A Comparison of Student Achievement in a Traditional Approach to Reading Readiness Instruction in Kindergarten Versus a Multimedia Approach.

Henry Newton Denham Jr
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A COMPARISON OF STUDENT ACHIEVEMENT IN A TRADITIONAL APPROACH TO READING READINESS INSTRUCTION IN KINDERGARTEN VERSUS A MULTIMEDIA APPROACH

The Louisiana State University and Agricultural and Mechanical Col. Ed.D. 1982

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A COMPARISON OF STUDENT ACHIEVEMENT IN A TRADITIONAL
APPROACH TO READING READINESS INSTRUCTION IN
KINDERGARTEN VERSUS A MULTIMEDIA APPROACH

A Dissertation
Submitted to the Graduate Faculty of the
Louisiana State University
Agricultural and Mechanical College
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Doctor of Education
in
The Interdepartmental Program of Education

by
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ABSTRACT

This study was designed to determine (1) if there are significant differences in kindergarten reading readiness scores among children taught by traditional means versus those exposed to multimedia methods, and (2) to determine if children in one socio-economic group benefit more than others from multimedia methods of instruction. Three treatment groups were utilized in the study. The first group received traditional instruction. The second treatment group received instruction utilizing multimedia materials. The third treatment group included multimedia materials with instructional television. Each treatment group consisted of three classes, one lower socio-economic class, a class from a middle socio-economic area, and a class from an upper socio-economic area.

The sample consisted of 215 kindergarten students enrolled in nine classes of nine selected schools. The schools are all part of the East Baton Rouge Parish School System of Baton Rouge, Louisiana. The school system consisted of approximately 65,000 students.

Scores from the Metropolitan Readiness Test (Level I) given during the fifth week of school served as the pretest. The Metropolitan Readiness Test (Level II) was administered as a posttest. An analysis of co-variance was run to allow the correlation between initial and final scores. The 0.05 level of significance was used in the study to test the hypotheses.

Data compiled were used to test three hypotheses. Hypotheses tested were: (1) There is no significant difference between readiness
test scores of kindergarten students whose classroom lessons are reinforced with multimedia lessons and those students who do not view the televised lessons. (2) There is no significance between readiness test scores of kindergarten students whose instructional strategies include the use of multimedia and the scores of those students not exposed to multimedia presentations. (3) There is no significant difference between readiness test scores of kindergarten students of low, middle, and upper socio-economic levels instructed by traditional versus multimedia methods.
Chapter I
INTRODUCTION

Elementary teachers are confronted with the problem of cultivating and maintaining student interest in and enthusiasm for learning. In facing this problem teachers have used various methods to maintain a student's interest including the use of supplementary materials, resource personnel, and multimedia materials (Trow, 1963). Studies have been conducted over the years to determine the effects of these individual methods in maintaining a student's interest and the effect they have upon the increase of a student's knowledge. Other studies have shown the positive influence that the various forms of media have upon instruction (Torkelson, 1972). However, a need exists for additional research in certain areas, such as instructional television (Chu and Schramm, 1967).

General statements have been made by Godwin C. Chu and Wilbur Schramm based upon the findings of numerous studies. These studies support the statement that instructional television is most effective in the elementary grades due to the more flexible schedules of these grade levels. Teacher and parent involvement has proved to be important to the success of instructional television. The importance of teacher planning and the close correlation of the television lesson to the goals and objectives of the instructional program of the class have been shown to be an important factor in the success of instructional television.
Research has shown that teachers must plan or adapt lessons to fit the televised lessons available to insure successful use of instructional television. During the early 1970's a multimedia, multisensory beginning language arts program entitled Alpha Time was developed for use in kindergarten classes (Reiss and Friedman, 1972).

The Alpha Time program was published by New Dimensions in Education, Incorporated, Plainview, New York, in 1972, and was followed by the development and production of Alpha One, a program for first-grade students. During 1974, the television program entitled "The Letter People" was developed from the goals and objectives of the two programs. There have been only two studies of the effectiveness of the programs, and neither study dealt with the effects of the television lessons upon the outcome of the programs (Office of Education, 1972; Smith, 1973).

During 1979-80, twenty elementary schools in the East Baton Rouge Parish (County) School System, Baton Rouge, Louisiana, are using the Alpha Time program. Of those twenty, twelve used the instructional television program "The Letter People" to reinforce instruction (Peterson, 1979; Cannon, 1979).

Statement of the Problem

This study was designed to answer the following questions:

1. Are there significant differences in kindergarten reading readiness scores among children taught by traditional means versus those exposed to multimedia methods that include "The Letter People"?
2. Do students from lower, middle, or upper socio-economic
backgrounds benefit more from traditional or a combination of traditional and multimedia methods of instruction?

**Significance of the Study**

Although numerous media comparative studies have been conducted in many areas of the curriculum, very few have dealt with the effects of the use of television lessons to reinforce a specific readiness program. Data need to be compiled and made available to teachers, curriculum specialists, and media specialists as to the effects of a positive correlation between behavioral objectives of the lessons of the classroom teacher and those of the television lessons.

**Theoretical Development**

**Assumptions**

This study was based upon the following assumptions:

1. that the subjects selected to participate in each treatment group were representative of kindergarten students in the public schools of East Baton Rouge Parish.

2. that the Metropolitan Readiness Tests (Level I and Level II) were valid and standardized tests.

**Hypotheses**

1. There is no significant difference between readiness test scores of kindergarten students whose classroom lessons are reinforced with multimedia lessons and those students who do not view the televised lessons.

2. There is no significant difference between readiness test scores of kindergarten students whose instructional strategies include
the use of multimedia and the scores of those students not exposed to multimedia presentations.

3. There is no significant difference between readiness test scores of kindergarten students of low, middle, and upper socio-economic levels instructed by traditional versus multimedia methods.

Delimitations of the Study

The study was limited to 215 students enrolled in nine kindergarten classes of the East Baton Rouge Parish School System during the 1979-80 academic year. The sample was restricted to (1) three classes from schools in low socio-economic areas, (2) three classes from schools in middle socio-economic areas, and (3) three classes from schools in upper socio-economic areas.

Definition of Terms

Instructional Television: A television program designed to be used in a classroom situation to provide an educational experience, usually referred to as I.T.V. but called Educational Television from the 1950's into the 1960's.

Alpha Time: A comprehensive pre-reading program to develop reading readiness that includes books, records, picture cards, board games, puzzles, filmstrips, twenty-six inflatable "huggables," and various forms of printed exercises.

The Letter People: A television program designed for instructional television to reinforce the Alpha Time program.

Reading Readiness: The probability of a child's success in beginning reading as determined by the Metropolitan Readiness Tests (MRT).
Multimedia: The integration of more than one medium in a complementary manner in a presentation or module of instruction (AECT, 1979).

Preschool: Any organized educational program for children prior to entering kindergarten.

Kindergarten: A public school program designed for students during the year immediately preceding first grade.

Traditional Instruction: Instruction that does not utilize films, filmstrips, television, or audio tapes.

Low Socio-economic School: A school in the upper 33-1/3% of schools, when ranked according to the percentage of children qualifying for federal lunch support (Hoover, 1979).

Middle Socio-economic School: A school in the mid range, between 33-1/3% and 66-2/3%, based upon the percentage of students qualifying for federal lunch support (Hoover, 1979).

Upper Socio-economic School: A school that has the lowest percentage of students qualifying for federal lunch support, between 33-1/3% and 0% (Hoover, 1979).

Design of the Study

Population and Sample

The population was defined as the kindergarten students enrolled in nine classes of nine selected elementary schools of East Baton Rouge Parish School System, Baton Rouge, Louisiana, during the 1979-80 school year. Three classes were selected from each socio-economic group.
Description of the Three Groups

Group A was composed of one class from each of three schools. In the three schools selected, a representative from each of the socio-economic levels was included. Approximately sixty-four students were instructed without television, or the Alpha Time program.

Group B was composed of one class from each of three schools. One school was selected from each of the socio-economic levels from Group B. Approximately eighty-one students were instructed through the Alpha Time program without the use of television.

Group C was composed of one class from each of three schools. One school was selected from each of the socio-economic levels for Group C. The instruction of the approximately seventy students included Alpha Time and "The Letter People" television program.

Variables

The three independent variables in this study were the three methods of instruction. The dependent variables were the readiness tests (pretest and posttest) which were given to the students in each group.

Instrumentation

Scores from the Metropolitan Readiness Test (Level I) given during the second week of October, 1979, served as the pretest. The Metropolitan Readiness Test (Level II) was given during the second week of April, 1980, and served as the posttest.

Treatment and Data Collection

The Metropolitan Readiness Test (Level I) was administered to
all students of each of the three groups in October, 1979. After completion of their respective treatments, the students took the Metropolitan Readiness Test (Level II). The tests were administered and scored by the respective classroom teachers.

Statistical Analysis

An analysis of variance was conducted to determine if a significant difference existed among the means of the three treatment groups involved. The analysis was conducted by computer using the Statistical Analysis System (SAS) at Louisiana State University in the Department of Agriculture's Office of Experimental Statistics. The analysis of variance was conducted on the means of the three subgroups to determine if a significant difference existed. The hypotheses were accepted or rejected at the .05 level of significance.
Chapter II
REVIEWS OF RELATED LITERATURE

The amount of professional literature related to the problem of the study is large. In order to cover the material, the following review is organized into three areas: (1) reading readiness in kindergarten, (2) instructional television, and (3) reading and instructional television.

Reading Readiness

During the early 1960's, according to Arthur I. Gates, there was an increasing interest in identifying effective ways of teaching children to read. The interest was partially due to public pressure to improve the reading levels of children throughout the United States. A number of questions arose from this interest that had to be answered before much progress could be made. One question was whether kindergarten children would benefit more from an unstructured or from a formal reading readiness program (Kelley and Chen, 1967). Other researchers attempted to identify methods most productive in teaching children to read (Heilman, 1977).

The success of more formal reading instruction in kindergarten has been the focus of a number of studies that compared formal reading readiness programs to unstructured programs. A longitudinal research study conducted by Joseph E. Brzeinski (1964) and Paul McKee was initiated in 1960 in the Denver Public Schools to determine the
effectiveness of beginning the teaching of reading in kindergarten. The study involved a total of 4,000 pupils from 122 classes randomly assigned by schools. Both the control group and the experimental group included sixty-one classes each. The reading progress of the students was studied through the fifth grade. While the control classes followed the regular kindergarten program, the experimental classes received beginning reading instruction for twenty minutes per day.

The data compiled at the end of the first year indicated that the students in the experimental classes scored higher than the students in the control group in recognizing letter forms, learning letter names, and identifying letter sounds. The following school year, testing revealed that the children taught beginning reading skills did not forget these skills during the summer months. By the end of the first grade, test data revealed that students from the experimental group were significantly better readers.

A longitudinal study completed in 1973 sought the effects of formal reading instruction in kindergarten on reading achievement (Beck, 1974). Students chosen to participate in the study were matched by intelligence test scores. Those students in the control group received instruction in beginning reading skills. Analysis of the data collected indicated that students of similar intelligence, when given formal reading instruction, made greater gains than students who received no formal reading instruction in kindergarten. The study was continued until these students completed the fifth grade, with those students in the experimental group scoring significantly higher than those who had received no formal reading instruction in kindergarten.
At the conclusion of a seven-year study to determine the effect a variety of materials and types of instruction have on reading achievement of first graders, it was found that kindergarten students who received a structured, sequential program of reading readiness with appropriate materials achieve significantly higher than those in regular kindergarten programs (Stanchfield, 1971). The experimental group was composed of seventeen schools selected to provide a cross section of socio-economic levels and ethnic groups. The seventeen schools selected were then matched with seventeen schools based upon academic achievement, socio-economic levels, and ethnic composition. Findings, based upon data collected, revealed that the experimental group achieved significantly higher scores than did the control group.

A study conducted in 1967 compared the reading achievement of kindergarten students who were exposed to formal reading readiness instruction and to those students who received no formal reading lessons (Kelley and Chen, 1967). The data revealed significantly higher scores for the students who received formal readiness instruction. The investigators found several other factors that contributed to higher reading achievement including: (1) educational level of parents, (2) above average mental age, and (3) above average intelligence scores and readiness scores.

A study of first-grade reading sought to determine the difference in effectiveness of increasing achievement with a traditional reading program in which no words were taught compared to a program that began with formal reading instruction in pre-primers with no previous reading readiness (Emmer, 1970). The sample included
six first-grade classes with a total of 137 pupils from a middle class suburban community in central New Jersey. Pretests were used to determine that there were no significant differences between groups in reading readiness skills and intelligence. The control group received six weeks of readiness skill training and ten weeks of reading instruction, while the experimental group received sixteen weeks of instruction in basal readers without benefit of readiness training. Data obtained from posttests indicated that the experimental group performed as well as the control group, if not better. There was no significant difference at the .05 level.

During the early 1970's, numerous comparative studies were conducted to determine the effectiveness of structured programs versus unstructured programs for kindergarten. One study sought to determine if students who were instructed by means of a language experience approach would score significantly higher than students in a structured, basal reader program (O'Donnell and Raymond, 1972). All treatment of both groups was identical except for a twenty-minute period each day in reading instruction for the control group and the language program for the experimental group. The experimental group scored significantly higher than the basal reader group on the Metropolitan Readiness Test. No significant differences were noted in auditory discrimination on the Wepman Auditory Discrimination Test. The data showed significant differences in favor of the students in the language program regardless of the individual ability of each child.

A sample of 122 students of low socio-economic background from
six kindergarten classes was used in a comparative study (Reichbach, 1973). Three classes used the Distar Reading Program published by Science Research Associates. The three classes in the control group used an informal language experience program. Data obtained from pretests and posttests on the Wide Range Achievement Test indicated that Distar students scored significantly higher than the language experience students. The research found no significant difference in the achievement of boys versus girls.

A comparative study of 327 kindergarten children sought to determine if there were significant differences among students in a highly structured kindergarten program and those in an unstructured program (Newkome, 1974). The study compared students from each of three socio-economic levels in the experimental and control groups. The experimental group was instructed in a formal or structured program and the control group in an unstructured program. The experimental group scored significantly higher on achievement tests given as a posttest.

A comparative study was done in 1976 to determine the effectiveness of a traditional language experience method as compared to a program that combined language experience and phonics (Haisley and Perion, 1977). Four classes of kindergarten children were used, with two classes in the control or traditional language experience program and two classes in the modified language experience phonics program. The experimental group scored significantly higher than the control group. The two experimental classes scored on the average at the 72 and 68 percentile on the California Test of Basic Skills,
while the control group scored on the average at the 52 percentile.

The question of which methods were most productive has been addressed by the United States Office of Education (now the Education Department) and Jeanne S. Chall (1967). Chall set out to identify the objectives and techniques used in many instructional plans devised during the early 1960's. The researcher also identified the studies that would support the use of the various plans. Chall found the job difficult because teachers were periodically adding to or modifying methods to meet the needs of a particular class and adjusting methodology to solve numerous problems inherent in behavior studies. One conclusion reached was that phonics instruction is very important in beginning reading instruction. The generalization drawn from the study by Chall was that systematic phonics programs are "as successful as, or perhaps more successful than, programs that rely on 'discovery'--the so-called linguistic approaches." In regard to individual differences, Chall stated that children of all levels of ability learn better when given a good background in phonics. The researcher noted that children of low average and average intelligence sometimes were slower showing the advantage gained from a phonics program. In children of above average intelligence, the advantage seemed to manifest itself immediately.

The First-grade Reading Study by the United States Office of Education coordinated by Guy L. Bond (1966) was a study of twenty-seven research programs. Bond described the study and its purpose in the following manner:
The major goal of the First-grade Reading Study is to explore the effects upon early reading growth of various approaches to reading under conditions that would make it possible to compare findings among a group of independent studies. As the result of a widely publicized invitation by the U.S. Office of Education, 76 proposals were received. Each research proposal submitted was reviewed by the Research Advisory Council, which selected 17 for support by the Cooperative Research Branch of the United States Office of Education. The projects were selected on the basis of their individual merit as self-contained studies having unique characteristics and at the same time being directly related to the problems and differing points of view in regard to initial reading instruction. They were also selected so that in total scope a more massive body of information about various approaches to reading instruction could be obtained for further combined analysis than had ever before been possible in the field of reading.

The twenty-seven independent studies selected for closer scrutiny came from all geographic areas of the United States. The research design, measuring instruments, and information gathered were coordinated so that comparisons among the studies could be made. The majority of the studies investigated the effectiveness of various methods of teaching reading. Included in this group were basal programs, phonetic programs, linguistic materials, language experience approaches, and the Initial Teaching Alphabet. Under Bond's direction the data from all the individual studies were treated as one large study.

Although the conclusions did not find one particular program to be distinctly better in all situations than another, it was noted that no matter what the underlying method used, work study skills need to be stressed and presented in a systematic program. This conclusion was drawn from the fact that in each study that compared a basal reader with phonetic emphasis to another method, the basal program with a
strong phonics program was clearly superior. The combined data show that students in linguistic programs scored slightly higher than other students in work recognition tests, but not in comprehension tests.

Fourteen of these studies were extended for two years so that the longitudinal effects of these programs could be studied through the second and third grades. In 1976, a report on the final results of the program stated that an emphasis on specific discrimination skills benefited the beginning reading process (Seefeldt, 1976).

Another conclusion reached was that the use of phonetic instruction resulted in increased phonetic analysis, word recognition, and spelling ability in young students. Conclusions reached indicated that positive attitudes and reading habits were stronger among students who received instruction using a basal program than positive attitudes and reading habits of students in other less formal reading programs. At the end of the first year of the project, evidence indicated that teacher effectiveness was a significant factor, but not by the end of the third year.

A study conducted in the early 1960's compared ten beginning reading programs that varied the emphasis given to phonetic instruction (Bliesmer and Yarborough, 1965). The students took the Stanford Achievement Test at the end of grade one. The analysis of data revealed that the students in the programs with a strong phonetic component scored significantly higher than those students in programs with less or no emphasis on phonics. The study included two individualized reading programs that did not prove to be as effective as their basal counterparts.
A 1974 study concluded that all rational approaches to reading include both sight-word learning and letter-sound learning and that sound blending would be an important ingredient (Venezky, 1975). This research on decoding underlined the need for mastering letter differentiation, association of a sound with a letter, and the blending of sounds to produce a word.

Two studies were conducted in 1976 to test a small group procedure for teaching consonant sounds to kindergarten and first-grade students (Hao and Sloat, 1976). The teachers were trained via videotape to use the procedures and materials to be employed. In the first study no significant differences were noted. In the second study, in which pretests and posttests were used, pupils in the experimental group showed greater gains than did those in the control group in which an unstructured program was used. The kindergarten children retained half of the sounds taught eight weeks after the program had ended.

The importance of emphasizing phonetic instruction in beginning reading has been emphasized by a number of other studies. One researcher concluded from his study that instruction using the "phonics method" was more effective with children of low initial language ability, while children with above average ability profit more from the "whole word" method (Snow, 1968). A pair of researchers conducted a study comparing two methods of reading instruction and found that the method that included phonics was more effective (Sparks and Fay, 1957). According to Jeanne S. Chall (1967) and Carol Seefeldt (1976), numerous other comparative studies of reading instruction reported
the importance of including phonetic instruction (Henderson, 1955; Sparks and Fay, 1957; Wollman, 1961; Santeusiano, 1962; Gold, 1964; Gurren and Hughes, 1965; and Sabaroff, 1971).

The area of phonics is closely related to the readiness skill of auditory perception, which consists of auditory acuity, discrimination, memory, and sequence. Auditory cues that are often referred to as phonics skills include letter names and sounds of single letters or groups of letters (Seefeldt, 1976). In 1955, two researchers reported that auditory perception, visual discrimination, and phonetic ability are more important than mental age for learning to read (Harrington and Durrall, 1955).

Three separate research studies have been conducted to determine if there existed a positive correlation between auditory discrimination and reading achievement (Kingston, 1962; Durrell and Murphy, 1963; Lowell, 1970). The findings of these three studies showed a positive value of teaching letter names and sounds (Seefeldt, 1976). A longitudinal study completed in 1968 revealed a low, but positive, correlation between the auditory test scores of a group of first-grade students and the third-grade reading achievement of the same students (Morency, 1968). A later study shows that young children are able to discriminate more easily between sounds in the beginning of words or syllables than sounds in the middle or end of words (Sapir, 1972).

Numerous studies have been conducted to determine the amount of phonics instruction that would be most beneficial to young students (Seefeldt, 1976). Two studies produced differing results, but both
concluded that moderate amounts of phonics instruction have positive effects upon reading achievement (Mulder and Curtin, 1956, and Rudisill, 1957). These findings supported the conclusion of other studies that methods of phonics instruction produce differing results, and that moderate amounts of phonics instruction are beneficial (Seefeldt, 1976).

In the area of visual discrimination, one study concluded that specific visual discrimination was effective. Studies to determine the type of visual discrimination training that was most effective have had varied results (Samuels and Jeffery, 1966). Another study found no significant differences when comparing (1) whole words, (2) sounding out words, and (3) isolated letter sounds methods of visual discrimination and their transfer effect to new words or work components (Marsh and Sherman, 1970). In a 1973 study, researchers suggested that longitudinal studies might determine if significant differences did exist between different types of visual discrimination training among preschool and kindergarten children (Della-Piana and Endo, 1973). In 1968, a comparative study was conducted to determine the effects upon visual discrimination of (1) a whole word approach and (2) an approach that emphasized grapheme-phoneme relationships (Potts and Savino, 1968). The more effective program was the one that emphasized the phonics instruction.

That phonetic instruction is an essential ingredient in developing reading readiness is stated by Carol Seefeldt (1976) and Jeanne S. Chall (1967) after their reviews of numerous studies such as those presented in this review of literature. Richard L. Venesky
(1974) best summarizes the role of the phonetic method and the whole-word method:

"... all rational approaches to reading instruction include both sight-word learning and letter-sound learning with its concomitant reliance on sound blending. At a minimum the research on decoding indicates the need for attention to letter differentiation, association of a sound with a letter, and the blending of sounds to produce a word."

**Instructional Television**

Television is the most thoroughly researched of the newer media according to John B. Haney and Eldon J. Ulmer (1975). The Institute for Communication Research identified over 350 studies conducted between 1950 and 1964 that addressed themselves to the question of "How can television be used to teach?" (MacLennan and Reid, 1964). The most common experiment designs in the early studies were those comparing the effectiveness of conventional teaching with televised instruction. Television was found to be effective for teaching at every level from preschool to adult education and in almost every area of the school curriculum. The findings in these early studies show no significant differences in measurements comparing the two methods utilized (Barbatsis, 1978).

According to Paul C. Beisenherz (1972), over a thousand studies were begun during 1954-64. The majority of these studies were comparative studies designed to determine the superiority of television instruction over direct teaching in the classroom. The enactment of Title VII of the National Defense Educational Act of 1958 encouraged a large number of these studies by authorizing the use of federal money for research, experimentation, and dissemination of information about
media. John W. Kittross (1969) stated, "... there was an 'open season' on almost any E.T.V. research problem that could be conjectured in the mind of potential 'principal investigator'."

Research in instructional television has largely been limited to comparative effectiveness studies aimed at determining the superiority of television instruction over conventional teaching in the classroom. As noted by Paul C. Beisenherz (1972), who listed seven major reviews of literature:

"... the same conclusion was drawn--students learn about as much by television as with face-to-face instruction--. Instructional television is at least as effective as ordinary classroom instruction . . ." 

In their comprehensive review, Godwin C. Chu and Wilbur Schramm (1967) listed sixty generalized statements drawn from their survey of the literature. In 1976, Monty C. Stanford added three statements to the original sixty in a revised edition of the original survey. The combined findings confirmed that, under favorable conditions, children do learn effectively from television in any subject area where learning occurs through one-way communication. They noted that instructional television can more effectively be used for elementary school children, slightly less effectively at the secondary level, and least effectively at the college level. Elementary school teachers and students were more favorable toward the use of instructional television than teachers and students in secondary school or colleges. That a favorable attitude toward instructional television does not necessarily correlate with a high degree of learning was noted in the findings. A high correlation was found to exist between the attitude of the
students toward television and the degree of knowledge attained from instructional television.

These early generalizations were supported by data collected in two studies using selected elementary schools (Moore, 1970; and Busch, 1978). The first study set out to determine the significance of the contributions of instructional television in elementary schools and to determine the relationship between the attitudes of teachers and the attitudes of the students toward television. The data revealed that a large majority of teachers hold a favorable attitude toward the use of instructional television. The study showed that language arts, science, and social studies were the subjects teachers used most from television. Those teachers with a favorable attitude toward instructional television made the most use of the medium and had less teaching experience than those teachers with unfavorable attitudes. The study found that as the number of classes sharing a television receiver increased, the number of teachers with favorable attitudes decreased (Moore, 1970). In her research, Dorothy Moore (1970) relates:

The data showed that television can contribute to learning in the elementary school by awakening and creating interest for both student and teacher and by making learning more meaningful. Television has affected the role of the teacher by requiring additional skills and abilities of the teacher. The teacher now has an aid to assist in the teaching act and his role has become more of a director of learning. Television can help the classroom teacher by assisting him in instruction and by providing him with new knowledge and new ideas. There are certain tasks that a classroom teacher can do such as interact with students, immediately answer questions, and provide personal contact, which are beyond the capabilities of television. Tasks such as lecturing and presenting information might be accomplished
equally well by television or by a classroom teacher. Television can contribute to the improvement of elementary education through making use of the unusual capacities which television possesses, such as the ability to bring all the outside world to the classroom, provide specialists in every field, show current events as they are happening and make use of theatrical materials and dramatic techniques.

Jackie S. Busch (1978) in a study including 595 students randomly selected from two school districts in Virginia, set out to determine possible changes in the effects of television upon reading since Schramm's 1961 study. The researcher set up the following hypotheses to test Schramm's findings:

1. Elementary school children with the highest marks in school were also the heaviest television watchers.

2. Television helped low achievers develop vocabulary skills that non-television children did not have.

3. Television was a major factor in the vocabulary enrichment of preschoolers and first-graders. This enrichment aided the development of reading readiness skills.

Busch's data confirmed Schramm's conclusion that the heavier readers were also the heavier viewers of television. The results of the study confirmed that preschool and primary students benefit most from television viewing. Vocabulary development in low achievers, below ten years of age, was enhanced by television. After ten years of age, children were not influenced by television in vocabulary development.

In 1976, Monty C. Stanford added three new generalizations to the original sixty generalizations of Chu and Schramm (1967). These were:
1. Supplementary activities or related adult interaction will significantly increase the effectiveness of instructional television for preschool and early elementary aged children.

2. For preschool and early elementary aged children, the use of certain production techniques appears to enhance learning significantly.

3. Formative research can significantly enhance the effectiveness of instructional television.

Stanford noted that in recent years the most important studies have been carried out in the area of early childhood education such as those involving "Sesame Street," and the Appalachia Preschool Education Program. These studies reinforced Schramm's earlier statement that preschool and primary students benefited most from television viewing.

Paul C. Beisenherz (1972) noted in his review of the literature that the television lesson forms only one part of the learning experience and, that the classroom teacher must carefully build her lesson around the television lesson. The teacher must plan to provide initial preparation, immediate follow-up, and other experiences to insure ultimate success of the television lesson. Information gathered from the Denver Project led researchers to conclude that a skillful classroom teacher was the best learning aid that could be combined with television. One researcher suggested that teacher attitudes, abilities, and personality might be important variables in research dealing with assessing the effectiveness of instructional television (Williams, 1962).
As a result of his findings, Beisenherz (1972) made a number of recommendations for future research based on an evaluation of the literature and research presented in the studies he reviewed. The following are Beisenherz's recommendations:

1. Teachers selected for participation in studies utilizing instructional television should volunteer and/or have favorable attitudes toward the use of instructional television in their classrooms. Because of the importance of the classroom teacher to the successful implementation of televised lessons in the classroom, it can be hypothesized that those teachers who react positively to this medium will be more effective in its utilization.

2. New studies should avoid comparative designs such as "televised science" versus "non-televised science" instruction. The unsuccessful attempt in prior research efforts to control all the many variables inherent in this type of design strongly suggests an emphasis on the identification and evaluation of each of the objectives of the particular television programming effort.

3. Increased emphasis should be placed on developmental (formative) research that can aid in the design and implementation of a particular television series.

   a) Care should be exercised in the selection of evaluative instruments that measure each specific program objective. Few standardized tests can be identified that provide the "match" between test objectives and the objectives of the particular television series. The increased use of locally developed and validated instruments in studies evaluating televised
instruction, however, has implications for the broad
generalization of findings to the body of television research.

b) There should be an increased emphasis on measures
of verbal and nonverbal behavior of "studio" television
teachers and classroom teachers; e.g., questioning strategies
that are consistent with the nature of the discipline
presented. Only through the identification and observation
of these behaviors can the finished television production be
maximally effective in the classroom.

c) There should be an increased emphasis on measures of
verbal and nonverbal behavior of students receiving the
televised instruction. If students do not respond to a
particular technique, question, or strategy, the implications
should be clear to the developers of instructional television
programs.

Wilbur Schramm (1977) listed emerging theories related to the
study of instructional television and suggested that researchers
begin to look at more specific aspects of televised instruction. The
author stated that, although previous research has verified that
televised instruction is effective, not enough generalized principles
or specific insights have yet been produced to provide adequate
guidelines for production. Schramm listed the concreteness of
television as its major aid to instruction and called for further study
of instructional television.

The success of instructional television depends upon the
context in which it is used as part of a total instructional program.
Effective teaching is more likely to occur when lessons are planned and interrelated with other follow-up activities or resources, and students are actively involved in the programs themselves (Wittich, 1979). Most authorities in recent years have stressed that television is only one form of media to aid instruction (Schramm, 1977; Beisenherz, 1972; and Feeley, 1976).

During the search of literature the question arose about the use of television programs developed from the goals and objectives of an instructional program already being successfully used. This author could not find a study that evaluated the effectiveness of an instructional television program designed to reinforce a specific instructional program.

**Reading and Instructional Television**

In 1963, Nila B. Smith, in her book *Reading Instruction for Today's Children*, noted:

Television has now entered the classroom as a teaching agent. Some schools are using television not only to stimulate interest in books but to teach such fundamental skills as phonics, comprehension, and speed. Controlled investigations on the effectiveness of television teaching of reading are not sufficient in number or quality to be conclusive, but they are promising.

Since that time, research has been done relating to reading and the use of instructional television which allowed a number of reviews to be compiled and conclusions to be drawn (Feeley, 1974; Barth and Swiss, 1976; and Mason and Mize, 1978).

Research into the effects of television on reading has, for the purpose of this study, been divided into two categories. The
first category includes studies that deal with television aided instruction in phonics. The second category involves studies that address the influence of television upon children's interest in reading (Feeley, 1974). A third category that will not be covered in this review, is those studies that relate television viewing time to reading habits, interest, and achievement. The first two categories contain a large number of studies related to "Sesame Street" and "The Electric Company" which provide phonetic instruction and encourage interest in reading.

"Sesame Street"--while being praised by parents and television authorities and enjoyed by its target audience, pre-schoolers and kindergarten children--has met with mixed results from educators in this country and Great Britain (Feeley, 1974). One researcher concluded from his two studies that "Sesame Street" made no significant difference in preparing poverty-level children for school (Springle, 1972). Scores from the Metropolitan Readiness Test showed that children exposed to "Sesame Street" were "no more 'ready' than either their non-head start classmates" or children in a cognitively based curriculum. A British researcher noted that "Sesame Street" was too "American for British children" due to production techniques, vocabulary differences, and a difference in viewing habits (Mayer, 1972). The British Broadcasting Company subsequently developed a reading program aimed at students whose reading skills are below average (Feeley, 1976).

Joan T. Feeley (1974), in a paper prepared for the annual meeting of the International Reading Association, noted several flaws
in the design of Herbert J. Springle's studies. Feeley noted that the sample in the studies was small and no controls were provided for home viewing. According to Feeley:

Springle's several small studies are interesting but can hardly be termed generalizable. Samples are small (24 matched pairs) and locally based. No control for at-home viewing was mentioned: if all groups were watching the show outside of school, the effect of the experimental variable was indeed diffused. In the 'classmate" study he failed to control for both IQ and social class: the mean IQ for the "Sesame Street" graduates, all head start children, was reported to be 83, whereas no IQ was reported for the classmates, described only as "children from families above poverty guidelines and . . . not elegible for headstart." Furthermore, he chose to match "Sesame Street" as a total program against two fully developed curriculums, his own interactive-manipulative and conventional pre-school program. Designed as a supplementary program for at-home or in-school use, "Sesame Street" was never intended to replace good early childhood education.

The Educational Testing Service evaluation studies provide evidence that "Sesame Street" achieved most of its goals (Ball and Bogatz, 1970; and Bogatz and Ball, 1971). Variables included in both studies were age, sex, social class, intelligence, and race. A sample of 943 students was used in the first-year study, and 566 students were included in the second-year study. According to one pair of researchers, the goals of the "Sesame Street" program were stated in behavioral terms and the Educational Testing Service attempted to compare the attainment of these goals by three-year old, four-year-old, and five-year-old children who view the program at home or at school with children who did not view the program (Mason and Mize, 1978). A study by Samuel Ball and Gerry A. Bogatz (1970) concluded:
Children who watched more of the program segments earned higher scores on the posttest and gained more in scores. Three-year-old children gained more than fours, who gained more than fives. Disadvantaged children watched less and gained less than more advantaged ones. The comparison of at-home viewers with at-school viewers was unsuccessful because so few at-home viewers watched with any consistency. Rural children gained more from viewing than did the overall sample, and the gains of Spanish-speaking children were spectacular. When the overall progress of target groups was evaluated, positive effects were found for nearly every goal attempted.

Samuel Ball and Gerry A. Bogatz (1971) reaffirmed the report of the first-year study and added that students who viewed the program both years performed significantly better in the "goal" areas that were new to the second year of the program. They also found that the second year of the study demonstrated that television programs could deal with the affective areas relevant to school learning. The experimental groups showed significant gains in reading readiness areas such as naming letters and recognizing letters, knowing letter sounds, sight reading, classifying, and left-to-right development (Feeley, 1976).

One study on the effect of "Sesame Street" on reading readiness compared the Metropolitan Readiness Test scores of students who attended kindergarten in the two years preceding the first season of "Sesame Street" with the scores of kindergarten students of 1970, the year "Sesame Street" began (Minton, 1972). The scores were analyzed by year, total group, age, sex, socio-economic class, birth order, and parochial school attendance (Minton, 1972). The scores on the total test and the six subtests were analyzed separately in each comparison made. A significant difference was found in favor of the
1970 kindergarten students on the alphabet subtest only. No significant difference was found among any other subtest or the total test scores. Minton (1972) reached the conclusion that "Sesame Street" was an effective teacher of letter recognition among kindergarten students.

"The Electric Company" was developed to "improve some of the reading skills for all first graders, as well as for those below average in reading achievement in grade two, and for those at the lowest quartile of reading achievement in grades three and four" (Mason and Mize, 1978). According to this study, the research on "The Electric Company" was conducted by three separate groups. The Ontario Institute for Studies in Education was hired to study certain auditory and visual display features and to collect formative and supportive research on attention and motivation. The Institute for Social Research at Florida State University was contracted to investigate sociological aspects of the program. Educational Testing Service conducted the summative evaluation (Mason and Mize, 1978).

The Educational Testing Service evaluated the effectiveness of "The Electric Company" with a sample of 8,000 first through fourth-grade students in four hundred classes from four areas of the United States (Ball and Bogatz, 1973). The study with in-school viewing of "The Electric Company" showed that all first and second graders in the lower half of their classes made significant gains in all areas of reading skills. Third and fourth graders made gains, but not as great as those of the lower grade children. In the groups that did not have in-school viewing no significant gains were noted. This finding was
concluded to be due to the fact that there were no preparation and follow-up activities such as those provided by classroom teachers. Other conclusions listed by George E. Mason and John M. Mize (1978) included the following:

Reading achievement on the posttest did not seem to be affected by the scheduling of the viewing. Classes which added time for viewing the televised lessons to their usual amount of time in reading instruction did not differ from classes for which the television viewing time replaced some of their usual reading instruction. Target group boys gained more than girls in grades one and four, while girls outgained boys in grades two and three. Color television was slightly less effective than black and white television. When children were grouped by decile of reading achievement, no gains could be reported for the lowest decile. When classes were encouraged to view the programs at home were compared to those not so encouraged, it was found that the actual amount of viewing differed little and that there was no difference in reading achievement for target groups, for non-target groups, and for total classes.

The second-year study found that the positive effect of the program exhibited during the first year carried over to the beginning and end of the second year. The researcher noted that there appeared to be no benefit from viewing the program for two years (Feeley, 1976). The investigators said "the skills taught by the program seemed to be mastered by most children who viewed one year of the program" (Ball and Bogatz, 1973).

Children's Television Workshop conducted extensive evaluations of its productions as shown by the studies reported on "Sesame Street" and "The Electric Company" (Feeley, 1976). These evaluations and studies were required by the various funding sources that backed the Workshop's productions. According to the study, the formative evaluations are an on-going process as cooperating teachers and field
workers suggest changes in format and content. This would provide for the needed consultations between producers of educational programs and classroom teachers as stated by Chu and Schramm (1967).

Two authors, in concluding their review of literature dealing with teaching reading through television, presented a list of thirteen conclusions (Mason and Mize, 1978). They found that television can add to a student's written and oral vocabulary. Viewing televised reading instruction in the classroom can significantly improve reading achievement for some students, especially those who are below average in reading achievement (Mason and Mize, 1978). The authors noted that home viewing of televised reading instruction is likely to have little effect on reading achievement unless active parent participation is involved. They noted that attitudes toward reading and other subjects can be developed by televised lessons.

According to one study, the use of "television-aided" reading instruction is increasing both in the United States and foreign countries (Feeley, 1976). Another study reported that 15,753 schools, or about 35% of the elementary schools in the United States, are using "The Electric Company" (Liebert, 1973). A third study reported that 39% of the schools, or 17,048 classes, were utilizing "Look and Read," another instructional television program designed to improve reading (Chovil, 1975).

According to Joan T. Feeley (1974), the Children's Television Workshop assisted in the development of television-aided reading instruction. Research indicated that television can help elementary students learn basic reading skills (Ball and Bogatz, 1970; Ball and
Bogatz, 1971; Mason and Mise, 1978; Feeley, 1976; Minton, 1972; Barth and Swiss, 1976). The degree of learning was increased with in-class viewing and follow-up activities (Feeley, 1974).
Chapter III

PROCEDURES USED IN THE STUDY

Background

Prior to beginning the study, permission was obtained from the Superintendent of the East Baton Rouge Parish School System and the Director of Research to carry out the study in the selected schools. An interview with the Director of Educational Television for the parish school system (Cannon, 1979) and the educational consultant with the dealer handling the Alpha Time program (Peterson, 1979) identified schools that could be used in one of the three treatment groups.

A list of schools provided by the East Baton Rouge Parish School Food Service supplied the necessary information to determine the economic level of each school community. A telephone interview with the administrator of each selected school was then conducted to receive permission to conduct the experiment and to identify teachers whose instructional methods would fit into one of the three treatment groups. Personal interviews were then conducted with each kindergarten teacher to determine those whose teaching methods best suited the purposes of the study. The recommendation of the school administrator and the teacher interviews were used to select the best classrooms for each treatment group.
The Sample

The study was conducted in East Baton Rouge Parish and included approximately two hundred twenty (220) kindergarten children in nine public elementary schools. Three schools from the lower socio-economic level were selected - one for each treatment group. Three schools were selected from the middle socio-economic level, and three from the upper socio-economic level, and one class from each was assigned to each of the three treatment groups.

Assignment of Treatment

Three schools, one from each economic level, were selected from the schools in the parish (county) that did not use the Alpha Time program or television receivers. These served as the control group. Three schools representing all three socio-economic levels were selected from schools using the Alpha Time program but not "The Letter People". The last treatment group of three schools was selected from schools that used both Alpha Time and "The Letter People" television programs in their kindergarten instructional programs.

Instructional Procedures

The study was conducted from the second week of October until the second week of April. Classroom instruction for each group was approximately one hour and fifteen minutes per day. Due to the limited attention span of kindergarten children this period of time was broken into small blocks of time during the morning hours.

Group A was composed of one class from each of three schools. In the three schools selected, a representative from each of the socio-
economic levels was included. Approximately sixty-four students were instructed in the traditional manner without exposure to instructional television, or the Alpha Time program. No audio tapes, films, or filmstrips were used with this group in its readiness program.

Approximately eighty-one students were included in group B. Group B was composed of one class from each of three schools. Each school represented one of the three socio-economic levels. Group B was restricted from the use of television, but did use the Alpha Time multimedia program in its instructional program.

Group C was composed of seventy students. One class from each of three schools made up Group C. One school was selected from each of the socio-economic levels. The instructional program presented the students included the Alpha Time program and "The Letter People" television program. The television program "The Letter People" was viewed for fifteen minutes twice a week.

The schools in Group A were selected from a group of forty-two schools that did not utilize Alpha Time or "The Letter People". Only twelve schools made use of the Alpha Time program without incorporating "The Letter People". Three of these schools were selected to make up Group B. The classes that composed Group C were selected from eight schools using both Alpha Time and "The Letter People". In these schools it was found that several teachers that had access to instructional television, did not utilize it on a regular basis. This limited the number of classes that were available to select from to form Group C.
Statistical Analysis

The Metropolitan Readiness Test Level I was administered during the second week of October and served as the pretest. The Metropolitan Readiness Test Level II was administered during the second week of April and served as the posttest. The tests were hand scored by the classroom teachers. The investigator compiled the data for both the pretest and the posttest scored for each group and sub-group. The sums of each set of scores were totaled and the means calculated for the pretests and posttests. An analysis of co-variance was run to allow for the correlation between the initial and final scores.

An analysis of variance was used to test the differences among the means of the three treatment groups involved. The analysis of variance was applied to the means of the three subgroups to determine if a significant difference existed. An analysis of variance was conducted to determine the effects of time upon the three treatments and the three socio-economic groups. The hypotheses were accepted or rejected at the .05 level of significance.
Chapter IV
PRESENTATION AND ANALYSIS OF DATA

Introduction

In this chapter the data collected during the study are reported and studied. All statistical procedures were accomplished by computer analysis. The SAS program was used at the Louisiana State University Department of Agriculture Experimental Statistics.

Analysis of variance was used to compare the means of the total scores in each sub set of test scores. Comparisons were made among the three treatment groups and among the three socio-economic groups included in each treatment group.

A total of 215 kindergarten students enrolled in the nine selected classes are reported as participants. Initially 220 students were included, five students were eliminated because of absentism and transfers to other schools. The data presented in Table 1 indicates the number of subjects in each treatment group and each sub-group.

<p>| TABLE I |
| NUMBER OF SUBJECTS IN EACH TREATMENT GROUP |</p>
<table>
<thead>
<tr>
<th>SEL 1</th>
<th>SEL 2</th>
<th>SEL 3</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Traditional</td>
<td>19</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>B. Alpha Time</td>
<td>27</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>C. Multimedia</td>
<td>29</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td>TOTAL</td>
<td>75</td>
<td>72</td>
<td>68</td>
</tr>
</tbody>
</table>
Treatment Groups

The three treatment groups included children (215) from all three socio-economic levels. The traditional group included a total of sixty-four students, the Alpha Time group was composed of eighty-one students, and the multimedia group totaled seventy students.

The pretest scores of all three treatment groups were closely clustered, as shown in Table II. The gains from pretest to posttest for all three groups are evident and can be seen on Table II.

Two null hypotheses related to the three treatment groups were tested at the .05 level of significance.

<table>
<thead>
<tr>
<th>TABLE II</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT GROUP TEST SCORES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>VISUAL</th>
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<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
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<td>116.333</td>
<td>144.33</td>
<td>113.333</td>
<td>147.333</td>
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<tr>
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<td>133</td>
<td>118.333</td>
<td>153.666</td>
<td>115.333</td>
<td>153.333</td>
</tr>
<tr>
<td>Multimedia</td>
<td>113</td>
<td>152.666</td>
<td>119.333</td>
<td>170.666</td>
<td>116</td>
<td>163.666</td>
</tr>
</tbody>
</table>

Hypotheses

1. There is no significant difference between readiness test scores of kindergarten students whose classroom lessons are reinforced with multimedia lessons and those students who do not view the televised lessons.

2. There is no significant difference between readiness test scores of kindergarten students whose instructional strategies include the use of multimedia and the scores of those students not exposed to multimedia presentations.
An analysis of pretest scores of the three treatment groups revealed that there were no significant differences at the .05 level among the groups (Table III). At the end of the treatment time an analysis of the posttest results revealed no significant difference at the .05 level between the scores of each group (Table IV). As shown on Table II greater gains were made by the multimedia group when compared to the regular and Alpha Time group. The same scores indicated greater gains among the Alpha Time group when compared to the regular group. The analysis of variance of the total gains of each group revealed no significant difference at the .05 level of confidence (Table V).

### TABLE III
ANALYSIS OF VARIANCE
PRETEST

<table>
<thead>
<tr>
<th></th>
<th>F Value</th>
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### TABLE IV
ANALYSIS OF VARIANCE

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<th>F Value</th>
<th>PR F</th>
</tr>
</thead>
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<td></td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>0.75</td>
<td>0.5281</td>
</tr>
<tr>
<td><strong>SEL</strong></td>
<td>3.33</td>
<td>0.1407</td>
</tr>
</tbody>
</table>

### TABLE V
ANALYSIS OF VARIANCE
GAINS: PRETEST-POSTEST

<table>
<thead>
<tr>
<th></th>
<th>F Value</th>
<th>PR F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>0.30</td>
<td>0.7569</td>
</tr>
<tr>
<td><strong>SEL</strong></td>
<td>4.14</td>
<td>0.1059</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>0.59</td>
<td>0.5962</td>
</tr>
<tr>
<td><strong>SEL</strong></td>
<td>4.73</td>
<td>0.0884</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>0.41</td>
<td>0.6889</td>
</tr>
<tr>
<td><strong>SEL</strong></td>
<td>4.59</td>
<td>0.0920</td>
</tr>
</tbody>
</table>
An analysis of gains in test scores comparing treatment and time disregarding socio-economic level revealed that the gains of no one group were significant at the .05 level. Table VI shows the results of this analysis. The gains in the area of visual discrimination were less than those in the area of language development and the total test scores (Table IV) when comparing treatment groups and time of treatment.

TABLE VI

<table>
<thead>
<tr>
<th></th>
<th>Treatment/Time</th>
<th>Socio-economic/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F Value</td>
<td>PR F</td>
</tr>
<tr>
<td>Visual</td>
<td>.51</td>
<td>.6331</td>
</tr>
<tr>
<td>Language</td>
<td>.99</td>
<td>.4461</td>
</tr>
<tr>
<td>Total</td>
<td>2.23</td>
<td>.2236</td>
</tr>
</tbody>
</table>

Therefore based upon the analysis of variance at the .05 level of significance both hypotheses were accepted.

Socio-Economic Groups

The students (215) from the three socio-economic groups were divided as equally as possible among the three treatment groups. As shown in Table I there were seventy-five students from the lower socio-economic level, seventy-two students in the middle socio-economic level, and sixty-eight students from the upper socio-economic level.

The pretest scores of the three socio-economic groups are found in Table VII. Significant differences were found to exist among the pretest scores in the visual and language areas (Table III). As
shown in Table V the most significant difference (0.0219) was found to exist in the language subtest scores.

TABLE VII
SOCIO-ECONOMIC GROUP TEST SCORES

<table>
<thead>
<tr>
<th>VISUAL</th>
<th>LANGUAGE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Low</td>
<td>101</td>
<td>135</td>
</tr>
<tr>
<td>Middle</td>
<td>113.666</td>
<td>157.666</td>
</tr>
<tr>
<td>Upper</td>
<td>121</td>
<td>158</td>
</tr>
</tbody>
</table>

An analysis of gains made by each socio-economic group regardless of treatment over the period of time of the study failed to show any one socio-economic group making significant gains at the .05 level (Table VI). The analysis revealed greater gains in the area of visual discrimination, as shown in Table VI, when comparing socio-economic levels and time of treatment.

A single null hypothesis related to the three socio-economic levels was tested at the .05 level of significance.

Hypothesis

1. There is no significant difference between readiness test scores of kindergarten students of low, middle, and upper socio-economic levels instructed by traditional versus multimedia methods.

At the end of the treatment time an analysis of posttest results revealed that no significant difference existed at the .05 level among the three socio-economic levels receiving regular, Alpha
Time or multimedia presentations (Table III) As shown on Table VI all three socio-economic groups made progress in each of the three treatments. An analysis of the overall gains of each socio-economic group revealed no significant difference at the .05 level of significance. Therefore, the hypothesis was accepted as stated.

Time

When the test data was analyzed it was found that time was a more important determinant of success than either treatment or socio-economic level. Table VIII shows that given time regardless of treatment or socio-economic level significant gains in all three areas tested. The greatest gains were made in the area of visual discrimination.

<table>
<thead>
<tr>
<th>TIME</th>
<th>F Value</th>
<th>PR F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>268.07</td>
<td>.0001</td>
</tr>
<tr>
<td>Language</td>
<td>30.62</td>
<td>.0052</td>
</tr>
<tr>
<td>Total</td>
<td>215.52</td>
<td>.0001</td>
</tr>
</tbody>
</table>
Chapter V

SUMMARY

The purpose of this study was to compare the effects of the use of multimedia materials upon readiness scores of kindergarten students. Comparisons were made with televised lessons included in the multimedia instruction and without the televised lessons in the Alpha Time instruction. Both of these methods were compared to regular readiness instruction.

The subjects were students enrolled in kindergarten classes of nine elementary schools in East Baton Rouge Parish, Louisiana. The classes were selected based upon socio-economic level, availability of materials, and instructional program being utilized at the school. The instruction was provided by the regular classroom teacher.

The students were tested in October and again in April. The resulting scores were analyzed by computer using an analysis of variance procedure to determine whether significant differences in achievement were attained among the three treatment groups or the three socio-economic groups.

Conclusions

The conclusions reached when interpreting the results of the study must be considered carefully. There are factors that limit the degree to which the results of this study can be applied to all kindergarten children. These factors include: (1) the limited size
of the study group, and (2) the participation of students in only one urban school system representing lower to upper socio-economic groups.

Since the students were selected from schools in one urban area, the conclusions may not be applicable to schools in rural or larger areas or to students in other parts of the state or the nation. The limited size of each group may restrict the application of conclusions reached being applied to larger groups.

The three treatment groups all made gains in the areas measured. The gains were not great enough to be significant at the .05 level. The null hypotheses were, therefore, accepted. Based upon the findings of this study it was concluded that the use of these multimedia presentations would not significantly improve the achievement of kindergarten students in the area of reading readiness. A second conclusion reached was that the use of televised lessons does not have a significant effect upon raising the readiness scores of kindergarten students.

The three socio-economic groups all made gains in reading readiness regardless of the method of presentation utilized. The gains were not great enough to be significant at the .05 level. The null hypothesis was, therefore, accepted. Based upon the data collected and analyzed in this study it was concluded that regardless of socio-economic level the readiness scores of kindergarten students will not be significantly affected regardless of whether multimedia materials are utilized or not.

Recommendations

The conclusions reached based on data collected in this study
appear to have general implications for elementary educators. Recommendations for further research can be drawn from the conclusions of this study.

Implications for Teaching

1. The results of this study are consistent with past studies (Springle, 1972; Feeley, 1974; and Stanford, 1976) indicating no significant difference in the effectiveness of televised instruction when compared to live instruction. Multimedia materials when used in a well planned classroom program can add variety to the total learning plan and provide the teacher varied strategies to meet individual learning needs and provide more opportunities for individual attention to students.

2. As proposed by Schramm (1977), there is a resistance on the part of teachers to use instructional television. Elementary school administrators and supervisory personnel need to actively and enthusiastically support the use of instructional television in the classroom as a strategy to provide learning alternatives for students.

3. Teachers need to be allowed input in production of all aspects of media and in the scheduling of instructional television programs to help overcome their resistance to the use of I.T.V. The television lessons for this study are not presented in the order of sequence that the Alpha Time program develops the readiness program. This was a problem noted by all of the teachers involved in the study.
Implications for Research

1. This study indicates that differences may exist in media reinforced learning, although not significant in this study. Factors that may have affected the study such as limited sample, the lack of flexibility in program scheduling and ability of teachers to utilize program guides could be addressed.

2. Longitudinal studies are needed to determine if time could affect the gains students made. There is one such program under way at this time (Peterson, 1979).

3. Further comparison of instructional television programs should be made to determine the effectiveness of using each. These studies should attempt to identify strengths and weaknesses of each program in use in classroom situations.

4. The role of flexibility of scheduling needs to be investigated. The ability of the classroom teacher to control scheduling of instructional television for classroom use could include sequence and time controls.
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VITA

Henry N. Denham, Jr. was born August 1, 1942, at Baton Rouge, Louisiana. He was graduated from the East Baton Rouge Parish public school system in 1960.

Henry received his Bachelor of Science degree in elementary education in 1965, the Master of Education in administration and supervision in 1967, and the Certificate of Education Specialist in educational media in 1976. All post graduate work was completed at Louisiana State University.

Mr. Denham has worked in the East Baton Rouge Parish School System since 1965. He has served as an elementary classroom teacher, coach and guidance teacher at Brookstown Elementary for seven years, and at Brownsfield Elementary for five years. Henry was appointed principal at Greenbrier Elementary on July 1, 1977 and is currently serving in that capacity.

Henry is married to Paula Hopper Denham and has two children, Rebecca Lea Denham and David Newton Denham.
EXAMINATION AND THESIS REPORT

Candidate: Henry Newton Denham, Jr.

Major Field: Education

Title of Thesis: A Comparison of Student Achievement in a Traditional Approach to Reading Readiness Instruction in Kindergarten Versus a Multimedia Approach

Approved:

Charlie W. Roberts
Major Professor and Chairman

William Rogers
Dean of the Graduate School

EXAMINING COMMITTEE:

Sandra J. Maxey

Peter L. Pettitt

Pauline M. Rankin

Robert E. Spears

Date of Examination:

March 27, 1982