

_____ five hours to eight hours

_____ more than eight hours

7. Please indicate the last period you were enrolled in a college or university.

_____ present to two years ago

_____ three years to four years ago

_____ five years to six years ago

_____ more than six years ago

8. List your undergraduate major and minor areas of training e.g., English, speech, mathematics, etc.

Major	Minor
Major	Minor

9. Did you use educational television as a part of the instructional program in your practice teaching?

_____ Yes

_____ No

10. Have you ever received in-service training in the use of educational television as an instructional medium?

_____ Yes

_____ No

11. How frequently do you contact the educational television broadcast sources (ETV coordinator, studio teacher, station, etc.) that you utilize? Please check the appropriate space.

_____ have no contact

_____ once every two months or less

_____ once a month

_____ more often once every month

12. Whom do you feel is the more important person in accomplishing the aims and objectives of your educational television class?

_____ studio teacher

_____ viewing teacher

_____ both studio teacher and viewing teacher

13. How many years, including this year, have you used educational television as an instructional medium in your classroom? Please check the appropriate space.

_____ one year

_____ two years

_____ three years

_____ more than three years

14. What do you feel was the major reason educational television was introduced into your classroom? Check one space only.

_____ to more effectively teach certain concepts

_____ to utilize master teachers more effectively

_____ to save money

_____ to save space

_____ to compensate for a lack of qualified teachers in certain areas

_____ other - specify:_____

_____

15. To what extent does educational television provide for recognition of students' individual differences in your teaching situation?

_____ no help in this respect

_____ some help in this respect

_____ much help in this respect

16. To what extent does educational television afford you an opportunity to evaluate students in a variety of ways?

_____ no help in this respect

_____ some help in this respect

_____ much help in this respect

17. To what extent does the use of educational television in your classroom provide you with in-service training in teaching methods?

_____ no help in this respect

_____ some help in this respect

_____ much help in this respect

18. How many minutes of class time, on the average, would you estimate that you spend preparing your students for each 60 minutes of classroom television viewing?

_____ no time

_____ 1 to 20 minutes

_____ 21 to 40 minutes

_____ 41 to 60 minutes

_____ more than 60 minutes

19. How many minutes of class time, on the average, would you estimate that you spend in follow-up activities related to each 60 minutes of classroom television viewing?

_____ no time

_____ 1 to 20 minutes

_____ 21 to 40 minutes

_____ 41 to 60 minutes

_____ more than 60 minutes

20. To what extent do you feel that educational television provides students with experiences that would not otherwise be possible?

_____ not at all

_____ some

_____ much

21. Have you ever been a student in a class that used educational television as an instructional medium?

_____ Yes

_____ No

22. To what extent did you participate in the decision that determined the use of educational television in your classroom?

_____ not at all

_____ some

_____ much

23. How do you usually prepare your students for viewing a televised lesson? Check more than one space if appropriate.

_____ review previous day's lesson

_____ utilize methods and materials provided by the broadcast source

_____ assign reading material related to the televised lesson

_____ administer diagnostic tests pertaining to the televised lesson

_____ other - please specify in as much detail as possible, using the back of this page if necessary.

_____

_____

_____

_____

_____

_____

_____

_____

_____

24. What kind of activities do you usually employ in following-up a televised lesson? Check more than one space if appropriate.

_____ discussion related to the televised lesson

_____ achievement test related to the televised lesson

_____ Use of methods and materials provided by the broadcast source

_____ other - please specify, in as much detail as possible, using the back of this page if necessary.

APPENDIX B

EDUCATIONAL TELEVISION STUDENT EXPERIENCE QUESTIONNAIRE ELEMENTARY

APPENDIX B

EDUCATIONAL TELEVISION STUDENT EXPERIENCE QUESTIONNAIRE

ELEMENTARY

We want to find out something about boys and girls who watch television in school.

Your class was chosen to help us in this project.

No one in your school will ever find out what your answers are. Your name and your answers will only be seen by scientists at The University of Michigan.

Please be very honest in answering the questions.

Thank you for your help.

INSTRUCTIONS

1. Read each statement carefully before answering.
2. Answer every question.
3. If you wish, write whatever you like next to your answer.
4. If you need help in answering a question, raise your hand.
5. Hand in this paper as soon as you are finished.

Please fill in the following blanks:

Your Name_____ Age_____

Your School_____ Grade_____

Subject of television class_____

Boy or girl_____ Teacher_____

Number of students in your television class_____

1. Do you have a television set in your home?

   _____ Yes

   _____ No

2. How much time each week do you watch television at home or outside school?

   _____ not at all

   _____ five hours or less

   _____ six hours to ten hours

   _____ eleven hours to fifteen hours

   _____ more than fifteen hours

3. Please list the outside-of-school clubs and activities that you belong to or take part in.

   _____

   _____

   _____

4. Please list the school clubs and activities that you belong to or take part in.

   _____

   _____

   _____

5. What kind of job would you like to have when you are through with your schooling?

_____

6. Do you plan to go to college when you finish high school?

Yes_____ No_____

7. How many years, including this year, have you had television classes?

_____ one year

_____ two years

_____ three years

_____ more than three years

8. List the five television programs that you like most. (Do not list school television programs).

_____ 1 _____ 2

_____ 3 _____ 4

_____ 5

9. Did you decide to be placed in your television class or was it decided for you?

_____ I decided

_____ it was decided for me

10. What things do you like most about your television class?

_____

_____

_____

_____

11. If you had television classes before this year, what did you like most about them?

12. What things do you like the least about your television class?

13. If you had television classes before this year, what did you like the least about them?

APPENDIX C

EDUCATIONAL TELEVISION TEACHER ATTITUDE INVENTORY

APPENDIX C

EDUCATIONAL TELEVISION TEACHER ATTITUDE INVENTORY

Introduction

Many teachers are using television instruction in conjunction with their class work this year. We would like to have your opinion relative to its advantages, uses, and/or limitations.

The success of this project is dependent upon the willingness of the respondents to participate and the frankness of their answers to the questions. Neither the individuals included in this study nor the institutions they represent will be identifiable in the published results.

Directions

This inventory consists of a number of statements designed to sample teacher opinions about educational television. There are no right or wrong answers. What is wanted is your own individual feeling about the statements. Read each statement and decide how YOU feel about it. Then circle the response that best represents YOUR opinion.

Please circle the response which best represents your opinion to the following statements.

If you strongly agree, circle "SA".....SA A U D SD

If you agree, circle "A".....SA A U D SD

If you are undecided or uncertain, circle "U".....SA A U D SD

If you disagree, circle "D".....SA A U D SD

If you strongly disagree, circle "SD".....SA A U D SD

Please complete the following blanks, giving all information requested.

Name_____ School_____

Age_____ Sex_____ Married_____ Single_____ Other_____

If married, number of children of your own_____

EDUCATIONAL TELEVISION ATTITUDE SCALE FOR TEACHERS

SA A U D SD 1. Educational television is designed to provide higher quality instruction in the classroom.

SA A U D SD 2. Educational television is effective for instructing large classes.

SA A U D SD 3. The classroom teacher becomes secondary to the TV teacher in classes utilizing educational television.

SA A U D SD 4. The classroom teacher's load (preparation, presentation, etc.) is reduced in classes using educational television.

SA A U D SD 5. Educational television is effective in providing for the wide range of individual differences of pupils.

SA A U D SD 6. Educational television tends to standardize school curricula.

SA A U D SD 7. Educational television seriously reduces personal relations between classroom teachers and pupils.

SA A U D SD 8. Educational television increases the tasks of the classroom teacher.

SA A U D SD 9. Educational television enhances the role of the classroom teacher.

SA A U D SD 10. Classroom teachers can readily adapt the classroom activity to the scheduled TV lesson.

SA A U D SD 11. Technical and mechanical problems of bringing educational television into the classroom are minimal.

SA A U D SD 12. Educational television lessons provide greater motivation than regular classroom lessons.

SA A U D SD 13. Educational television reduces the need for other teaching materials.

SA A U D SD 14. Discipline problems decrease in classrooms utilizing educational television.

SA A U D SD 15. Educational television classes are more entertaining than educational.

SA A U D SD 16. Educational television classes have better subject-matter content than conventional classes.

SA A U D SD 17. The attention span of pupils is insufficient for an entire television lesson.

SA A U D SD 18. Educational television reduces student participation in classroom activities.

SA A U D SD 19. Pupils in classrooms having educational television develop skills in communication to a greater extent than do pupils in regular classrooms.

SA A U D SD 20. Educational television improves study skills and habits of the pupils.

SA A U D SD 21. Educational television classes are better organized than conventional classes.

SA A U D SD 22. Educational television makes it possible for schools to offer courses not otherwise possible.

SA A U D SD 23. Attitudes of pupils toward learning are generally more favorable in classes where educational television is being utilized.

SA A U D SD 24. Students using educational television have a better understanding of the course objectives than do students not using educational television.

SA A U D SD 25. Attainment of objectives is facilitated in those classrooms using educational television.

SA A U D SD 26. Evaluation is less complex in classrooms using educational television.

SA A U D SD 27. Critical thinking and problems solving ability of the pupils is developed to a greater extent in TV classrooms than in conventional classrooms.

SA A U D SD 28. Retention of learning is improved through educational television.

SA A U D SD 29. Educational television results in a loss in teaching effectiveness by the classroom teacher.

SA A U D SD 30. Educational television results in a loss in the personal satisfaction the classroom teacher derives from teaching.

SA A U D SD 31. Classroom teachers plan and organize their lessons more effectively when they use educational television.

SA A U D SD 32. Educational television decreases the opportunity for discussion and clarification between students and the teacher.

SA A U D SD 33. TV classes are more valuable than regular classes for the student.

SA A U D SD 34. The classroom teacher can gain in teaching skills from observing the TV teacher.

SA A U D SD 35. Educational television provides little that could not be provided through films and other visuals.

SA A U D SD 36. Poor schools with poor teachers profit more from educational television rather than do good schools with good teachers.

SA A U D SD 37. Children see too much TV already.

SA A U D SD 38. Students feel that the TV teacher is more important than the regular classroom teacher.

SA A U D SD 39. Controversial issues can be effectively presented on educational television.

SA A U D SD 40. Educational television promotes the development of listening skills.

SA A U D SD 41. Educational television increases the utilization of other audio-visual aids by the classroom teacher.

SA A U D SD 42. A good lesson presented on educational television is more effective than the same lesson presented by the same teacher in a regular classroom.

APPENDIX D

EDUCATIONAL TELEVISION ATTITUDE SCALE
ELEMENTARY

APPENDIX D

DO NOT OPEN UNTIL TOLD TO DO SO

EDUCATIONAL TELEVISION ATTITUDE SCALE

ELEMENTARY

We would like to know how you feel about television classes. Please give your own opinion, not that of your classmates. No one in your school will ever find out what your answers are. Your name and your answers will only be seen by scientists at The University of Michigan. If you do not understand a statement or if you feel that you need some help raise your hand and your teacher will assist you. There are no right or wrong answers; just be honest and circle the answer that is the same as your feeling about television classes.

Thank you for your cooperation.

Please answer the questions in the following way:

If you strongly agree, circle "SA".....SA A U D SD

If you agree, circle "A".....SA A U D SD

If you are undecided or uncertain, circle "U".....SA A U D SD

If you disagree, circle "D".....SA A U D SD

If you strongly disagree, circle "SD".....SA A U D SD

Please fill in the following blanks:

Your Name_____ Age_____

Your School_____ Grade_____

Subject of Television class_____

Boy or girl_____ Teacher_____

Number of students in your television class_____

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EDUCATIONAL TELEVISION ATTITUDE SCALE

ELEMENTARY

Directions: Circle the response which is the same as your opinion.

SA A U D SD 1. I have better teaching in my TV classes than in some of my regular classes

SA A U D SD 2. I am able to understand better with TV than in our regular classes.

SA A U D SD 3. The TV lesson gives me more new ideas than my regular class.

SA A U D SD 4. More lesson materials are used in the TV class than in our regular classes.

SA A U D SD 5. My school can offer more subjects when it uses TV.

SA A U D SD 6. TV classes make me want to study and work more than I usually do.

SA A U D SD 7. I learn to study better when we use TV in our classrooms.

SA A U D SD 8. The regular classroom teacher is not needed as much in a classroom using TV teaching.

SA A U D SD 9. It is not as important to listen to the TV teacher as it is to our classroom teacher.

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SA A U D SD 10. If I have a question about the TV lesson, my regular teacher can help me with it.

SA A U D SD 11. TV lessons are not as interesting as regular classes.

SA A U D SD 12. The TV lesson is too hard for some students and too easy for others.

SA A U D SD 13. The TV lessons have too many facts for me to understand.

SA A U D SD 14. I enjoy having both a TV teacher and my regular teacher.

SA A U D SD 15. TV classes do not give us enough time to talk about interesting parts of the lesson.

SA A U D SD 16. TV classes cause students to ask many questions.

SA A U D SD 17. The children in my room like TV teaching.

SA A U D SD 18. Pupils pay less attention to the TV lessons than to their regular class lessons.

SA A U D SD 19. Some students misbehave in TV classes and prevent other students from hearing.

SA A U D SD 20. Pupils behave better during regular lessons than during the TV lessons.

SA A U D SD 21. Our work is more interesting when we have TV teaching in the classroom.

SA A U D SD 22. I learn more from watching TV than by looking at films or books.

SA A U D SD 23. I learn more from books than I do from TV lessons.

SA A U D SD 24. Classroom TV helps my regular teacher.

SA A U D SD 25. My teacher is a better teacher since we have used TV.

SA A U D SD 26. My teacher likes using the TV lessons.

APPENDIX E

KEY TO EDUCATIONAL TELEVISION ATTITUDE SCALE ELEMENTARY

APPENDIX E

EDUCATIONAL TELEVISION ATTITUDE SCALE (ETAS)

ELEMENTARY

KEY

1.	5	4	3	2	1	14.	5	4	3	2	1
2.	5	4	3	2	1	15.	1	2	3	4	5
3.	5	4	3	2	1	16.	5	4	3	2	1
4.	5	4	3	2	1	17.	5	4	3	2	1
5.	5	4	3	2	1	18.	1	2	3	4	5
6.	5	4	3	2	1	19.	1	2	3	4	5
7.	5	4	3	2	1	20.	1	2	3	4	5
8.	5	4	3	2	1	21.	5	4	3	2	1
9.	1	2	3	4	5	22.	5	4	3	2	1
10.	5	4	3	2	1	23.	1	2	3	4	5
11.	1	2	3	4	5	24.	5	4	3	2	1
12.	1	2	3	4	5	25.	5	4	3	2	1
13.	1	2	3	4	5	26.	5	4	3	2	1

APPENDIX F

KEY TO EDUCATIONAL TELEVISION TEACHER ATTITUDE INVENTORY

APPENDIX F

EDUCATIONAL TELEVISION TEACHER ATTITUDE INVENTORY (ETTAI)

KEY

1.	5	4	3	2	1
2.	5	4	3	2	1
3.	1	2	3	4	5
4.	5	4	3	2	1
5.	5	4	3	2	1
6.	1	2	3	4	5
7.	1	2	3	4	5
8.	1	2	3	4	5
9.	5	4	3	2	1
10.	5	4	3	2	1
11.	5	4	3	2	1
12.	5	4	3	2	1
13.	5	4	3	2	1
14.	5	4	3	2	1
15.	1	2	3	4	5
16.	5	4	3	2	1
17.	1	2	3	4	5
18.	1	2	3	4	5
19.	5	4	3	2	1
20.	5	4	3	2	1
21.	5	4	3	2	1
22.	5	4	3	2	1
23.	5	4	3	2	1
24.	5	4	3	2	1
25.	5	4	3	2	1
26.	5	4	3	2	1
27.	5	4	3	2	1
28.	5	4	3	2	1
29.	1	2	3	4	5
30.	1	2	3	4	5
31.	5	4	3	2	1
32.	1	2	3	4	5
33.	5	4	3	2	1
34.	5	4	3	2	1
35.	1	2	3	4	5
36.	5	4	3	2	1
37.	1	2	3	4	5
38.	1	2	3	4	5
39.	5	4	3	2	1
40.	5	4	3	2	1
41.	5	4	3	2	1
42.	5	4	3	2	1

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