

A COMPARISON OF THE EFFECTIVENESS OF INSTRUCTIONAL
TELEVISION IN OPEN AND TRADITIONAL CLASSROOMS

by

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
Television As a Medium of Instruction.....	1
Changing Patterns of Education.....	3
Open Education.....	5
Instructional Television in the Open Classroom....	8
Purpose of the Study.....	10
Treatment and Variables.....	10
Research Questions.....	11
Definition of Terms.....	11
Assumptions.....	12
Organization of the Study.....	13
II. A REVIEW OF RELATED LITERATURE.....	15
Review of Related Research.....	15
Research in Instructional Television.....	16
Research in Open Education.....	21
The Environment.....	27
III. METHODOLOGY AND DATA COLLECTION.....	30
Introduction.....	30
Subjects - Target Population.....	31
Subjects - Sample Population.....	31
Instrument.....	32
Collection of Data.....	33
Treatment Setting and Climate.....	35
Treatment of Data.....	36
Selection of Independent Variables.....	37
IV. ANALYSIS OF THE RESULTS.....	40
Introduction.....	40
Analysis of Variance.....	42
Density.....	42
Sex.....	46
Setting.....	51
Research Questions.....	55
Summary.....	66

Chapter	Page
V. SUMMARY AND CONCLUSIONS	69
Introduction	69
Conclusions	69
Suggestions for Further Research	73
General Summary	75
REFERENCES	78
APPENDICES	
Appendix A	84
Appendix B	114
Appendix C	122
Appendix D	124
Appendix E	126
Appendix F	128
VITA	131

LIST OF TABLES

Table		Page
4.1	Mean Scores on Three Instruments for Total Group and Subgroups	41
4.2	Analysis of Variance: Intelligence and Density .	43
4.3	Analysis of Variance: Reading Ability and Density	45
4.4	Analysis of Variance: Sex and Intelligence . . .	48
4.5	Analysis of Variance: Sex and Reading Ability .	50
4.6	Analysis of Variance: Setting and Intelligence .	52
4.7	Analysis of Variance: Setting and Reading Ability	54
4.8	Analysis of Covariance: Educational Setting with Intelligence and Reading Ability	56
4.9	Analysis of Variance: Television Recall by Setting and Density	58
4.10	Cell Means: Study Scores by Setting and Density	60
4.11	Analysis of Variance: Television Recall by Setting and Ability	63
4.12	Analysis of Variance: Television Recall by Setting and Sex	65
4.13	Summary of Analyses Performed and Their Signi- ficance	68

CHAPTER I

INTRODUCTION

Television As a Medium of Instruction

Television was first used for formal instruction in 1953. According to Educational Facilities Laboratory (1960), by 1960 half a million students in the United States were receiving instruction by television, and according to the Maryland State Department of Education (1975), by 1974 a similar number were receiving instruction by television in the State of Maryland alone. This tremendous growth has occurred despite some educator resistance and concerns about equipment costs, because it quickly became evident that children can learn from television.

The advantage of televised instruction, according to Dwyer (1972) was that "...visualization of content material" is said to be able to:

1. Facilitate the accuracy and standardization of the message being communicated;
2. Bring into the classroom inaccessible processes, events, situations, materials, and phase changes in either space or time;
3. Illustrate, clarify, and reinforce oral and printed communication, quantitative relationships, specific details, abstract concepts, and spatial relationships;
4. Provide concreteness (realistic detail) in the learning situation;
5. Increase student interest, curiosity, and concentration;
6. Present to the learner the opportunity to perceive

an object, process, or situation from a variety of vantage points;

7. Provide important instructional feedback."

It could be said that the type of visualization present in films and other media could provide the same capabilities. Why, then, has television become the outstanding medium in technological instruction? According to Educational Facilities Laboratories (1960):

"Of audio-visual tools available, television appears to offer the broadest potential. The teaching image is easily transmissible by air and cable. It is reproducible from magnetic tape. It is viewable at relatively high ambient light levels without the need for darkening a room. It permits viewing of current events concurrently with the occasion. Taped programs, entire courses or laboratory demonstrations may be banked in libraries for use as required.... The viewing and audio instrument itself is relatively inexpensive, easily used, widely available and easily maintained."

Television, then, has emerged as the leading instructional medium of technology. The question of learning from television has also been extensively addressed. Hoban (1961) has stated:

"For approximately forty years, research has produced empirical evidence to support the popular truism that children, adolescents, and adults do learn from motion pictures, still pictures, and other forms of pictorial representation."

And in the most definitive source on the subject, Chu and Shramm (1968) have stated:

"There can no longer be any real doubt that children and adults learn a great amount from instructional television..."

It would certainly seem safe to assume that television

is an effective medium for instruction and that it will continue to be used in American schools.

Changing Patterns of Education

Education in the United States has never been easily described as fitting a particular pattern. Trends have emerged and died at regular intervals and conflicts and differences of opinion have always been evident. Historically, Americans have been torn between two philosophies which, among others, have affected educational practices.

Borrowman (1974) has said:

"America today has been endowed with both Hebraic-Puritan and the Hellenic-romantic attitudes and their modified off-spring, each vying to exert its influence on the schools. It is no wonder that our schools reflect the conflict of values mirrored in our many and various communities."

Periodically, one of the philosophies will rise up and become the controlling emphasis of American education. The advent of instructional television occurred during a period when the Hebraic-Puritan tradition ruled supreme and cognitive concerns molded educational practice. Sputnik and the recession permitted little concern for beauty and romanticism. Television fit well in a time of emerging technology and standardization of instructional practices.

Gradually, however, the emphasis has seemed to resolve back to a more humanistic design. This change can be observed in terms of instructional practices, curriculum materials, and even the physical plants of educational institutions.

It is the physical plant change which is most observable and most easily measured. Brunetti (1971) has observed that a national survey conducted from 1967 to 1969 revealed that 54 percent of American elementary schools were designed according to the "open" concept and 46 percent were "conventional" in design. By 1971, however, the School Architecture Exhibit at the American Association of School Architects convention contained 91 percent of designs of an open nature, and 9 percent which were conventional. Brunetti has explained the phenomenon this way:

"Attempts to rearrange the interior space of the school building into other than standard size classrooms have come about during a period in which theory and practice in both education and architecture have changed. Most open space schools have been planned on the basis of new requirements brought about by new curriculum materials, and equipment, new student and staffing organizations, and new time allotments for instruction and planning."

Presumably, the dramatic increase in the number of open schools reflected an increase in the commitment to open education. Much has been said about open schools and one precise explanation of the relationship between the architecture and the philosophy has been provided by Smith (1974).

"The primary function of the open classroom is to provide an environment that will enhance the development of values and attitudes. The curriculum should not be a formal one emphasizing mastery of subject matter as an end in itself; rather, it should emphasize the development of the child and take into consideration his interests, abilities and experiences. The subject matter should be presented in such a way as to help him grasp its functional value in relation to the problems of everyday living with which he is confronted."

The emphasis on values and attitudes indicated the dominance of the Hellenic-romantic tradition in the philosophy of open education. The previously mentioned conflict of traditions, however, has not been eradicated. A manifestation of the Hebraic-Puritan tradition has been gaining favor under such names as accountability, behavioral objectives, and Program Planning and Budgeting Systems (PPBS). Neither trend is likely to be totally extinguished in the near future, so it would appear that the two should be made more compatible.

Most of the efforts at incorporating accountability in open education have focused on the modification of the open school curriculum. Humanism has remained the primary concern, but concessions have been made in the area of cognitive learning. Many educators espousing open education have ceased contesting the teaching of content and instead have focused on improving the method by which content is taught. "Individualization" has become the password of the humanists. Most humanists would agree that individualization could be defined as teaching the child without the aura of competition and failure which has been so often evident in group instruction.

Open Education

The progeny of this marriage between open education and accountability has been the "semi-open" school, or the open

concept school which teaches content, but not as content has been traditionally taught. Brunetti has described the differences between open and self-contained classrooms in terms of time spent in various activities and grouping patterns.

An examination of Brunetti's data indicated vast differences in the types of activities occurring in open and self-contained classrooms. Waiting and listening, for example, accounted for 43 percent of the time in self-contained spaces and 28 percent in open spaces. Also, 76 percent of time in self-contained classrooms was taken up with large group activities, while 49 percent of the time in open space classrooms was used for large group instruction.

Many other authors have also described the differences between open schools and traditional schools, utilizing various criteria. Much of the literature has been concerned with open education rather than open space schools, but the only difference utilized in this study is the difference in architecture. Even so, the architecture, or environment, can perhaps, affect the instructional program as indicated by many of the studies in Chapter II. Yet, as Armstrong (1975) stated:

"The impacts of open space school environment and traditional self-contained classroom environments on both teachers and pupils have only begun to come to light as a result of research undertaken to the present time."

Research has been done on the attitudinal factors relative to open versus traditional education, but little has been done

on the effectiveness of content instruction in the open school environment as compared to the traditional or self-contained environment. Katz (1971) has stated:

"...a body of evidence that open-informal education is effective is not available, and is not among the many causes of the spreading enthusiasm. While reliable evidence of positive outcomes of the method is not available, nor is there as yet any counter evidence."

Other studies discussed in Chapter II claimed no significant difference in gains between students in open schools and those in conventional schools on various measures of academic achievement. The findings would seem to indicate that open settings do not inhibit learning, but virtually nothing has been said about the effectiveness of various teaching methods in open and traditional schools. Tickton (1971) has said:

"...despite recent progress in education research and development, educators still have few reliable, validated guidelines for choosing one instructional medium over another."

This lack of conclusive evidence about teaching methods has resulted in a particular problem as related to television and other technological media. Green (1970) has stated:

"From my observations and investigations there are some very real influences that instructional technology is having on the physical form of the schoolhouse. These are readily apparent and fairly well refined. I also observed some conflicts where school buildings have failed to respond appropriately, if at all, to instructional technology, or have not anticipated its use."

Instructional Television in the Open Classroom

Instructional television has been left in a state of limbo as the concept of open education has developed. The effectiveness of television as an instructional device has been amply indicated, but not in the context of the open school. The future of television in the open school is not really in doubt, as Burdin (1974) stated:

"In American education there will always be an interest in 'hardware'. Therefore, there needs to be a continuing development of effective use of media. This kind of training can be put into performance-based self-instructional modules. The use of media can become an important part of the open schools, for media offers the individual learner an opportunity to transcend the barriers of time and distance."

It is the value of instructional television in the open classroom that needs to be determined. Can instructional television, which was developed in a "less-humanistic" era, be as fully utilized in an educational setting which does not stress transmission of knowledge? Can students who are becoming "self-directed" still act in a receptor role? Does the open classroom environment permit both the audial and visual attention necessary for the successful use of instructional television? Is there a relationship between learning from television in a particular environment and some other factor, such as sex, intelligence, reading ability, or population density of the school attendance area?

The questions can be approached in the context of the classroom setting. Can the same television lesson be used

as effectively in open classrooms as conventional classrooms? Since the claims for the effectiveness of televised instruction have been primarily in the cognitive domain, the issue must be content mastery -- in effect, how much information can students absorb during a twenty-minute telelesson as indicated by a task involving immediate recollection?

If the environment and previous experiences of the open classroom have no effect on student learning, there should be no difference in the amount of material recalled by students from open classrooms and those from conventional classrooms, assuming any differences among the students are taken into consideration.

Such a finding would be encouraging to many groups, most notably:

1. Educators, who could continue to depend upon television for content instruction without needing to be concerned about the validity of research studies which did not include open classroom subjects;
2. Instructional television production agencies, which could continue to produce telelessons based upon earlier research;
3. School architects and designers who could be reinforced as to the desirability of designing open schools which can utilize instructional television.

If there were any indications that the environment and previous experiences of the open classroom did have an effect on students' learning from television, a new area of research and resource allocation would be made available.

Purpose of the Study

The purpose of this study was to determine the effectiveness of television as an instructional device in open schools as compared to traditional schools. This comparison was based on the ability of the students in both situations to recall factual information presented in a taped television lesson and indicated by means of written response on a twenty question, multiple choice instrument. Comparisons were also made based on the students' sex, intelligence, reading ability, and type of school system attended (urban, rural or suburban). The reasons for focusing on these particular factors were discussed in Chapter III. Finally, the study was designed to yield indicators of the effectiveness of television as an instrument for transmitting information in open classroom situations.

Treatment and Variables

For the purposes of this study the treatment consisted of viewing the instructional device; a twenty-minute, professionally produced telelesson on three-quarter inch video cassette format. The general subject matter of the telelesson was reading, and the telelesson was subjected to informal content validation by the Maryland State Department of Education, Division of Instructional Television. A complete script of the telelesson has been attached to this study as Appendix A.

The dependent variable consisted of student recall after viewing the telelesson as indicated by written responses on one of the two forms of the instrument constructed for this purpose. Both forms of the instrument have been attached to this study as Appendix B.

The independent variables were the other factors mentioned above and discussed in Chapter III. Those factors were setting, density, sex, intelligence, and reading.

Research Questions

The following represent the research questions for this study:

1. Did the educational setting have any effect on students' ability to recall televised information?
2. Was either type of educational setting superior for facilitating students' ability to recall televised information in urban areas, or suburban areas, or rural areas?
3. Was either type of educational setting superior for facilitating students' ability to recall televised information for students with high ability, or average ability, or low ability?
4. Was either type of educational setting superior for facilitating students' ability to recall televised information for female students, or male students?

Definition of Terms

The definitions of the major terms used in this study are as follows:

1. Instructional Television - A medium of classroom

instruction consisting of visual and auditory stimuli transmitted by means of a television, whether broadcast or played by means of a cable or recording unit.

2. Teleleson - A single unit or lesson from a planned and recorded instructional television series which is in itself a complete instructional experience.
3. Traditional or Conventional or Self-Contained Education - An educational program in which a majority of the planned instruction occurs within a physical setting designed for one teacher and a group of students approximating a normal class (20 to 40 students).
4. Open or Innovative, or Non-traditional Education - An educational program in which a majority of the planned instruction occurs in physical settings originally designed, or remodeled, for irregular size instruction, including groups larger than normal classes (over 40).
5. Learning - The degree to which students are able to recall specific information presented within the teleleson.

Other terms employed in this study have been defined within the context in which they are being used.

Assumptions

The primary assumption of this study was that there are basic and substantial differences in educational programs occurring in differing architectural settings. These differences may be planned, based on a particular philosophy; or accidental due to limitations of space, noise level, teacher attitude, or other factors.

A second assumption was that all students in Maryland schools are aware of, and have been exposed to television to a similar degree, and will be equally involved in the study permitting the possible effects of novelty to be disregarded.

It was also assumed that the particular telelesson employed in this study is typical of, and comparable to, all other instructional television telelessons, and conclusions based on this study can be generalized for all professionally produced instructional television series.

Organization of the Study

This study has been divided into five chapters. This initial chapter served as an introduction to the topic and problem to be studied.

Chapter II is a review of related literature. This chapter discusses studies relative to the effectiveness of instructional television and the effectiveness of open education.

Chapter III describes the method by which data were gathered and treated for the purpose of determining outcomes.

Chapter IV contains an analysis of the data. Necessary charts and graphs are included to illustrate the most significant findings.

The final chapter draws conclusions from the analysis of the data and suggests both limitations of this study and related research topics.

This study has not been designed to influence what is happening in education, so far as the trend towards open education is concerned. The utilization of instructional technology

and the development of more humane educational environments are not in opposition to one another. As Marshal McLuhan (1968) has said:

"To go on building 19th century spaces for the storing and dissemination of classified information is perfectly natural. It is also fatal."

Neither has this study been designed to favor instructional television. Objectivity must always be retained, and a statement by Tickton (1971) summed up the spirit of this study:

"Since the heart of education is the student learning, the value of any technology must be measured by its ability to facilitate learning."

CHAPTER II

A REVIEW OF RELATED LITERATURE

Review of Related Research

Reviewing relevant research in both instructional television and open education was in itself a study of contrast. Gordon (1970) stated: "There has been too much Instructional Television research and most of it is lost in sheer glut". As of 1970, these words were most certainly true. Literally hundreds of studies were conducted from the 1930's through the 1960's, and very little of consequence has been done since. Open education, on the other hand, did not become a popular topic in education until Charles Silberman began addressing it in 1970.

This contrast can be further illustrated by comparing Katz's previously mentioned statement from 1971 that " . . . a body of evidence that open-informal education is effective is not available . . ." To Armsey and Dahl's claim in 1973 that "most of the research reports in the literature (of instructional technology) deal with television; and most of the data on which they are based are at least six years old".

An even more current comment was made by Moldstad (1974) writing as the editor of a major journal. He explained the lack of research abstracts in the journal this way:

"There appears to me to be a gradual but consistent decrease in the amount of actual research being channeled through the ERIC Clearinghouse..."

The two fields can also be contrasted in terms of the nature of the research which has been done in each. Research in instructional television has placed a great deal of emphasis on achievement and cognitive processes. Research in open education has, to a great extent, focused on attitudinal factors and affective processes.

Research in Instructional Television

The recent lack of research in instructional television may be due in part to an extremely comprehensive publication entitled Learning from Television: What the Research Says by Chu and Schramm (1968). The authors stated:

"We have recently reviewed, up to 1966, 207 published studies in which television teaching has been compared with conventional teaching. Of the 421 separate comparisons made in these studies, 308 showed no significant differences, 63 showed television to be superior, and 50 found conventional instruction better."

Among Chu and Schramm's conclusions were the following:

1. Given favorable conditions, children learn efficiently from instructional television.
2. By and large, instructional television can more easily be used effectively for primary and secondary school students than for college students.
3. So far as we can tell from present evidence, television can be used efficiently to teach any subject matter where one-way communication will contribute to learning.
4. Whether a television program is used to begin or to end a daily lesson by the classroom teacher makes no difference in learning.

5. Noise will reduce the effectiveness of learning from film and television so far as part of the learning comes from auditory medium.
6. Instructional television appears to be equally effective with small and large viewing groups.
7. Note-taking while viewing instructional television is likely to interfere with learning if time for it is not provided in the telecast.
8. Teachers and pupils are more favorable toward the use of instructional television in elementary school than in secondary school and college.

Two other studies of the research were compiled by Allen and Schramm, writing independently. Allen (1960) reviewed 44 studies and declared:

"Teaching by television is effective at all levels of instruction, from elementary school to military training. In very few cases has TV instruction been found to be inferior to conventional instruction, and, in many cases, TV was significantly more effective."

Schramm (1962) reviewed 393 studies and reported that 255 showed no significant differences, 83 favored televised teaching and 55 favored conventional teaching. These three reviews were impressive, if only in terms of numbers. Collectively they included over 600 studies in which a vast majority supported the contention that television can be an effective means of instruction. Unfortunately, the appropriateness of these studies can only be ascertained from the secondary source, and even if the reviewers' judgments can be accepted, many of the studies were dated beyond use. For example, studies conducted prior to 1960 were certainly suspect due to the novelty of television at that time, and the primitive state of instructional tele-

vision production. Even studies conducted during the 1960's should be viewed cautiously and selectively.

Among the most significant studies done during the pre-1970 era were those by Kelley, Pflieger and Kelley, and Wade. Kelley (1964) made more than three hundred matched achievement test comparisons involving the four basic areas of instruction (English, mathematics, science and social studies). Twenty-five percent of these comparisons revealed significantly higher achievement scores by the groups utilizing television. Kelley's study began in 1956 and lasted over five years. In Kelley's study, as in many others, television was compared to "conventional" instruction, which, unfortunately, seemed to include everything except television. This raised problems the early researchers could not foretell. For example, some studies indicated that television and film were identical in terms of instructional value. Could not some of Kelley's control group have received instruction by film? It is unlikely that stricter control would have drastically changed the results, but the comparisons would certainly have been more consistent.

Pflieger and Kelley (1961) recorded the results of a nation-wide study involving 200,000 students from 800 schools. Most comparisons indicated no significant difference in achievement between those utilizing television and those receiving conventional instruction, but 110 were

significant in favor of the groups utilizing television, while 44 were significant in favor of conventionally taught groups. There was little reason to believe that there was any degree of similarity among the 800 schools and their instructional programs, although such a huge sample would enable the researchers to assume some comparability. Unfortunately, the size of the sample also raised questions about the findings. Could any single factor dominate instruction in 200,000 loosely controlled settings?

Wade (1967) studied Washington County, Maryland schools and found that following the initiation of televised instruction, Washington County students who had been averaging half a grade below the national norm (as measured by the Iowa Test of Basic Skills) exceeded national norms within two years. It is possible, as Wade suggested, that television was the primary cause of this improvement. Certainly there were no other changes as dramatic taking place within the school system. It would be difficult, however, to discount the effects of novelty in this instance. Washington County schools received a great deal of attention during this period in the form of national publicity, and since this initial surge, there have been no gains so startling.

One more recent study deserved mention. Ingle and others (1973) studied the application of Instructional Television in El Salvador, and based on achievement test data

for 1,771 students, found that general ability and reading scores increased for all subjects, with little difference evident between the groups receiving televised instruction and those receiving conventional instruction. The researchers themselves, however, point out many factors which could have influenced their results. The instructional television program moved into new facilities and native personnel assumed responsibility for operations. Also, a new behavioral approach was introduced and both teachers and students began the year with a great deal of enthusiasm. Also, it would be difficult to determine the significance of this study for American audiences unless cultural differences were defined.

The above studies would seem to adequately support the contention that elementary students do learn from instructional television, or at least did learn from television in the educational settings of the 1950's and 1960's. However, none of the studies reviewed were conducted in architecturally informal or open situations. Very few, in fact, were conducted during the period of changing philosophical emphasis which brought about open education and open concept schools. These shortcomings do not call forth a concern for the validity of these studies, but question the applicability for them in open schools.

Research in Open Education

Aside from the previously mentioned difficulties concerning open education (newness and affective emphasis), there has been a tremendous problem in developing a precise definition of open education. Hearn and others (1974) have stated:

"There are almost as many definitions of the open-informal classroom as there are classrooms."

A great deal of the research in open education has been done to define it, rather than evaluate its effectiveness. In spite of this, there has been no universally accepted definition of open education and Spodek (1970) has even said, "Perhaps...openness, like freedom, cannot be defined absolutely."

Because of the confusion over what constitutes open education, this study has considered open schools as schools constructed in a non-conventional manner. That is, schools which were not constructed as units of self-contained classrooms, each designed for one teacher and a single group of students. This also held true for the studies reviewed; architecture was often the only characteristic common to all.

The primary claim of the proponents of open education has been that students develop a healthier self-concept in open situations than in conventional classrooms. Helmgartner (1972) supported this contention after studying 216 children

from both settings. Others, including Ruedi and West (1974) found no basis for accepting this claim. Many other studies took various (and sometimes conflicting) positions on matters of attitude, perception, and value development. Unfortunately, very few of these studies were both soundly designed and carried out objectively. The Ruedi and West study, for instance, involved only 24 students in three different grades. The Helmgartner study was more rigorous, but the author was obviously an advocate of open education with a great deal of initial bias.

The more relevant issue of achievement in various content areas has not been so widely addressed. Prior to common adoption of the phrase "open education", Riches (1969) examined the differences in achievement in science, reading, writing, and social studies between students in contained classrooms and those in team-teaching situations. He found no significant differences in any of the content areas. It is impossible to equate a teaching method with design or program based on design, but team-teaching has been a common element in many open classrooms.

Walker (1972) compared 85 students in the first, second, and third grades of an open school with randomly matched students from a traditional school. A pre-test indicated that the groups were not statistically different and the Metropolitan Achievement Test battery was used as the post-test instrument. The author concluded that there

were no differences in achievement between the two groups at the .05 level of confidence. Comparing students in two schools can be informative for a district attempting to determine the most appropriate instructional program for a relatively homogenous group of students, but it would be difficult to generalize Walker's findings beyond the setting of the study. Of course a great number of studies of this type could begin to indicate universal significance.

A Broward County, Florida study (1972) also compared achievement in innovative and traditional schools. The authors employed the California Test of Basic Skills and the California Test of Mental Maturity. The data were analyzed in terms of grade, sex, and race. At the fifth-year level, the results for white boys favored traditional schools, and the results for white girls showed slightly better results for innovative schools. Black students of both sexes showed somewhat better scores for traditional schools. Results for third year students were somewhat more favorable towards innovative schools. These were hardly convincing results, as far as indicating trends. One reason for this may be the emphasis on race, sex, and grade level, within the overall question. Nowhere in the study was there a rationale for the variables used. Also the authors employed the .05 level in determining significance, resulting in some rather minor differences

being reported as significant.

Another extensive study was carried out by Hill (1973) who compared 280 intermediate students in open concept schools with 322 in traditional schools. The Stanford Achievement Test, form W, revealed no initial differences between the groups. The Stanford Achievement Test Primary II Battery, Intermediate I Battery, and Intermediate II Battery, form X were used to collect final data which were then tested at the .05 confidence level. The author found that for grade three, arithmetic computation favored conventional schools. There were no differences in other areas. In grade four, word meaning, arithmetic concepts, and arithmetic applications favored open schools. There were no differences in other areas. In grade five, arithmetic computation and arithmetic applications favored open schools. There were no differences in other areas. In grade six there were no differences in achievement between the groups. The results of this study were somewhat contradictory. Arithmetic related subtests favored conventional schools in grade three, and open schools in grades four and five. The only subtest outside those dealing with arithmetic for which a difference was found, was word meaning, which favored open schools at one grade level. The study seemed to have been well planned, but it would be impossible to discern any meaningful differences between open and traditional schools from the data reported.

Scheirer (1972) tested 1,163 children from open and traditional schools using the Stanford Achievement Tests. The author utilized covariance methods to control for intelligence and parental socio-economic status and found no significant difference in achievement between the groups. Scheirer's inappropriate use of covariance, as described by Evans and Anastasio (1968) negated the final findings of this study.

Crandall (1973) also did a study on achievement comparing open and traditional schools. It would, however, be difficult to interpret her study in any meaningful way since she tested students who had been taught in radically different ways. She concluded that there is little evidence that first grade children who learn to read in open concept classes using an individualized language experience approach do less well than children instructed in basal series in more formal classes.

Other studies involving a comparison of achievement between students in open and traditional schools include one conducted by Earhart (1973) who tested over 500 eighth grade students and found little or no significant difference in the achievement of the student groups. Unfortunately, no real control was exercised in the study. Schnee (1975) stated that data from Oklahoma City indicate that the open school concept improved elementary reading achievement scores significantly. Schnee, however, merely examined already

existent data. Sanders (1975) echoed this claim, again studying existing data, finding that students in open schools did at least as well as those in traditional schools in measured cognitive achievement, and that student achievement in the open classroom improved dramatically over that of traditional classes in a long-term evaluation. MacDonald and Wuster (1974) on the other hand, found that organizational plans such as those found in non-graded schools did not affect reading achievement. It must be mentioned that the subjects for this study represented only one school.

Epstein and McPartland (1975) performed an extensive study in Howard County, Maryland, schools to examine the effect of open school attendance on academic achievement and elements of social and personal development. They were unable to discover a consistent pattern of achievement across the four grades tested. They were able to discover indications that social development factors favored open schools. It is doubtful, however, that Howard County, Maryland, is typical of most school districts in the United States.

Many other studies, such as Killough (1971) and Gerhardt and Pool (1974) showed modest differences in academic achievement favoring open schools over traditional schools, and many similar studies, such as those by Moodie (1971) and Reid (1972) showed the same kinds of differences in

favor of traditional schools. None of the studies available for review, however, contained all of the elements necessary to establish a comparison of learning based on differences in architecture. There is still a great need for studies involving large, varied populations, over a long period of time, which have adequate control over the many likely variables. Those studies reviewed here, however, would seem to give substance, if somewhat premature, to the claim that students in open schools can learn as well as those in traditional schools.

The Environment

The conclusion that students in open schools can learn as well as those in traditional schools is of value only to the extent that the school environment affects learning. Few educators would argue with the premise that the physical setting affects human response within that setting, or as Propst (1972) stated, "...learning and growth are deeply affected by the environment in which they take place." The points of concern in this study were those environmental factors likely to differ between open and traditional classrooms.

Open classrooms, by definition, lack the internal barriers present in, or between traditional classrooms. This would normally indicate that the student would be within sight and hearing range of greater numbers of people,

activities, objects, and other stimuli. Those stimuli which did not constitute a part of the immediate intended learning experiences would be distractions. Berlyne (1950) found that the more intense of two stimuli will, other things be equal, be more likely to receive attention. And Williams, Paul and Ogilvie (1957) indicated that environmental distractions did cause a significant interference in learning.

On the subject of noise alone, Brodbent (1958) concluded that noise should be interpreted as a constant but low rate of information being presented at ear which requires some periodic attention. There is no conclusive evidence that noise levels are higher in open classrooms, but there is reason to expect noise to come from a greater number of sources, as previously mentioned. It is also interesting to note that virtually every survey presently available has found that teachers and students perceive noise to be a problem in open classrooms. Most notable among these were Sugden (1973) and Moodie (1971).

Many other environmental differences could exist between open and traditional classrooms. Such things as furniture, temperature and air control, degree of movement, color, and lighting might well differ between open and traditional classrooms, but none of these is so much a certainty as the presence of extraneous audial and visual stimuli.

The studies reviewed above would seem to support the conclusion that school environments affect learning. It would also seem likely that open and traditional schools would have different environments.

CHAPTER III

METHODOLOGY AND DATA COLLECTION

Introduction

The methodology employed in this study, differed greatly from the approach usually employed in studies involving instructional television. The "usual" approach has been described as follows by Frederick Breitenfeld, Jr. (1970):

"The research done by graduate students, psychologists, government agencies, and teachers continues to abound with much the same design. One group is taught through television, and another group is taught by what are somehow called 'traditional' methods. There are variations, to be sure, but the same basic research has been done hundreds of times, with various peripheral questions shifted to become paramount. We continue to set up controlled circumstances and then to measure, however crudely, which lens, which graphics and which program formats 'teach' more than others."

This study did not compare two teaching methods in similar settings, but one teaching method in different settings. The effectiveness of the teaching method (television) was determined on the basis of learning as stated in the definitions, and further defined by Gagne' (1965):

"Learning is a change in human disposition or capacity, which can be retained, and which is not simply ascribable to the process of growth."

It was not a simple matter to restrict learning to a single cognitive aspect, i.e. recall. Advocates of open space education make more claims for success in affective areas. Bloom (1963), however, stated:

"While it may or may not be true that the most important changes in the learner are those which may be described as cognitive, i.e. knowledge, problem-solving, higher mental processes, etc., it is true that these are the types of changes in students which most teachers do seek to bring about."

A precedent for basing the study on architectural differences was provided by Fisher (1974) and the use of non-standardized assessment instruments was supported by Wickens (1973) for use in open classrooms.

Subjects - Target Population

The target population for this study consisted of all fifth year students in the state of Maryland. Those students in open schools constituted the experimental group while students in traditional schools constituted the control group.

The total target population was comprised of approximately 68,745 students in 935 Maryland schools (Maryland State Department of Education, 1975).

Subjects - Sample Population

The number of students and distance involved made it impractical to include the entire target population in the study. In order to secure a representative, yet manageable

sample, cluster sampling was employed. The 24 local school districts in Maryland were stratified into three categories; urban, suburban, and rural. Urban districts were those encompassing incorporated cities of over 50,000 persons, suburban districts were those immediately adjacent to urban areas, and all others were rural. Districts were chosen at random from each category by the appropriate persons from the Maryland State Department of Education. Each district was then asked to recommend an open school containing fifth year students and a comparable traditional school. Within each of these schools, classes were chosen at random to arrive at the seventy students involved in the study from each of the six schools.

Consequently, the sample open group was comprised of at least 210 fifth year, open school students representing urban, suburban and rural school districts. The sample traditional group was comprised of at least 210 fifth year, traditional school students representing the same school districts as the open group.

Instrument

The instrument utilized in this study was a twenty-question multiple choice test. Two forms (A and B) were constructed from a pool of items. Computation of a measure of reliability (Hoyt's formula for the Kuder-Richardson coefficient) for the scores of thirty students resulted in a reliability coefficient of .718. Bruning and Kintz (1968), writing about this procedure stated:

"...a high value would mean that the test items were homogeneous and, therefore, valid."

Probable validity of the instrument was attested to by a panel of educational practitioners experienced in working with fifth year students, and familiar with the telelesson.

Collection of Data

The completed instruments, with the individual students' names attached, were given to the schools in order to obtain the appropriate reading achievement subtest score from the Iowa Test of Basic Skills and the Intelligence Quotient (Standard Age Score) from the Cognitive Abilities Test. After adding these two measures the school removed the students' names to insure anonymity.

The rationale for using these particular test scores was presented in the Maryland Accountability Program Report: School Year 1973-1974 (1975). The availability of the data was due to the Maryland Accountability Program.

Nature and Application of the Treatment

The treatment consisted of requiring each group to view the reading lesson titled "Who Am I?" in their normal instructional setting. The directions given to the students were read, and no effort was made to adopt the instructional area for viewing. The directions have been presented as Appendix D. The classroom teachers were discouraged from amplifying the directions or modifying

the instructional environment for the experiment.

"Who Am I?" is lesson number one in Once Upon A Town, an instructional television series in reading designed and produced for intermediate level students, including fifth year students. "Who Am I?" has been piloted in selected classrooms (not included in this study) and accepted as appropriate for classroom instruction at the intermediate level. This collected information is presented as Appendix E.

The actual viewing time was eighteen minutes and fifty seconds for each group. Students were permitted to take up to 20 minutes to respond to the questions. All discussion and conversation were discouraged during viewing. All of this activity occurred during normal instructional times, but none occurred before 9:00 a.m. or after 2:00 p.m., or within 20 minutes of the beginning or end of the students' lunch period.

All teachers and principals involved in the study were briefed about the study and asked to volunteer their support. If any had expressed grave reservations about the study, they would have been exempted and substitute schools or classes found.

The entire process took approximately fifty minutes for each viewing group; however, the students were permitted to ask questions before viewing the lesson, which lengthened the total time in some instances.

Treatment Setting and Climate

The open school in the urban setting was a large, very modern building, operated on a somewhat conventional basis. Each student was assigned to a teacher and a particular instructional area. A large area was set aside for viewing activities and the students assembled in an orderly fashion, staying with their classmates. The physical conditions for viewing were adequate, and the students appeared attentive and interested.

The traditional school in the urban setting was a large, modern building in excellent repair. All classes visited were restrained and polite. Each classroom had the desks arranged in straight rows, and the physical conditions for viewing were very good.

The open school in the suburban setting was a medium size "pod" type structure. Students were assigned to a pod and moved between groups within the pod. Some difficulty was experienced in directing all of the students' attention at a single activity, and the physical setting made it difficult to place every student in an adequate position for viewing the telelesson. A great deal of movement occurred during the viewing.

The traditional school in the suburban setting was a very modern building housing a program which involved a great deal of movement by groups of students. Much of

the instruction involved homogeneous grouping. Each classroom visited was well-arranged for viewing activities and the students were very polite and appeared interested in the activity.

The open school in the rural setting was an old building which had recently been renovated into an open school. The open area visited was extremely large, serving about 200 children within sight of one another. The fifth-year students seemed quite excited about the activity and easily arranged themselves for viewing. All students were well situated for viewing but many had difficulty attending to the task.

The traditional school in the rural setting was an extremely old building, in need of much repair. All viewing activities occurred in unattractive rooms, with the students seated at tables. Viewing conditions were adequate and the students were, for the most part, quite attentive.

Treatment of Data

Since students in the open and traditional groups were not completely randomly assigned, it is quite possible that they might have systematically differed from one another. Because of this, it was necessary to determine the initial differences between subjects in the open and traditional groups. This was achieved by means of a comparison based on reading achievement subtest scores and intelligence measures.

The same initial differences were likely to exist among students from urban, suburban, and rural settings. A similar comparison was made to determine these differences. The same factors (reading achievement subtest scores and intelligence measures) were used.

The same initial differences were likely to exist between males and females. A similar comparison was made to determine these differences. Again, reading and intelligence measures were employed to statistically determine these differences.

The students' scores on the study instrument were analyzed by means of three, two-way analyses of variance. The factors considered in these analyses were:

First: Sex (Male or Female) in relation to the setting
(Open and Traditional)

Second: Intelligence (Cognitive Abilities Test SAS)
in relation to the setting

Third: School District Classification (Urban, Rural
or Suburban) in relation to the setting.

The dependent variable was retained in each treatment and the significance of difference was determined in each analyses. Analysis of Covariance was employed to further examine the relationship between scores on the study instrument and the setting. The intelligence and reading ability measures were employed as covariates.

Selection of Independent Variables

The selection of independent variables employed in this study was based on the following:

1. Factors likely to influence a student's ability to recall televised information, or
2. Factors about which information was available or able to be ascertained, or
3. Factors traditionally considered as important in educational studies.

Naturally, it would have been best to include every possible factor as a variable, but some choices had to be made. The question of attitudinal factors, for instance, although addressed briefly in Appendix F, could easily comprise an entire study, or it could be considered as a function of the architectural setting as mentioned in Chapter II. A similar case could be made for the exclusion of socio-economic status (SES). Ascertaining this information would have been, at the very least, difficult, and might be considered unnecessary in light of findings indicating the high correlation between SES and other factors identified in this study. This has been supported by Green and Rohwer (1971) and Jensen (1973).

The selection of sex as a variable was based on many factors, including Asher and Murkell's (1974) statement that significant differences in reading ability are evident between boys and girls at the elementary level. Also, Reilly (1971) and Jorgensen and Hyde (1974) supported Jensen's (1975) statement that " . . . girls and women perform less well than boys and men in tests of the spatial factor."

Intelligence was chosen as a variable not only be-

cause of its availability and traditional use, but also because of its proven relationship to performance as shown by University of the State of New York (1973) which indicated that student IQ was found to be significantly related to student performance in 96 percent of all the studies (28) in which its effect was tested.

The rationale for the selection of reading ability was based on two factors:

1. The similarity of information processing in comprehension of both the written word and televised images.
2. Acknowledgement of the subject matter of the tele-lesson as reading.

No other academic content area bore a similar degree of relationship to the activity being studied.

School district classification, or population density of the attendance area was chosen as a variable because of studies such as that by National Assessment (1975) which indicated that scholastic accomplishments are closely related to the size and type of community in which young Americans live. Glenn and Alston (1967) and Lowe and Peek (1974) also supported urban-rural differentiation as a predictor in studies.

The results of the statistical analyses have been reported in Chapter IV. Further discussion and interpretation of the results have been reported in Chapter V.

CHAPTER IV

ANALYSIS OF THE RESULTS

Introduction

A total of 467 students were involved in the study. Each student viewed the telelesson and responded to the questions on the study instrument. A score was determined for each student by totaling the number of correct responses on the instrument. This score constituted the dependent variable as stated in Chapter I.

Two other scores were used in analyses. The raw score from the reading sub-test of the Iowa Test of Basic Skills and the standard age score of the Cognitive Abilities Test were used as independent variables. The other independent variables were sex, population density of the attendance area (urban, rural, suburban) and, of course, the setting (open, traditional).

The means of the three scores have been presented for the total group and each subgroup in Table 4.1.

Table 4.1

Mean Scores on Three Instruments for Total Group and Subgroups

<u>GROUP</u>	<u>N</u>	<u>CATS</u>	<u>ITBS</u>	<u>S.I.</u>
Total	487	101.65	35.69	15.28
Traditional	219	101.35	35.48	15.28
Open	268	101.90	35.87	15.27
Urban	159	89.65	24.10	12.74
Rural	156	107.36	40.10	16.19
Suburban	172	107.57	42.44	16.80
Male	231	99.85	33.74	14.74
Female	256	103.28	37.46	15.76

The observed differences on the means of the three instruments were quite small between the open and traditional groups. No difference was as much as one point.

Among the urban, rural, and suburban groups there were substantial differences. The rural and suburban groups differed markedly from each other only in reading, which favored the suburban group by 2.34 points. The urban group, however, differed markedly from both the rural and suburban groups on all three measures, trailing in each.

There were also substantial differences between the male and female groups. There were marked differences on all three measures, all favoring females.

Analysis of Variance

The significance of the relationships between the ability variables (reading and intelligence) and the classification variables (density, sex and setting) have been explored by means of six, one-way analyses of variance. These analyses were computed in accordance with the computer program labeled Statistical Package for the Social Sciences, version 6.01.1 by Nie, Hull, Jenkins, Steinbrenner and Bent (1975).

Density

The first analysis of variance was concerned with the relationship between intelligence and density. The results of the analysis have been reported in Table 4.2.

Table 4.2

Analysis of Variance: Intelligence and Density

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Between Groups	2	34123.00	17061.50	81.50	.0001
Within Groups	484	101327.50	209.35		
TOTAL	486	135450.50			

The resulting F ratio of 81.50 was significant at the .0001 level, indicating a great significance of difference in intelligence among the students from urban, suburban and rural school attendance areas. Multiple range tests were employed to establish the existence of homogeneous subsets, i.e. "subsets of groups, no pair of which have means that differ by more than the shortest significant range for a subtest of that size" (Statistical Package for the Social Sciences, 1975).

Both the Student-Newman-Keuls procedure and the Scheffe procedure, indicated the existence of two subsets, with subset one comprised of the urban students, and subset two comprised of the rural and suburban students. The three groups, then, did differ significantly in intelligence, and the differences occurred primarily between the urban students and both other groups.

An analysis was also performed to determine possible differences among the urban, rural, and suburban groups in reading ability. The results of the analysis of variance have been presented in Table 4.3.

Table 4.3

Analysis of Variance: Reading Ability and Density

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Between Groups	2	32704.77	16352.38	107.25	.0001
Within Groups	484	73796.97	152.47		
TOTAL	486	106501.74			

The resulting F ratio of 107.25 was significant at the .0001 level, indicating a great significance of difference in reading ability among the students from urban, suburban and rural school attendance areas. Again, multiple range tests were employed to establish the existence of homogeneous subsets, as previously defined.

Once again, the Student-Newman-Keuls procedure and the Scheffe procedure both indicated the existence of two subsets, and again subset one was comprised of the urban students, and subset two was comprised of the rural and suburban students. The three groups, then, differ significantly in reading ability, and again, the difference occurred primarily between the urban students and both other groups.

Overall, it could be observed that the rural and suburban groups were very similar in regard to intelligence and reading ability, and the urban group, as suspected, differed markedly from the other two groups. Significant differences would seem to have existed in intelligence and reading ability based on the population density of the school attendance area. This would seem consistent with studies which indicated differences in student ability based on the type of attendance area.

Sex

Analyses were also performed to determine the relationship between the sex of the students and those students' intelligence and reading ability. The first analysis was concerned with the

relationship between the sex of the students and those students' intelligence. The results of the analysis have been reported in Table 4.4.

Table 4.4

Analysis of Variance: Sex and Intelligence

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Between Groups	1	1454.50	1454.50	5.27	.02
Within Groups	485	133996.00	276.28		
TOTAL	486	135450.50			

The resulting F ratio of 5.27 was significant at the .02 level, indicative of a reasonably significant difference between males and females based on intelligence. This difference would seem highly unlikely based on other studies. Although there might well have been some difference in intelligence between males and females, such an extreme difference would probably indicate that the sample group was not entirely typical of the general population. Of course it might also have been that natural, developmental differences were uncharacteristically magnified by having limited the group to fifth-grade students.

An analysis was also performed to determine any possible difference between male and female students based on reading ability. The results of the analysis have been presented in Table 4.5.

Table 4.5

Analysis of Variance: Sex and Reading Ability

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Between Groups	1	1760.43	1760.43	8.15	.005
Within Groups	485	104741.31	215.96		
TOTAL	486	106501.73			

The resulting F ratio of 8.152 was significant at the .005 level, indicating a great significance of difference in reading ability between male and female students. Overall, male and female students did differ significantly in reading ability and intelligence. The difference was greater for reading than intelligence, although the reading difference could, perhaps, have been expected. Certainly the difference in intelligence between the groups must have been responsible for some of the difference in reading ability.

Setting

Analyses were also performed to determine the relationships between the educational setting (open and traditional) of the students and those students' intelligence and reading ability. The first analysis was concerned with the relationship between the educational setting and intelligence. The results of the analysis have been presented in Table 4.6.

Table 4.6

Analysis of Variance: Setting and Intelligence

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Between Groups	1	32.63	32.63	.12	< .05
Within Groups	485	135417.88	279.21		
TOTAL	486	135450.51			

The resulting F ratio of .12 was not significant at the .05 level. There was, therefore, no significant difference between students in open and traditional settings based on intelligence.

An analysis was also performed to determine any possible difference between students from open and traditional settings based on reading ability. The results of the analysis have been presented in Table 4.7.

Table 4.7

Analysis of Variance: Setting and Reading Ability

<u>Source of Variance</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Between Groups	1	11.52	11.52	.05	<.05
Within Groups	485	106490.22	219.57		
TOTAL	486	106501.74			

The resulting F ratio of .05 was not significant at the .05 level. There was, therefore, no significant difference between students in open and traditional settings based on reading ability. Overall, students from open and traditional settings did not differ significantly on either intelligence or reading ability.

Based on the analyses of variance, there did seem to be significant differences among various groups both in intelligence and reading ability. In most instances, the differences in intelligence and reading ability were similar. The relationship between the intelligence and reading ability measures was explored by computing a Pearson Correlation Coefficient. This coefficient was .73, significant at the .001 level, indicating a substantial or marked relationship between students' intelligence and their reading ability.

Research Questions

The first, and primary, research question for this study was:

Did the educational setting have any effect on students' ability to recall televised information?

This question was explored by means of an Analysis of Covariance to determine the significance of any difference in scores on the study instrument between students from open and traditional settings. Intelligence and reading ability were the covariates in the analysis, and results have been presented in Table 4.8.

Table 4.8

Analysis of Covariance: Educational Setting with
Intelligence and Reading Ability

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Setting	1	.42	7.29	.06	<.05
Covariates	2	2438.85	1219.43	167.39	.001
Within Cell	483	3518.72	7.29		

The resulting F ratio of .06 for the educational setting, and controlled for intelligence and reading ability, was not significant at the .05 level. The groups from open and traditional settings did not differ significantly on their ability to recall televised information when differences in intelligence and reading ability are taken into account, and the first research question was answered:

The educational setting did not have any effect on students' ability to recall televised information.

The second research question for this study was:

Was either type of educational setting superior for facilitating students' ability to recall televised information in urban areas, or suburban areas, or rural areas?

This question was explored by means of a two-way analysis of variance to determine the significance of any relationship between the educational setting and the population density of the school attendance area, based on the students' ability to recall televised information. The results of the analysis have been presented in Table 4.9.

Table 4.9

Analysis of Variance: Television Recall by Setting and Density

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Setting	1	.003	.003	.0001	<.05
Density	2	1541.35	770.68	85.22	.001
Interaction	2	66.56	33.28	3.68	.03
Within Cell	481	4349.66	9.04		

Density itself was, of course, highly significant, probably due to the differences in intelligence and reading ability previously reported. Interaction effects, however, were also significant, with an F ratio of 3.68, significant at the .03 level. This effect has been further examined by presenting cell means in Table 4.10.

Table 4.10

Cell Means: Study Scores by Setting and Density

<u>Density</u>	<u>Open</u>	<u>Traditional</u>
Suburban	16.94	16.66
Rural	16.34	15.89
Urban	12.16	13.38

As Table 4.10 indicated, there were differences in the mean scores on the study instrument between open and traditional groups. The difference for the students in the suburban group favored the open setting by .28, and the difference for the students in the rural group also favored the open setting, but by .45. The difference for the students in the urban group favored the traditional setting by 1.22.

Based on these reported differences, it would seem possible that one type of educational setting might have been superior for facilitating students' ability to recall televised information in any given population density area. In particular, the traditional setting was somewhat preferable for urban students, and the open setting was, perhaps, slightly preferable for the other groups. Overall, the second research question remains unresolved.

The third research question for this study was:

Was either type of educational setting superior for facilitating students' ability to recall televised information for students with high ability, or average ability, or low ability?

This question was explored by means of a two-way analysis of variance to determine the significance of any relationship between the educational setting and the ability level of the students, based on the students' ability to recall televised information. To facilitate this analysis, the students were grouped according to intelligence. Ranking the students according to both intelligence and reading ability revealed a

great deal of consistency. Those students labeled low ability (Standard Age Scores up to and including 90) had lower reading scores than students labeled medium ability (SAS from 91 to, and including, 110) who in turn had lower reading scores than students labeled high ability (SAS above 110). There were, of course, exceptions, but overall the distribution of scores reflected the .73 correlation coefficient previously reported and the intelligence measure was employed as an overall indicator of ability. The results of the analysis have been presented in Table 4.11.

Table 4.11

Analysis of Variance: Television Recall by Setting and Ability

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Setting	1	.003	.003	.0001	<.05
Ability	2	1568.77	784.39	86.19	.001
Interaction	2	11.23	5.62	.62	.05
Within Cell	481	4377.57	9.10		

The resulting F ratio of .62 for the interaction between setting and ability was not significant at the .05 level. Neither the open nor the traditional setting seemed overly significant in facilitating the recall of televised information for students of any ability level. Therefore, the third research question was answered negatively:

Neither type of educational setting was superior for facilitating students' ability to recall televised information for students with high ability, or average ability, or low ability.

The fourth and final research question for this study was:

Was either type of educational setting superior for facilitating students' ability to recall televised information for female students or male students?

This question was explored by means of a two-way analysis of variance to determine the significance of any relationship between the educational setting and the sex of the student. The results of the analysis have been presented in Table 4.12.

Table 4.12

Analysis of Variance: Television Recall
by Setting and Sex

<u>Source of Variation</u>	<u>df</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F</u>	<u>Significance of F</u>
Setting	1	.003	.003	.0001	<.05
Sex	1	125.19	125.19	10.38	.001
Interaction	1	4.45	4.45	.37	<.05
Within Cell	483	5827.94	12.07		

The resulting F ratio of .37 for the interaction between setting and sex was not significant at the .05 level. Neither the open nor the traditional setting seemed overly significant in facilitating the recall of televised information for students of either sex. Therefore, the fourth research question was answered negatively:

Neither type of educational setting was superior for facilitating students' ability to recall televised information for female students or male students.

Summary

The results of the analyses indicated that the open and traditional groups were quite similar initially, in both intelligence and reading ability. Subsequently, the two groups performed similarly in recalling televised information.

The urban group differed significantly from the rural and suburban groups in both intelligence and reading ability. Urban students in the sample group performed somewhat better in traditional settings than open settings and the rural and suburban groups in the sample performed somewhat better in open settings. These differences were not large enough to permit any generalizations for the total population.

Male students differed significantly from female students in intelligence and reading ability, but neither group performed significantly better in recalling televised information in either open or traditional settings. Overall differences between male

and female students in recalling televised information were due to the difference in reading ability and intelligence.

Students of high ability, average ability and low ability performed equally as well in open and traditional settings. There were, of course, actual differences among the three groups due to the differences in ability.

A review of the analyses performed and their results has been presented in Table 4.13.

Table 4.13

Summary of Analyses Performed and Their Significance

<u>Question</u>	<u>Analysis Performed</u>	<u>F</u>	<u>Significance</u>	<u>Level</u>
1. Differences Among Density Areas on Intelligence	One-Way ANOVA	81.50	Yes	.0001
2. Difference Among Density Areas on Reading	One-Way ANOVA	107.25	Yes	.0001
3. Difference Between Sexes on Intelligence	One-Way ANOVA	5.27	Yes	.02
4. Difference Between Sexes on Reading	One-Way ANOVA	8.15	Yes	.005
5. Difference Between Settings on Intelligence	One-Way ANOVA	.12	No	-
6. Difference Between Settings on Reading	One-Way ANOVA	.05	No	-
7. Difference in Performance Between Settings Controlled for Intelligence and Reading	ANOCOVA	.06	No	-
8. Preferred Setting for any Density Area	Two-Way ANOVA	3.68	Yes	.03
9. Preferred Setting for any Ability Level	Two-Way ANOVA	.62	No	-
10. Preferred Setting for Either Sex	Two-Way ANOVA	.37	No	-

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

This chapter contains the conclusions of the study, interpretation of the conclusions, suggestions for further research, and a general summary of the study. Each section has been tempered with the conditions which controlled the study.

Conclusions

There were initial differences among the various groups. The urban students differed from the rural and suburban students in both reading ability and intelligence, and male students differed from female students in both reading ability and intelligence. It was not surprising that the groups which were different, differed on both measures. It was reported in Chapter IV that the correlation between reading and intelligence measures was quite substantial. In both cases, the difference in reading was greater than the difference in intelligence, indicative perhaps, of a constantly increasing gap in achievement between intelligent and less intelligent students.

The differences in reading ability and intelligence must be taken into consideration in interpreting the results of the analyses. Fortunately, the main question, which con-

cerned the difference in performance between students in open and traditional classrooms, was not affected. There were virtually no differences between the students in open classrooms and those in traditional classrooms. The analysis of covariance, by design, took these slight existent differences into account. For the other analyses, however, it should be remembered in comparing student performance that there were differences in overall ability among some of the groups; and these differences were not statistically manipulated to artificially "equalize" the groups.

The analyses reported in Chapter IV permitted certain conclusions to be drawn for the sample population:

1. Students in open classrooms performed as well as students in traditional classrooms in recalling televised information.
2. Urban students performed somewhat better in traditional classrooms and rural and suburban students performed somewhat better in open classrooms.
3. Students in each ability group performed as well in open classrooms as traditional classrooms.
4. Both male and female students performed as well in open classrooms as in traditional classrooms.

The absence of any difference in performance between students in open classrooms and those in traditional classrooms was somewhat surprising because of the suspected influence of environmental factors, and the actual differences in viewing

conditions. In virtually every instance, the groups from the traditional schools had far better viewing conditions than the groups from open schools. In the traditional setting there were fewer students in each viewing group, the students were closer to the television receivers, there was less movement involved in preparing for viewing, and there were fewer distractions during viewing.

Since viewing conditions favored the traditional group, and the groups were quite similar in ability, the similarity of performance would suggest one of two things:

1. Viewing conditions were not an important factor.
2. Students in the open settings were able to compensate for the less desirable viewing conditions.

No matter which of the two was true, the result should be most encouraging for those considering the use of instructional television in open settings.

The question of the effects of the population density of the attendance area on student performance was not clearly resolved. It was reported in Chapter IV that the urban group differed from the rural and suburban groups in both intelligence and reading ability, yet overall, ability was not a significant factor influencing student performance in a particular setting. Apparently, some other factor which differentiates urban students from other students caused the urban students to perform better in traditional classrooms and rural and suburban students to perform better in open classrooms. The difference

in performance was not great, but it was large enough to warrant consideration. It should be noted that many rural areas in Maryland are becoming much like suburban areas in terms of the type of residents.

It was reported in Chapter IV that male and female students differed greatly in reading ability, and to a lesser extent in intelligence, yet again, neither group performed better in a particular setting. This finding would further reinforce the conclusion that ability, even combined with another factor, was not significant in causing students to perform better in a particular setting.

This lack of any difference in performance between the sexes or among ability groups, should, again, be encouraging for those considering the use of instructional television in open settings. There apparently was no "best" setting for any of these groups, so it would seem likely that television could be used with equal effectiveness in open and traditional settings for male and female students of high, average, or low ability.

It must be remembered that this study was conducted with respect to the recall of televised information by one sample. The conclusions should not be applied without reservation in the population. For example, even though urban students performed somewhat better in traditional schools than open schools, it could not be concluded that urban students learn better in traditional schools than they do in open schools. Recall is only one aspect of learning and television is only one medium of instruction. Repetition of the task might also yield somewhat different re-

sults, as could the alteration of another factor. For instance, utilizing a telelesson dealing with another subject area might influence the results for certain groups. Also this particular program has seemed to generate an unusually high degree of interest among viewers which could affect concentration. A different program, dealing with mathematics or science, and involving less sophisticated production techniques, and lasting for thirty rather than twenty minutes might well indicate greater discrimination.

Suggestions for Further Research

This study has answered the stated research questions. The conclusion that students in open schools performed as well as those in traditional schools might add more evidence to the point of view that neither type of setting is inherently better than the other, but still more research is needed on various learning activities and their appropriateness in each type of setting. It is quite possible that many educators have assumed too quickly that the physical setting must influence the choice of instructional activities.

It is also possible that the particular task involved in this study was atypical. It would probably be worthwhile to repeat this study using a drastically different telelesson. It may be that students learn some subjects more efficiently from television than others. It might also be enlightening to isolate levels of learning other than recall to determine

if a particular setting facilitates higher levels of learning.

More distinct studies which might be warranted based on the findings of this study would involve the relationships between intelligence and learning from television, and reading ability and learning from television. The issue of intelligence could be addressed in terms of students with below average intelligence and their ability to learn from television as compared to another medium. The issue of reading ability would need to be separated from intelligence. Perhaps groups of readers and non-readers could be paired for intelligence and compared as to their ability to learn from television. It might also be worthwhile to attempt to determine any cause and effect relationship between viewing instructional television and developing reading ability.

These last suggestions go beyond the question of setting to focus on the question of learning from television. In Chapter II it was stated that the fact of learning from television had been well established, but the nature of this learning, and the conditions under which it occurs deserve far more attention.

One final question which would warrant further study concerns the relationship between student attitudes and cognitive learning. Many studies reported in Chapter II indicated that students preferred open settings to traditional settings, yet in virtually every study, including this one, there have been no significant differences in achievement

between students in the two groups. Could it be that student attitude has no influence on learning, or is it that attitude and environmental factors offset one another?

General Summary

This study was not the be-all and end-all of any particular topic, but it is hoped that it has filled in one blank space in the total picture of research involving instructional television and perhaps it will encourage a new direction for research in open space schools. At the very least, it is hoped that this study provided an adequate basis for stating that instructional television is as effective in open classrooms as it is traditional classrooms. This finding takes on added meaning when it is realized that the open classrooms typically involved larger groups, viewing at greater distances, with more distractions. This conclusion should be encouraging for those educators intending to utilize instructional television in open classrooms, and even those concerned about utilizing television in less than ideal viewing situations. This finding also provides a rationale for accepting research performed in traditional settings as equally valid for open situations.

Unfortunately, even though the study performed the tasks it set out to do, it leaves much to be done. Green (1970) has stated:

"...In the rush to innovate or keep up with the educa-

tional Jonese, school districts often fail to follow through with the implications of instructional technology for their new programs."

A tremendous amount of information is known about television and its uses. Tickton (1971) listed 22 separate applications of television including everything from magnification to linear programming for groups. He further stated the obvious advantages of its use:

"...to speed up the rate of learning...help the teacher make better use of his time...reduce the teacher's heavy burden of administrative tasks...take over some of the teacher's routine job of information transmission."

But, there is one problem which must be faced if instructional television is to fulfill its promise. Bruner (1966) has stated it this way:

"A curriculum is a thing in balance that cannot be developed first for content, then for teaching method, then for visual aids, then for some other particular feature."

As long as television is viewed as an add-on feature of the curriculum, the proven advantages will remain a moot point.

The reluctance of educators to utilize instructional television is perplexing. Tickton (1970) recognized that "Education institutions make scant use of the potent means of communication that modern society finds indispensable and that occupy so much of young people's out-of-school time." He went on to observe that "today instructional television fills less than 3 percent of total classroom hours in the elementary and secondary schools of the country's 16 largest

cities."

Educators, have always been reluctant to fully utilize instructional television, and proponents of open schools, with their emphasis on humanistic education, might be even more reluctant. Perhaps if more studies are done which illustrate the usefullness of television in open settings, more educators will accept Rosove's (1972) point of view "that there is no inconsistency or inherent conflict between a humanistic approach to education and an approach in which educational technology is employed...." It is hoped that the practice will soon catch up with the research.

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Bethesda, Md., 1973 (ERIC Document Reproduction Services
No. 076 673)

APPENDIX A

PRODUCTION SCRIPT:

"WHO AM I?"

ITV LOGO

0:20 ITV SPECIAL CART

This program has been produced by the
Maryland State Department of Education's
Division of Instructional Television
in cooperation with the Divisions of
Instruction, Library Development and
Services, Vocational-Technical Educa-
tion, and Compensatory Urban and
Supplementary Programs.

SLIDE:

INSTRUCTION
LIBRARY SERVICES
VOCATIONAL TECHNICAL EDUCATION
COMPENSATORY URBAN AND
SUPPLEMENTARY PROGRAMS

Standard Open

0:30 SOF STANDARD OPEN

.....

00:00 VTR ITV SIG SOT: (:20) 1:15

00:20 STANDARD OPEN SOT: THEME
 SUPER: CARD: SERIES
 TITLE
 SUPER: CARD: LESSON
 TITLE "WHO AM I?"

EDIT

01:15 CUT TO STUDIO: ANCHOR
 SET. ASSORTED PEOPLE IN
 BACKGROUND COMING IN AND
 OUT DURING PROGRAM.
 DAVID IS SEATED
 DOWNSTAGE ON PARK
 BENCH, READING. NANCY
 ENTERS SET CARRYING
 AN UNWIELDY LOAD OF
 NEWSPAPERS TIED WITH
 STRING. THEY ARE FALLING
 OUT AS SHE APPROACHES
 DAVID. FINALLY STRING
 BREAKS AND PAPERS FLY ALL
 OVER THE PLACE. DAVID
 GETS UP TO HELP HER.

MIC: NANCY: (GROANING)

Oh, good grief!

DAVID:

Here, want some help?

NANCY:

Thanks, I was afraid
 that string would break. I've
 got to get these over to the recy-
 cling center.

DAVID PICKS UP
JIFFY YELLOW-HAWK,

WHICH WAS AMONG THE PAPERS.

DAVID:

You're not re-cycling this,
are you?

NANCY:

Oh, I must have picked that
up along with the last load
of papers. My brother was
reading it. He's always
leaving this stuff around.

DAVID:

Doesn't look half-bad. Wow,
the author's name is Virginia
Driving Hawk Sneve...she's a
Sioux Indian. Hey, listen to
this...

EDIT

(ACTUAL 1:36)

CART: BACKGROUND MUSIC: (WITH IN-
DIAN FLAVOR; SINGLE INSTRUMENT;
WCCJWIN)

2:00 DISS. TO ILLUSTRATION
#1 (COVER OF BOOK)

VC: DAVID:

Jimmy Yellow-Hawk's full name
was James Henry Yellow Hawk,
but everyone called him Little
Jim, because his father
a rancher who owned lots of
horses and cattle, was called
Big Jim.

DISS TO ILLUSTRATION
#2 (ON PAGE 22 IN BOOK)

DISS TO ILLUSTRATION
#3 (frontispiece in
book)

Little Jim didn't like his
nickname, because he didn't
think of himself as a kid
anymore...

DISS TO ILLUSTRATION
#4 (on page 18 in
book)

Miss Red Owl, his teacher
called him James, which he
liked better than Little
Jim. . . but the other kids
made fun of that name, too.

DISS. TO ILLUSTRATION
#5 (on page 59 in book)

Little Jim knew that in the
old days a Sioux Indian boy
earned his name by doing some
great deed. His great grand-
father told him that a boy
might also get his name by
doing something disgraceful,
and then he would have to
carry that bad name all his
life.

DISS TO ILLUSTRATION
#6 (on page 69 in book)

One day Little Jim took a
skunk from a trap, thinking
the animal was dead. It
wasn't, and it sprayed him so
badly all his clothes had to
be burned. For a while he

was afraid he might be named
Skunk Face.

DISS TO ILLUSTRATION
#7 (on page 32 in book)

Little Jim enters the school
rodeo and rides a bucking
calf . . .

DISS TO ILLUSTRATION
#8 (on page 38 in book)

He goes looking for a lost
mare in a bad thunderstorm . . .

DISS TO ILLUSTRATION
#9 (on page 51 in book)

and he visits the Dakota
Creek Reservation pow wow.

DISS TO ILLUSTRATION
#3 (frontispiece in book)

Finally, he gets his true
name.

EDIT

1:05

3:25 DISS FROM FINAL ILLUSTRATION
TO NANCY, LOOKING INTERESTED.

CAROLYN ENTERS SET, UPSTAGE,
AND BEGINS SNAPPING PICTURES.
DAVID PUTS THE BOOK DOWN, AND
GLANCES AROUND AT HER WITH A
CURIOUS EXPRESSION. HE IS
STILL STARING AS NANCY FINISHES
HER SPEECH.

NANCY:

No wonder Petey likes that
book. He's usually as mixed-
up about himself as Jimmy
Yellow-Hawk was. Here, give
it to me so I won't forget it.

Hey, David, it's not polite
to stare, you know.

DAVID:

Oh, sorry . . . But talking
about being mixed up, I
wonder who that is?

(HE NODS HIS HEAD IN CAROLYN'S
DIRECTION)

NANCY:

You've got me . . . I never
saw her before. Maybe she's
a spy.

CHARLENE: (CHEERFULLY)

Hey, look you guys!

NANCY:

Well, you're in a good mood,
Charly. What's up?

CHARLEE:

Oh, nothing in particular.

Some days I'm just really glad
I'm me.

CHARLENE COMES THROUGH
DOOR OF HER HOUSE,
WEARING CHEERLEADER
OUTFIT, CARRYING LARGE
SHOULDER BAG. SHE TOSSES
IT ON THE GROUND, AND
DOES A BIT OF CHEERLEADER
BUSINESS IN FRONT OF
DAVID AND NANCY.

PICKS UP HER BAG
AND CHARLENE SITS
DOWN ON THE "GRASS"
NEXT TO THE PARK
BENCH.

DAVID: (WRYLY)

Well, you're lucky. It'd
be kind of hard for you to be
somebody else.

CHARLENE PULLS THE
BOOK FROM HER BAG.
CU BOOK.

CHARLENE:

Some people aren't happy being
 just who they are. Like Andrew
 Marcus, in Freckle Juice.

He wanted to have freckles,
 like his friend Nicky Lane.

So Sharon, this girl in his
 class, sold him a recipe for
 freckle juice. It cost fifty
cents.

NANCY:

What's in a recipe for freckle
 juice?

DAVID:

I'd hate to try and guess.

CHARLENE:

Let me read it to you. It's
 really wild.

EDIT

4:30 DISS TO DRAWING
 OF RECIPE ON PAGE 22.

MUSIC: ADD IN POST INTRODUCTION(2:15)
V.O. CHARLENE:

Sharon's Secret Recipe for
 Freckle Juice. One glass
 makes an average amount of
 freckles. To get like Nicky
 Lane drink two glasses. Mix
 up all these things together.

Stir well and drink fast.

Grape juice, vinegar, mustard...

DAVID PANTONINES ACTION
DESCRIBED IN VOICE-OVER.

He chose a big blue glass.

He'd start with just one

glassful and then drink

another if he wanted more

freckles. No point in over-

doing it the first time.

Now first the grape juice,

Andrew thought. He filled

the glass halfway and added

an ice cube. All drinks

tasted better cold and he was

sure this one would too.

Then he added the other in-

gredients one by one. His

mother had two kinds of

vinegars -- wine vinegar and

plain vinegar. Andrew picked

the wine one. He put in some

hot mustard, one spoonful of

mayonnaise, and plenty of

pepper and salt. Then some

ketchup . . . that was hard to

pour . . . Now for the lemon.

Andrew cut one in half and squeezed. Oh no! A seed dropped in by mistake. He picked it out with his spoon. He hated pits in his juice. Now all he needed was that speck of onion and he was all set. He stirred up the drink and smelled it.

OH! IT SMELLED AWFUL! JUST PLAIN AWFUL! He'd have to hold his nose while he drank it. He stuck his tongue into the glass to taste it.

Ick! Terrible! He didn't know how he would ever manage to get it down.

It said to drink it very fast! That old Sharon! She probably thought he wouldn't be able to drink it. Well, he'd show her. He'd drink it all right!

Andrew held his nose, tilted his head back and gulped down Sharon's secret recipe for freckle juice. He felt like

throwing up . . . it was that bad! But if he did he'd never get freckles.

EDIT
6:45

MUSIC BUTTONS

2:05

DISS FROM DAVID'S FACE
TO DAVID'S FACE, WITH
THE SAME EXPRESSION OF
ABOUT-TO-THROW-UP.

NANCY:

Well? Did he get any freckles?

CHARLENE:

What do you think?

DAVID:

I bet I can tell you what he
did get: SICK.

NANCY:

Hey Charlee, do you know who
that is?

DAVID:

Maybe she is a spy, Nance.

(HE AFFECTS AN ACCENT)

I sink she is looking for da
secret freckle joose recipe.

CHARLENE:

You two sure have wild imagi-
nations. That's my new
neighbor. Hey Carolyn, come
on over! I want you to meet

THEY LAUGH. NANCY
TURNS TO LOOK AT
CAROLYN, STILL
SNAPPING PICTURES
U1STACT.

CHARLENE STANDS UP
AND WAVES.

some friends of mine.

David, Nancy, this is Carolyn.

She's new in the neighborhood.

She comes from New York City.

NANCY:

Wow. I guess this place must
seem pretty . . . well, dull

I guess.

CAROLYN:

Oh no . . . I really like it
here. I was just taking some
pictures to send to my friends
back home. I mean, back in
New York. I was going to ask
if I could take a picture of
you. You looked like you were
having a really good time.

CHARLENE:

We were talking about Freckle
Juice. It's a book by Judy
Blume, and it's about . . .

CAROLYN: (INTERLUPTING)

Judy Blume! I know her. She
lives in New Jersey -- her
husband's a lawyer and they
have two children. One time

she came to my school and I
took a picture of her. I
sent it to her and she signed
it and sent it back.

NANCY:

Hey, cool! Have you got it?

CAROLYN: (HESITANTLY)

Uh, no . . . it's in a trunk
with some of my other stuff.
It hasn't come yet.

DAVID: (WITH A SKEPTICAL AIR)

Ch.

NANCY:

I just read another book by
her. Otherwise Known as
Sheila the Great. Ever read
it?

CAROLYN:

Sure. I've read every one of
her books. I think she's
great.

DAVID:

Isn't Sheila Tubman the girl
who is always going around
trying to make people think

NANCY TAKES BOOK FROM
HER SATCHEL AND HANDS IT
TO CAROLYN.

CU BOOK: OTHERWISE KNOWN
AS SHEILA THE GREAT.
CAROLYN TAKES THE BOOK
FROM NANCY.

she's something she's not?

NANCY:

Yeah, that's her. She's a. . .

DAVID:

Fake?

NANCY:

Yeah, I guess you could say
that.

CAROLINE: (A LITTLE DEFENSIVELY)

But she's nice . . .

DAVID:

Hey, Nancy, have you gotten
to the part where Sheila
meets House Ellis for the
first time?

NANCY:

You mean the part with the
yo-yo?

DAVID: (KNOWINGLY)

That's the one.

EDIT
8:50

1:20

VTR: SHEILA (DETH HAYER)
ON STEPS OF FRONT PORCH
OF OLD FRAME HOUSE.
WEARING JEANS, TEE-SHIRT,
HAIR IN PIGTAILS. HOUSE
(K. T. HAYER) DRESSED IN
A SIMILAR FASHION, WALKS
UP TWIRLING HER DUNCAN
YO-YO.

HOUSE:

I'm House Ellis, Junior
Champion of Tarrytown. I
can do eleven different tricks
without stopping. How many
can you do?

SHEILA: (IMMEDIATELY)

I never stopped to count.

HOUSE'S EYES WIDEN,
SHE RAISES HER EYE-
BROWS, AND OFFERS
SHEILA THE YO-YO.

HOUSE:

Go ahead and show me.

SHEILA: (WITH A SHRUG)

I don't feel like it.

HOUSE:

I'll bet you can't do Shotgun
six times in a row.

SHEILA:

I'll bet I can.

HOUSE:

Okay, let's see you do it then.

SHEILA:

After you.

HOUSE:

O.K.

SHEILA:

Very good.

HOUSE, HOLDING THE YO-YO
NEXT TO HER HIP, DOES
SHOT-GUN SIX TIMES IN A
ROW.

HOUSE HANDS SHEILA THE
YO-YO. CAROLYN LOOKS IT
OVER CAREFULLY.

HOUSE:

It's a Duncan-Imperial. The very best yo-yo made.

SHEILA:

It's not bad.

HOUSE:

I'm ready any time you are.

SHEILA STANDS UP, HOLDS THE YO-YO NEXT TO HER HIP, THROWS IT OUT, AND WHACKS HERSELF ON THE HEAD, GRIMACING, BUT CLENCHING HER TEETH.

HOUSE:

Hey, are you okay?

SHEILA:

Oh sure. But I guess I'll have to tell you the truth now. I didn't want to hurt your feelings before. But where I come from, yo-yo's are for babies. I haven't done shotgun for about eight years now. That's why I missed.

HOUSE GIVES SHEILA A LONG, APPRAISING STARE. SHEILA COOL, STARES BACK. HOUSE SITS DOWN NEXT TO HER ON THE STEPS.

HOUSE:

You'll never know how glad I

am that you moved in for the
summer. I'm so sick of those
Egran boys!

EDIT

1:20

10:10

CUT TO GROUP IN
SET

NIC

CHARLENE: (SHAKING HER HEAD)

That Sheila. Why does she
go around trying to fake it
like that?

NANCY:

Well, you said it before,
Charlee. Some people just
aren't happy being themselves
because they really don't know
who they are. I know what
it's like; I even wrote a
song about it.

DAVID:

You did, huh? Well, let's
hear it, maestro.

NANCY:

Okay, wise guy. Just for that,
I'll sing it.

(SHE CLEARS HER THROAT, EX-
AGGERATEDLY, AND "TUNES UP"
HER VOICE)

~~~~~. (INTIMATE, IN-  
FORMAL)

THIS SHOULD BE PLAYED  
AS AN INTIMATE, INFORMAL  
THING.

(That's the title of the  
song.) This is a little  
strumming thing.

Who, who, who am I? What,  
and how, and why am I?

Where am I going, and what  
will I be? And what is the  
meaning of nececececececece?  
That's it. Short but sweet.

CAROLYN: (THOUGHTFULLY)

You know, Nancy,  
I've felt like that so many  
times.

DAVID:

Join the club.

CHARLENE:

The Sheila Tubman Club. Hey,  
Nance, what happens to House  
and Sheila?

NANCY:

Well, they got to be friends,  
and . . .

FADE OUT NANCY' VOICE

EDIT

11:30 VTR NANCY AND  
CAROLYN AGAIN. SAME  
SCENE

1:25

SHEILA:

So, I'm sleeping in one of the

Egran boy's bedrooms. And  
guess what I found in the desk?

HOUSE:

What?

SHEILA:

Six tubes of Testor's glue and  
twenty-seven jars of model  
paint!

HOUSE: (LAUGHING)

You must have Bobby's room.  
He's a model maniac.

SHEILA:

He left a note for me. He  
signed it B. B.

HOUSE:

That's Bobby!

SHEILA:

He wrote that if I touch any  
of his models he'll get me  
someday.

HOUSE: (SARCASTICALLY)

Ha ha! He's all talk.

SHEILA:

That's what I figured. Anyhow,  
who'd want to fool around with  
his dumb old models?

HOUSE:

Not me. I've got better things to do.

SHEILA:

Me too. Say, is your real name House?

HOUSE:

No, it's Herle. But everyone calls me House.

SHEILA:

You better watch out. My father's name is really Bertram and everybody still calls him Buzz.

HOUSE:

Well, I don't care if people call me mouse forever. I like it a whole lot better than Herle. And if you ask me, Buzz is a much better name than Bertram. Nothing against your father, of course.

SHEILA:

I didn't mean I didn't like your nickname. As long as you like to be called House.

NANCY GETS UP AND  
STRETCHES, STARTS  
PLAYING WITH HER  
YO-YO.

Personally I think it's a very nice name. It's much better than Sheila.

HOUSE:

If you don't like Sheila you should call yourself something else.

SHEILA:

Like what?

HOUSE:

Oh . . . maybe Sugar or Sunny or something like that.

SHEILA:

I don't like sugar. But sunny sounds pretty good. Sunny Tubman . . . yeah. I kind of like that.

HOUSE:

Okay, then that's what I'll call you from now on.

---

:25

13:05 CUT BACK TO  
CROUT AROUND  
PARK BENCH.

CHARLENE: (SHAKING HER HEAD)

I sure feel sorry for Lobby Egran.

NANCY:

Sorry for him? How come?

CHARLENE:

With those two around, his models don't stand much of a chance.

DAVID:

Hey, that reminds me! Have you seen the model of a locomotive engine in the window of the Variety Store?

CAROLYN:

I saw it when I was taking pictures. It's really neat.

NANCY:

Well, what are we waiting for? Let's go look at it!

:55

13:30

THE FOUR SET OUT  
FOR THE VARIETY STORE  
NANCY REMEMBERS HER  
NEWSPAPERS AND RUNS  
BACK TO GET THEM.

CUT TO GROUP  
STANDING IN FRONT  
OF THE VARIETY SHOP  
WINDCH.

DAVID:

That's a real beauty. Man, I wish I'd been alive when those

were on the tracks.

CAROLYN:

Hey, they're just like the  
trains in Call Me Heller.

DAVID:

What'd you say?

CAROLYN:

Like in Call Me Heller. It's  
a book I'm reading, and the  
story takes place during the  
Nineteen-Twenties. There  
were lots of trains like this  
running back then.

CHARLENE:

What kind of a name is Heller?

CAROLYN:

It's a nickname . . . like  
Sunny Tubman. Heller's real  
name is Hildegard.

GROANS FROM EVERYBODY.

NANCY:

No wonder she wanted a nickname.

CAROLYN:

Heller's always doing things  
to prove something. Like one  
time she starts to walk across

CU BOCH

a railroad trestle -- that's a kind of bridge for a train. It hangs over a canyon. And then a train starts coming.

DAVID:

Uh-oh.

CHARLENE:

What does she do, Carolyn?

EDIT

14:25 CU OF TRAIN MODEL.  
DISS FROM THIS TO  
ILLUSTRATION OF  
HELIER AND WAYNE  
ON THE TRESTLE.

SFX (TRAIN HORN) :35

CAROLYN:

Her friend Wayne comes out onto the trestle and tries to pull her away . . .

SFX: SHORI HORN

SFX: APPROACHING LOCOMOTIVE, GETTING LOUDER.

V.O. CAROLYN:

. . . But her legs won't move right. Just like in a nightmare. She tries to run, but she can't. Wayne pulls her and she trips and one of her legs slips through the space between the railroad ties. She gets it out, but there's no time to get off the trestle.

So Wayne pushes her . . .  
and they both fall face down  
on the ties.

FADE TO BLACK

SFX: VERY LOUD TRAIN SOUNDS FOR A  
SECOND OR TWO.

FADE OUT TRAIN SOUNDS.

EDIT

1:10

15:00 CUT TO FACES  
OF GROUP, AGHAST

CAROLYN:

And they have to lie there  
while the train passes right  
over them.

CHARLENE:

And they don't get smashed to  
bits?

CAROLYN: (SHAKING HER HEAD)

No, they make it off the  
trestle alive. But just  
barely.

DAVID:

Phew. That must be some book.

CAROLYN TAKES BOOK  
FROM POCKET OF HER  
COAT OR FROM PURSE.

CAROLYN: (EAGERLY)

Want to read it? I've got it  
right here.

SHOW COVER OF  
BOOK IN DAVID'S  
HANDS.  
CU BOOK

DAVID:

Yeah . . . this looks good.

Even if Heller wasn't using

her head.

NANCY: (WITH MUCH DISGUST)

Oh, David! I think it was pretty darn brave of Heller to go out on that railroad trestle all alone.

DAVID:

Doing stuff like that isn't brave. It's just stupid.

CHARLENE:

C'mon you two -- let's not get into an argument about it.

CAROLYN:

Sometimes people do foolish things because they want other people to like them...

CHARLENE:

Like Heller going out on the trestle. . .

DAVID:

And Sheila Tubman making up that story about the yo-yo. Speaking of yo-yo's, I've got to go home and baby-sit my neighbor while his mother goes to the I.T.A.

CAROLYN:

Where do you live, David?

DAVID:

A mile or two out of town...  
on a farm.

FOUR BEGIN WALKING

CAROLYN:

I've never seen a real farm.  
Up close, I mean.

DAVID: (WITH REAL SURPRISE)

No kidding? Well, I've never  
been to New York City, so that  
makes us even. You coming,  
Nance? Charlee?

EDIT

:50

16:10 AS THEY PASS THE  
BULLETIN BOARD, WE  
STAY ON IT WHILE THEY  
WALK BY. ON IT ARE  
THE COVERS OF OUR  
ADDITIONAL BOOKS AND  
A BANNER READING  
"WHO AM I?"

CU'S OF BOOK  
COVERS AND NON-  
PRINT INDIVIDUALLY.

SCT FADE IN THERE, SOFTLY

VC: DAVID:

Reading about other people  
can help you discover things  
about yourself.

VC: NANCY:

For instance, what would it be  
like to spend a whole year in  
Brooklyn with relatives you've  
never met before? Find out in  
A Year In the Life of Rosie

Bernard. (2 beats pause)

VO: DAVID:

Sometimes you're happy, some-  
times you're sad...like Juan.  
You might try this book about  
an orphan boy in Mexico, by  
Mary Stolz.

VC: NANCY:

When Isabelle gets the chance  
to take over her brother's  
paper route, she really takes  
over, in Isabelle the Itch,  
by Constance C. Green.

DURING EE:  
SPECIAL DISPLAY WITH  
FILM STRIP PROJECTOR

VO: DAVID:

Discover yourself in Me, My-  
self and I, a sound-filmstrip  
from Dyegate.

SUPER CARD:  
ME, MYSELF AND I

VC: NANCY:

Look for these in your library  
or media center.

---

:10

CUT TO:

SC1: CONTINUE THEM, UNDER.

ANCHOR SET: LIGHTS  
COME DOWN: TWILIGHT  
CU DAVID AT "EDGE  
OF TOWN"

LJC DAVID:

Hey Carolyn . . . Thanks for  
the book. Maybe sometime you

CU CAROLYN ON STEPS  
OF HER HOUSE

can tell me about New York.

CAROLYN:

And you can tell me about life  
on a farm.

CU DAVID

DAVID:

Okay, it's a deal.

017:45 STD. CLOSE

SC1 THREE IN FULL AND CUT

ANNCR:

SUPER CARDS:

NANCY KEEBS, CHARLENE  
WILLIAMS, CAROLYN EISENBERG  
AND DAVID DEECY; PRODUCER-  
ROBERT DAVY; DIRECTOR-STEVE  
MCCULLOUGH; SCRIPT WRITER-  
CHRISTINA ICCOIFF; PRODUCTION  
EXECUTIVE-ANGELA MCDERMOTT;  
BROADCAST ASSISTANT-SUZIE  
WALTER; RESOURCE TEACHER-  
MARILYN BROWN; MEDIA SPECIALIST  
LIZ WILDEBERGER; COORDINATOR,  
CURRICULUM DEVELOPMENT-DR.  
EDWARD S. BEACH, JR.;  
SPECIALIST IN CURRICULUM-  
JOHN LAITLAND; CHAIRMAN, READING  
LIT TASK FORCE-NANCY PINSON;  
CONSULTANT-EVELYN GIRARDIN;  
GRAPHICS-BILL JOYNER; SPECIAL  
EFFECTS-BOB GIBSON, JOHN  
WILSON; ORIGINAL MUSIC-DON  
SWARTZ, DON BARTO, JIMMY WELLS;  
STUDIO SUP: MIKE CORREAN;  
PHOTOGRAPHY-RON SCLOMON

Otherwise Known As Sheila the

Great, by Judy Blume was used

with permission of Harold

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Freckle Juice, by Judy Blume.

Permission: Four Winds Press.

Copyright 1971.

Jimmy Yellow Hawk, by Virginia

Snene. Permission: Holiday

House, Inc.

Call Me Heller. That's My Name,

by Stella Levsner, illustrated

by Richard Cuffari copyright

1973 by the author. Permission:

The Scalvery Press, Inc., New

York, New York.

018:35

SUPER SLIDE:BTHANNOR:

c Copyright by  
The Maryland State  
Department of Education,  
Division of Instructional  
Television

Reproduction of this program,  
in whole or in part, is pro-  
hibited.

018:40

FILM: LCGCSCFTAG

018:50 - OFF

APPENDIX B

INSTRUMENT  
FORMS A AND B

Instructional Television Evaluation Instrument  
Division of Instructional Television  
Maryland State Department of Education

Form A

F I \_\_\_\_\_ F A \_\_\_\_\_

Please circle the number next to the correct answer.

Example:

This series was produced in

1. Virginia
2. Alaska
3. Maryland
4. Delaware

1. Carolyn's hobby was

1. painting
2. farming
3. building models
4. taking pictures

2. Charlee's neighbor, Carolyn, was from

1. New York
2. California
3. Washington, D. C.
4. Colorado

3. After drinking Freckle juice, Andrew got

1. freckles
2. sick
3. angry
4. punished

4. Little Jim had a problem with

1. an Indian
2. a skunk
3. a bear
4. a burgler

5. The book Jimmy Yellow-Hawk belonged to

1. David
2. Nancy
3. Nancy's brother
4. Charlee

6. Little Jim was
  1. an Eskimo
  2. a Sioux
  3. a Cherokee
  4. a Canadian
7. David lives
  1. in an apartment
  2. on a farm
  3. in a house in the city
  4. over a store
8. The title of the series is
  1. Book, Look, and Listen
  2. Spinning Stories
  3. Once Upon A Town
  4. Reading for Fun
9. Which of these books is mentioned in the program
  1. Horton Hears a Who
  2. Trains and Things
  3. Scavenger
  4. Otherwise Known as Sheila the Great
10. Mouse's Yo-Yo is a
  1. Kenner Spinner
  2. Duncan Imperial
  3. Mattel Champion
  4. Duncan Professional
11. Which of these books is mentioned in the program
  1. Run Far, Run Fast
  2. Bubble, Bubble, Bubble
  3. A Trick of Light
  4. The Pushcart War
12. Which of these books is mentioned in the program
  1. Otis Spofford
  2. Confessions of an Only Child
  3. Do You Want to Be My Friend?
  4. The King Who Rained
13. A sound-filmstrip mentioned in the program is

1. Bowmar Artworlds
  2. Feelings
  3. Landslide!
  4. Me Myself and I
14. Nancy was taking papers
1. home
  2. to a recycling center
  3. on her paper route
  4. to the dump
15. Sheila Tubman's friend's nickname is
1. Mouse
  2. Eggy
  3. Bert
  4. Sugar
16. Sheila Tubman couldn't
1. ride a bike
  2. spin a top
  3. use a yo-yo
  4. play jacks
17. Heller's real name is
1. Merle
  2. Sunny
  3. Matilda
  4. Hildegarde
18. Bobby Egran's hobby is
1. building models
  2. taking pictures
  3. hunting
  4. reading books
19. Heller's friend Wayne tried to
1. hurt her
  2. help her
  3. make fun of her
  4. make up with her
20. Andrew added one thing to the freckle juice not in the recipe
1. ice cube
  2. mustard
  3. vinegar
  4. water

Instructional Television Evaluation Instrument  
Division of Instructional Television  
Maryland State Department of Education

Form B

F<sub>I</sub> \_\_\_\_\_ F<sub>A</sub> \_\_\_\_\_

Please circle the number next to the correct answer.

Example:

This series was produced in

1. Virginia
2. Alaska
3. Maryland
4. Delaware

1. Which of these books is mentioned in the program

1. The Foot Book
2. Juan
3. Billy Boy
4. Let the Balloon Go

2. Which of these books is mentioned in the program

1. Spouts, Lids and Cans
2. Bobo's Dream
3. Frances Face-Maker
4. The Bad Times of Irma Baumlein

3. Which of these books is mentioned in the program

1. A Year in the Life of Rosie Bernard
2. Grizzly
3. Queeny Peavy
4. Gobble, Growl, Grunt

4. Which of these books is mentioned in the program

1. Life With Father
2. Isabelle the Itch
3. White Fang
4. Life on the Plains

5. Which of these books is mentioned in the program

1. Periwinkle Jones
2. My Friend Little John and Me
3. Call Me Heller
4. Onion John

6. "Shotgun" is
  1. an Indian name
  2. a yo-yo trick
  3. a book by Judy Blume
  4. Sheila's nickname
7. Sheila Tubman was a
  1. yo-yo champion
  2. spy
  3. fake
  4. cheerleader
8. Sheila Tubman wanted to be called
  1. Mouse
  2. Smiley
  3. Sunny
  4. Bert
9. Little Jim was a character from
  1. Jimmy Yellow-Hawk
  2. Call Me Heller
  3. Going Home
  4. Freckle Juice
10. Little Jim's father was a
  1. medicine man
  2. hunter
  3. rancher
  4. farmer
11. Little Jim's teacher's name was
  1. Miss Red Owl
  2. Miss Smith
  3. Miss Yellow-Hawk
  4. Miss Skunker
12. Who plays the guitar and sings the song about "me"?
  1. Nancy
  2. David
  3. Charlee
  4. Carolyn
13. Carolyn had once taken a picture of

1. Constance Gree
  2. Mary Stolz
  3. Virginia Driving Hawk Sneve
  4. Judy Blume
14. When Charlee felt good about being herself she did a
1. cartwheel
  2. cheer
  3. somersault
  4. dance
15. David and Carolyn liked the model of the
1. locomotive
  2. airplane
  3. car
  4. town
16. The title of the show is
1. What Are You?
  2. Who Am I?
  3. Some Good Books
  4. Fun and Adventure
17. Heller had a close call with a
1. boat
  2. bus
  3. car
  4. train
18. Which story told about two children on a trestle?
1. Call Me Heller
  2. Juan
  3. Freckle Juice
  4. Me Myself, and I
19. How did Andrew get the recipe for freckle juice?
1. he stole it
  2. it was given to him
  3. he bought it
  4. he made it up
20. "Freckle Juice" did not contain
1. vinegar
  2. onion juice

3. mayonnaise
4. lemon seeds

APPENDIX C

PANEL OF EXPERTS  
REVIEWING INSTRUMENTS

Dr. Edward S. Beach, Jr.

Coordinator, Curriculum Development and Utilization  
Division of Instructional Television  
Maryland State Department of Education

Marilyn Brown

Resource Teacher  
Calvert County, Maryland, Schools

Delores Deardorff

Specialist, Curriculum Development and Utilization  
Division of Instructional Television  
Maryland State Department of Education

Evelyn Girardin

Curriculum Consultant  
Baltimore, Maryland

Mary E. Wildberger

Media Specialist  
Prince George's County, Maryland, Schools

Dr. Mohammad Shami

Consultant in Evaluation  
Division of Research, Evaluation and Information Systems  
Maryland State Department of Education

APPENDIX D

DIRECTIONS READ TO STUDENTS

Directions to Students

I am Michael Sullivan from the Maryland State Department of Education's Division of Instructional Television. I am doing a study to see how much information students like yourselves can remember after watching an instructional television program.

I would like you to help me by watching a program which I brought with me today, and answering some questions about that program. The program lasts about twenty minutes and I would like you to watch it carefully, without taking notes or discussing it. As soon as it is over I will distribute the papers with the questions. There are twenty questions on each of the papers, but the papers are not all the same. When you get your paper, put your name on the small, attached piece of paper on the left hand corner (hold up sample). Then choose the best answer for each question and circle the number in front of that answer as shown in the example (show example on blackboard).

Please answer all of the questions to the best of your ability without any discussion or help. If you have any difficulty reading the questions, raise your hand and I will help you.

APPENDIX E

CLASSROOM FEEDBACK SUMMARY

Maryland State Department of Education  
Division of Instructional Television  
Cwings Mills, Maryland 21117

ONCE UPON A TOWN CLASSROOM FEEDBACK 1975

Teacher: SUMMARY SHEET Grade level: \_\_\_\_\_

Lesson Number: 1 Lesson Title: "Who Am I?"

| BASED ON YOUR OBSERVATION OF PUPIL RESPONSES, CHECK THE COLUMNS WHICH INDICATE YOUR EVALUATION OF THIS TELELESSON AND MANUAL LESSON. | Excellent | Good | Adequate | Fair | Poor | No Opinion | Not Applicable | No Response |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------|------|----------|------|------|------------|----------------|-------------|
| 1. The degree to which the tele-lesson stimulated discussion was                                                                     | 8         | 14   | 5        | 3    |      |            |                | 17          |
| 2. The degree to which pupils demonstrated an understanding of the telelesson concept was                                            | 4         | 17   | 4        | 3    | 2    |            | 1              | 16          |
| 3. The choice of content for stimulating the pupils to use print and nonprint materials was                                          | 8         | 21   | 1        | 1    |      |            | 1              | 15          |
| 4. The choice of the vocabulary was                                                                                                  | 10        | 16   | 5        | 1    |      |            |                | 15          |
| 5. The relevance of the telelesson to the students was                                                                               | 10        | 11   | 4        | 6    |      | 1          |                | 15          |
| 6. The difficulty level of the telelesson was                                                                                        | 9         | 9    | 9        | 2    |      | 1          | 1              | 16          |
| 7. The rate of speed of the readings was                                                                                             | 11        | 13   | 4        | 1    | 1    | 1          |                | 16          |
| 8. The pace or speed of the visual material was                                                                                      | 10        | 16   | 2        | 1    | 1    | 1          |                | 16          |
| 9. The size of the visual material was                                                                                               | 13        | 14   | 3        | 1    |      | 1          |                | 15          |
| 10. The interpretation by the storyteller was                                                                                        | 13        | 12   | 8        |      |      |            |                | 14          |
| 11. The length of time allowed for each story was                                                                                    | 4         | 19   | 8        |      |      |            |                | 16          |
| 12. The use of sound effects was                                                                                                     | 12        | 14   | 7        |      |      |            |                | 13          |
| 13. The use of music was                                                                                                             | 11        | 12   | 7        | 1    |      |            |                | 16          |
| 14. The support offered by the manual for the following aspects of utilization was                                                   |           |      |          |      |      |            |                |             |
| A. Synopsis                                                                                                                          | 8         | 14   | 4        | 2    |      |            | 2              | 17          |
| B. Activities                                                                                                                        | 11        | 12   | 4        | 1    |      |            | 2              | 17          |
| C. Skills                                                                                                                            | 7         | 14   | 6        | 1    |      |            | 2              | 17          |
| D. Resources                                                                                                                         | 7         | 16   | 4        | 1    |      |            | 2              | 17          |
| 15. The television program reception was                                                                                             | 11        | 14   | 2        | 2    | 3    |            |                | 15          |

PLEASE EXPLAIN THE ITEM WHICH YOU RATED FAIR OR POOR. MAKE ANY OTHER COMMENTS YOU FEEL ARE IMPORTANT.

APPENDIX F

ATTITUDINAL FACTORS

The question of attitudinal factors, although not a major emphasis of this study, was explored to determine if attitudes towards school could have significantly influenced the results. The attached instrument was administered to thirty students in each of four settings (two open, two traditional).

A review of students responses indicated the following means:

| <u>QUESTION</u> | <u>OPEN</u> | <u>TRADITIONAL</u> |
|-----------------|-------------|--------------------|
| 1               | 3.3         | 3.1                |
| 2               | 3.4         | 3.5                |
| 3               | 3.0         | 3.2                |
| 4               | 3.6         | 3.1                |
| 5               | <u>3.5</u>  | <u>3.5</u>         |
| TOTAL           | 3.6         | 3.5                |

The observable similarity between the two groups would seem to satisfy the question of any differences in attitudes affecting student response on this study.

## CIRCLE THE BEST ANSWER:

1. I like school

|             |          |      |           |
|-------------|----------|------|-----------|
| 1           | 2        | 3    | 4         |
| very little | a little | some | very much |

2. I like my teacher(s)

|             |          |      |           |
|-------------|----------|------|-----------|
| 1           | 2        | 3    | 4         |
| very little | a little | some | very much |

3. I think I learn

|             |          |      |           |
|-------------|----------|------|-----------|
| 1           | 2        | 3    | 4         |
| very little | a little | some | very much |

4. I get to do things I like

|             |          |      |           |
|-------------|----------|------|-----------|
| 1           | 2        | 3    | 4         |
| very little | a little | some | very much |

5. People at my school like me

|             |          |      |           |
|-------------|----------|------|-----------|
| 1           | 2        | 3    | 4         |
| very little | a little | some | very much |

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A COMPARISON OF THE EFFECTIVENESS OF INSTRUCTIONAL  
TELEVISION IN OPEN AND TRADITIONAL CLASSROOMS

by

Michael F. Sullivan, III

(ABSTRACT)

A comparison was made of student performance in recalling information from an instructional television lesson by students in open and traditional classrooms. Analyses were also performed to determine if either the open or traditional classrooms were preferable for: males or females; students from urban, suburban, or rural settings; students of high, average, or low ability.

There was no significant difference in performance between students in open classrooms and those in traditional classrooms. There was no preferable setting for males, or females, or students of high, or average, or low ability. There was an indication that students from urban setting performed somewhat better in traditional classrooms than open classrooms, and students from suburban and rural settings performed somewhat better in open classrooms than traditional classrooms.

A description of the television lesson, instrument

for measuring recall, and procedures used, are included. Also included are the tables indicating the results of the various analyses.