Cognitive and Affective Results of Three Methods of Presenting Stories to Third Grade Students.

Emeline Susan Staples

Louisiana State University and Agricultural & Mechanical College

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STAPLES, EMELINE SUSAN
COGNITIVE AND AFFECTIVE RESULTS OF THREE
METHODS OF PRESENTING STORIES TO THIRD GRADE
STUDENTS.

THE LOUISIANA STATE UNIVERSITY AND
AGRICULTURAL AND MECHANICAL COL., PH.D., 1979
COGNITIVE AND AFFECTIVE RESULTS OF THREE METHODS
OF PRESENTING STORIES TO THIRD GRADE STUDENTS

A Dissertation

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requirements for the degree of
Doctor of Philosophy

in

The Interdepartmental Program
of Education

by
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M.A., San Jose State University, 1971
August, 1979
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ABSTRACT

The purpose of the investigation was to compare the effectiveness of three different methods of storytelling in the media center for both cognitive and affective learning by third grade students: (1) video tape, (2) audio tape, and (3) live storytelling presentations. As a second dimension to the problem, the subjects were classified into sub-groups on the basis of standardized reading comprehension test scores. Analysis was repeated to determine whether students with low, middle, or high ability in reading comprehension responded with any significant difference in terms of achievement or attitude among the three treatment groups.

One hundred seventy-six (176) subjects enrolled in the third grade of the West Baton Rouge Parish Schools, (Port Allen, Louisiana) participated in the study. In each of three elementary schools, students were randomly assigned to treatment groups. All instruction and data collection was conducted by the investigator in the schools' media center facilities. All subjects were exposed to two stories, but in only one of the three methods of presentation. The two stories used were selected from those recommended for third grade by The Elementary School Library Collection. Immediately following each presentation, two data collecting instruments were administered, a multiple choice comprehension test and an attitude scale. Resulting scores were subjected to computer analysis using an analysis of variance statistical procedure with all tests for significance at the .05 confidence level.
In comparisons for the cognitive aspect of the study, those students who received the live storytelling presentations (N=57) scored significantly higher than those who listened to audio tapes (N=62). No significant difference was found to exist for comparisons of the video tape presentations (N=57) to either of the other two methods among the comprehensive groups.

Among the sub-groups, a significant difference was found in favor of the live storytelling group when compared to the audio tape group for low ability readers. Comparisons of all three treatments among the subjects classified as middle and high ability readers yielded no significant differences.

For the affective aspect of the experiment, no significant differences were found among any of the comparisons in the comprehensive or sub-groups.

The investigator concluded that although audio taped stories were not an adequate substitute for live storytelling to facilitate cognitive learning for heterogeneous groups, video taped versions of stories were relatively as effective as presentations by a storyteller. For middle or high ability readers, all three methods of presentation were equally effective, but for students with low skill in reading comprehension, the audio tape presentation was significantly less effective than the other two. The study reinforced the need for further research regarding the relationship of media and learning in the affective domain.
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Chapter 1

INTRODUCTION

Elementary media personnel and classroom teachers have commonly used a wide variety of trade editions of picture book stories to enhance the language arts program. The National Council of Teachers of English has endorsed this practice as an expedient to facilitate learning to read, enriching the child's language usage, nourishing the child's imagination, promoting concept development, and facilitating the development of listening skills (Cullinan and Carmichael, 1977). Traditionally, the presentation mode employed has been the live storytelling session conducted by the teacher with the book displayed to show the illustrations. Modern technology, however, has provided educators access to a wide variety of other mediated resources which can be utilized to satisfy the requirements of diverse learning styles.

Greater awareness of individual differences, together with emphasis on systematic planning in education, require that effective instructional design incorporate every possible teaching-learning strategy to bring about the most efficient learning and productive allocation of resources. The systematic approach to instructional technology requires planning for instructional design to focus upon individual students - their special needs and capabilities and their interests, motivations, and styles of learning (Brown, 1977).

Writing in the Second Handbook of Research on Teaching, Levie and
Dickie (1973) further affirmed the importance of individualization by citing previous research which indicates that the special characteristics of the learner, as well as the nature of the objectives, must be analyzed prior to media selection (Levie & Dickie, 1973).

An assessment of individual differences which exist among learners has frequently involved an evaluation of their intellectual abilities, communications skills, motivation levels, and achievement level prior to instruction. More recently, however, educators have recognized that students may possess differences in their facility to learn through the various sensory modalities. For some children, external stimulation to the sense of sight may produce more productive learning while for other children an auditory approach could be more conducive to learning (Rees, 1975).

The literature of educational media suggests the existence of individual differences in sensory modality preference for cognitive learning. Although researchers have determined that the channel (or modality) of communication through which a student receives a message may affect learning outcomes, precise instruments for measuring modality preference among students do not presently exist.

Research has also indicated that the channel through which students learn and the particular attributes of the media employed may affect their affective response. There appears to be positive relationship between attitude and achievement (Simonson, 1978). Although little is known conclusively about the precise nature of the correlation of these two variables, learners who have a positive
attitude in a particular content area have also tended to be high achievers in that area. In general, students have also had a preference for learning via mediated resources. Since the type of media selected may influence attitude, and attitude may affect cognitive achievement, the "affective consequences of mediated instruction may be one of the most critical results of, or rationales for, the use of media in teaching." (Simonson, 1978:20)

STATEMENT OF THE PROBLEM

This study was an attempt to answer the following question: Will third grade students who experience stories presented in three different methods score differently on (1) multiple-choice comprehension tests, and (2) attitude scales designed to measure enjoyment of the story presentations, and motivation to read the books? The question was elaborated further by asking whether students determined to have low, middle, or high ability in reading skills will benefit equally from the same three presentation modes.

The three presentations included: A. Video tapes of storytelling sessions conducted by the investigator. B. Audio tapes of storytelling sessions conducted by the investigator. C. Live storytelling by the investigator.
SIGNIFICANCE OF THE STUDY

Although numerous media comparison studies have been conducted in a great variety of content areas, very few of these experiments have been concerned with storytelling and none have been discovered with treatments that are conducted in the environment of the school media center. Factual research data should be made available to elementary media specialists and classroom teachers as a basis for decision making regarding instructional strategies designed for individual students with diverse learning characteristics.

The great majority of media comparison studies have focused on the cognitive domain while disregarding learner attitude as an important variable. Researchers have specifically called for further study in the affective realm to compare learner attitude toward the same content delivered via different media (Simonson, 1978).

THEORETICAL DEVELOPMENT

Assumptions

This study was based upon the following assumptions:

1. that the subjects randomly selected to participate in each treatment group are representative of third grade students in the West Baton Rouge Parish Schools.

2. that the SRA Achievement Series: Reading - Primary II, Comprehension and Vocabulary total score (Science Research Associates, 1972), is a valid and reliable standardized test and thus provides a means to classify students as to low, middle, or high ranges of skill in reading.
3. that the multiple-choice comprehension tests constructed by the investigator are at a level of difficulty appropriate for third grade students.
4. that motivation to read and attitude about a story can be measured.

Hypotheses

Two sets of hypotheses, twelve in each, expressed as $H_1-H_{12}$, were generated by the two aspects of this experiment: cognitive and affective. For statistical purposes these twenty-four hypotheses were expressed in the null form and were tested at the .05 level of significance.

Part I - Cognitive Hypotheses:

$H_1$: There is no significant difference between comprehension test scores of third grade students who view video tape versions of storytelling sessions for selected stories and third grade students who listen to audio tapes of the stories.

$H_2$: There is no significant difference between comprehension test scores of third grade students who view video tape versions of storytelling sessions for selected stories and third grade students who experience live storytelling sessions for the stories.

$H_3$: There is no significant difference between comprehension test scores of third grade students who listen to audio tape versions of selected stories and third grade students who experience live storytelling sessions for the stories.
\(H_4: \) There is no significant difference between comprehension test scores of third grade students classified as low ability readers who view video tape versions of storytelling sessions for selected stories and such students who listen to audio tapes of the stories.

\(H_5: \) There is no significant difference between comprehension test scores of third grade students classified as low ability readers who view video tape versions of storytelling sessions for selected stories and such students who experience live storytelling sessions for the stories.

\(H_6: \) There is no significant difference between comprehension test scores of third grade students classified as low ability readers who listen to audio tape versions of selected stories and such students who experience live storytelling sessions for the stories.

\(H_7: \) There is no significant difference between comprehension test scores of third grade students classified as middle ability readers who view video tape versions of storytelling sessions for selected stories and such students who listen to audio tapes of the stories.

\(H_8: \) There is no significant difference between comprehension test scores of third grade students classified as middle ability readers who view video tape versions of storytelling sessions for selected stories and such students who experience live storytelling sessions for the stories.

\(H_9: \) There is no significant difference between comprehension test scores of third grade students classified as middle ability
readers who listen to audio tape versions of selected stories and such students who experience live storytelling sessions for the stories.

$H_{10}$: There is no significant difference between comprehension test scores of third grade students classified as high ability readers who view video tape versions of storytelling sessions for selected stories and such students who listen to audio tapes of the stories.

$H_{11}$: There is no significant difference between comprehension test scores of third grade students classified as high ability readers who view video tape versions of storytelling sessions for selected stories and such students who experience live storytelling sessions for the stories.

$H_{12}$: There is no significant difference between comprehension test scores of third grade students classified as high ability readers who listen to audio tape versions of selected stories and such students who experience live storytelling sessions for the stories.

Part II - Affective Hypotheses:

$H_1$: There is no significant difference in response to the attitude scale of third grade students who view video tape versions of storytelling sessions for selected stories and third grade students who listen to audio tapes of the stories.

$H_2$: There is no significant difference in response to the attitude scale of third grade students who view video tape versions of
storytelling sessions for selected stories and third grade students who experience live storytelling sessions for the stories.

\( H_3 \): There is no significant difference in response to the attitude scale of third grade students who listen to audio tape versions of selected stories and third grade students who experience live storytelling sessions for the stories.

\( H_4 \): There is no significant difference in response to the attitude scale of third grade students classified as low ability readers who view video tape versions of storytelling sessions for selected stories and such students who listen to audio tapes of the stories.

\( H_5 \): There is no significant difference in response to the attitude scale of third grade students classified as low ability readers who view video tape versions of storytelling sessions for selected stories and such students who experience live storytelling sessions for the stories.

\( H_6 \): There is no significant difference in response to the attitude scale of third grade students classified as low ability readers who listen to audio tape versions of selected stories and such students who experience live storytelling sessions for the stories.

\( H_7 \): There is no significant difference in response to the attitude scale of third grade students classified as middle ability readers who view video tape versions of storytelling sessions for selected stories and such students who listen to audio tapes of the stories.

\( H_8 \): There is no significant difference in response to the attitude scale of third grade students classified as middle ability readers
who view video tape versions of storytelling sessions for selected stories and such students who experience live storytelling sessions for the stories.

H₀: There is no significant difference in response to the attitude scale of third grade students classified as middle ability readers who listen to audio tape versions of selected stories and such students who experience live storytelling sessions for the stories.

H₁₀: There is no significant difference in response to the attitude scale of third grade students classified as high ability readers who view video tape versions of storytelling sessions for selected stories and such students who listen to audio tapes of the stories.

H₁₁: There is no significant difference in response to the attitude scale of third grade students classified as high ability readers who view video tape versions of storytelling sessions for selected stories and such students who experience live storytelling sessions for the stories.

H₁₂: There is no significant difference in response to the attitude scale of third grade students classified as high ability readers who listen to audio tape versions of selected stories and such students who experience live storytelling sessions for the stories.
DELIMITATIONS OF THE STUDY

Population

The study was limited to those students:

1. who were enrolled in the third grade in the schools of West Baton Rouge Parish, Louisiana during the fall semester of 1978, and
2. who were in attendance for both of the class periods of presentation and testing.

Instruments and Materials

1. Only those responses which could be recorded through the medium of pencil-and-paper, multiple-choice testing instruments were measurable.

2. The selection of picture book stories chosen for use in the study was limited to titles which met these criteria: (a) recommended for third grade by The Elementary School Library Collection (Van Orden, 1977), (b) prior successful use in the third grade by the investigator, and (c) consultation with Laura W. Simoneaux, Reading Specialist, West Baton Rouge Parish Schools.

3. The video tape versions of the stories were recordings of live storytelling sessions conducted by the investigator in the color television studio at the Instructional Resources Center, Louisiana State University, Baton Rouge, Louisiana.

4. The audio tape versions of the stories were cassette tapes dubbed from the sound track of the corresponding video tapes.
DEFINITION OF TERMS

**Picture book:** A short story book in which the illustrations "are so placed that they give visual action to every page." (Miller, 1957:308).

**Storytelling:** For the purposes of this study, the live presentation of the exact text of a story by the investigator while displaying the book so that the pictures can be viewed by the students.

**Video tape:** "A magnetic tape on which video and audio signals may be (or are) recorded for television use." (Association for Educational Communications and Technology, 1977:245) For the study, the video tape was a recording of a storytelling session conducted by the investigator.

**Audio tape:** "A strip of magnetic tape on which recorded electrical signals may be converted to reproduce sound." (Association for Educational Communications and Technology, 1977:236) For the study, the audio tape was a narration of the exact text of the story produced by dubbing from the sound track of the video tape version.

**Standardized test:** "... a test for which content has been selected and checked empirically, for which uniform methods of administration and scoring have been developed, and which may be scored with a relative high degree of objectivity." (Good, 1973: 603)

**Comprehension test:** "... a test to determine how much the subject understands of what he reads." (Good, 1973:596)
Scale, attitude: "An attitude measuring instrument, the units of which have been experimentally determined and equated; designed to obtain a quantitative evaluation of an attitude." (Good, 1973:507)

Low ability readers: Those students in the third grade in West Baton Rouge Parish, Louisiana whose total scores on the Science Research Associates Achievement Series: Reading - Primary II standardized test, administered in April of 1978, fall within the range of the lower one-third, measured in terms of grade equivalency.

Middle ability readers: Those students in the third grade in West Baton Rouge Parish, Louisiana whose total scores on the Science Research Associates Achievement Series: Reading - Primary II standardized test, administered in April of 1978, fall within the range of the middle one-third, measured in terms of grade equivalency.

High ability readers: Those students in the third grade in West Baton Rouge Parish, Louisiana whose total scores on the Science Research Associates Achievement Series: Reading - Primary II standardized test, administered in April of 1978, fall within the range of the upper one-third, measured in terms of grade equivalency.

DESIGN OF THE STUDY

Population and Sample

The population was defined as the third grade students enrolled in the three public elementary schools of West Baton Rouge Parish during
the Fall semester, 1978. All third grade students were included in the research, but as a participant of only one of the three treatment groups. Subjects remained in the same treatment group for the presentation of both stories used in the research.

Descriptions of the Three Groups

Group A was composed of 83 students who viewed the video tape versions of two stories.

Group B was composed of 85 students who listened to the audio tape versions of two stories.

Group C was composed of 84 students who experienced the live storytelling sessions for two stories.

Variables

The three independent (or antecedent) variables for this study were the three modes of presentation: viewing video tapes, listening to audio tapes, and live storytelling by the investigator. The dependent (or predicted) variables were the comprehension test scores for the cognitive aspect of the study and the responses to the attitude scale for the affective aspect of the study.

Instrumentation

Comprehension tests. Since no existing comprehension tests were found to be available for the two stories used in the research,
instruments were constructed by the investigator. Validation of both tests was accomplished by obtaining a consensus among a committee of authorities in elementary reading and children's literature. The two instruments, as revised from suggestions of the validation committee, were pilot-tested with third grade students at Northside Elementary School in Hearne, Texas, to establish test-retest reliability and provide further refinement.

**Attitude scale.** An attitude scale was constructed by the investigator to measure subjects' affective reactions to the stories in the three presentation modes. As a indication of their feelings, students were asked to mark one of three "faces" (see appendix, page 112). Two items in the scale were relevant to the study, while the remaining items had no bearing upon the study and were included in the scale to make its purpose less obvious.

Three third grade teachers in West Baton Rouge Parish, Louisiana participated in validating the instrument.

**Standardized test.** Scores from the Science Research Associates Achievement Series: Reading - Primary II, which is administered annually in the Spring to third grade students in West Baton Rouge Parish, was used. The total scores on reading comprehension and vocabulary for April, 1978, were used to classify students as low ability readers, middle ability readers, or high ability readers.
Treatments and Data Collection

All students were exposed to two stories, but through a different presentation mode; each treatment was conducted twice in each school. All treatments were conducted by the investigator in the school media center/library facilities in groups of twenty to twenty-five students. Immediately following the presentation of each story, the multiple-choice comprehension test and the attitude scale were administered by the investigator. Both instruments were read orally with students as they marked their answers.

Statistical Analysis

Part I - Cognitive. A 3 x 3 factorial analysis of variance was accomplished by using a WYLBUR computer program to compare the group means of the total scores on the comprehension tests for two stories among the three comprehensive treatment groups and among the subgroups for the three levels of reading ability. The twelve hypotheses were accepted or rejected at the .05 level of significance.

Part II - Affective. The responses provided by subjects on the attitude questionnaire to item 2 and item 5 were converted to a numerical value and totaled. A 3 x 3 factorial analysis of variance was accomplished by using a WYLBUR computer program to determine the significance of the differences among scores of the three comprehensive treatment groups and to ascertain differences among the subgroups for the three levels of reading ability. The twelve hypotheses were tested at the .05 level of significance.
Chapter 2

REVIEW OF RELATED LITERATURE

The professional literature related to the problem of the study is immense in volume. In order to cover this body of knowledge, the following review is structured into three separate categories dealing with (1) educational television, (2) listening, and (3) comparative media research examining more than one type of media in the same experiment and investigating the relative effectiveness of single versus multiple channels of communication. The discussions of television and listening are intentionally cursory in nature. They are followed by a more thorough discussion of comparative media research in which single channel presentations (audio) are compared with presentations that stimulate more than one sensory channel (audio-visual).

EDUCATIONAL TELEVISION

Television is the most thoroughly tested and researched format of the newer media (Haney, 1975). Beginning in 1950, numerous studies have been conducted with the most common research design comparing conventional teaching with televised teaching. Television has been shown to be effective for teaching at every level from pre-school to adult education and in almost every subject in the school curriculum. The predominant finding in these studies has been no significant difference in measurements between the two methods employed.
Reid and MacLennan (1967) examined nearly 350 research reports in instructional television and film for the period 1950-1964 and listed them with an abstract for each study. Their document is prefaced with an evaluative article authored by Leslie P. Greenhill. The largest category of research was that which compared televised instruction with direct instruction, while few of the studies dealt with production variables in television programs. The results of the majority of these studies revealed no significant difference in measured performance at the .05 confidence level. Findings regarding the affective response to instructional television were less conclusive. In some studies students were found to have a highly favorable attitude toward television while in others, students were reported to have a negative or neutral response. No relationship was discerned between attitude or preference for the mode of instruction and the outcome of the instruction in terms of test scores.

A similar survey focusing entirely on television was conducted by Chu and Schramm (1967) and resulted in sixty generalized statements. Their findings confirmed that, given favorable conditions, children do learn efficiently from television for any subject where learning occurs through one-way communication. They also found televised instruction to be most effective at the elementary level, somewhat less effective at the secondary level, and even less effective at the college level. Summarizing a number of careful studies regarding the affective response to television revealed "an inverse relationship between favorable attitudes and grade level . . ." (1967: 61). The evidence showed that elementary students were more receptive
to instructional television than students at the secondary or college levels. Chu and Schramm also found that a favorable attitude toward instructional television does not necessarily correlate with a high degree of learning. A positive correlation was found to exist between the attitude of the classroom teacher toward television and the attitude of his students toward the medium. A more recent investigation of the function of educational television in selected elementary schools confirmed this evidence (Moore, 1970:2618-A).

Stanford (1975) continued the Chu and Schramm survey with a report to summarize and identify any new significant trends or conclusions that would update their findings. He found that very little had been added to the Chu and Schramm generalizations, but noted that the most informative of the more recent studies have been carried out in the area of early childhood education to evaluate such programs as "Sesame Street" or projects as the Appalachia Preschool Education Program. On the basis of this research with primary and preschool children, Stanford (1975:3-5) stated three new generalizations:

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.

Recent researchers of instructional television have pointed out the need for more precise measuring instruments and a standard methodology for evaluation (Friedlander, 1975). Because production expenses
are high, additional evaluative data is needed to justify cost
effectiveness.

Ray (1977) was interested in the communication skills of fifth
and sixth grade children. Speaking, reading, and writing were of
particular concern. She described a discovery approach for teaching
these skills through instructional television. Ray concluded that,
"television cannot teach it all" but this means can be used to help
promote instruction (1977:21).

Researchers have devoted some attention to the hypothesis that
instructional television is most effectively used when integrated
with other teaching strategies in a total program. Henderson and
Swanson (1978) used televised instruction to teach conceptual behavior
to preschool children. Subjects who experienced televised instruc­
tion and a directed participation approach outperformed a group which
experienced television only and a comparison group. Fifty-three boys
and girls enrolled in a Head Start program on an Arizona Indian
Reservation participated in the experiment.

Schramm (1977) listed a number of emerging theories relating to
the study of instructional television and suggested that researchers
turn from a macro-approach to a micro-approach. Although previous
research has verified that televised instruction is effective, not
enough generalized principles or specific insights have yet been pro­
duced to provide guidelines for production. Schramm called the con­
creteness of television its major contribution to instruction and
discussed areas suggested for further investigation: (1) the codes of television, (2) attention span, (3) unintended or indirect effects of television, and (4) teacher resistance to television.

Wittich (1979) concluded that the success of instructional television depends upon the context in which it is used as part of a total instructional system. Effective communication is more likely to occur when lessons are planned, interrelated with other follow-up activities or resources, and students are actively involved with participation in the programs themselves.

LISTENING

The first scientific investigation of listening was conducted by Paul Rankin in 1926 who reported that this receptive communication skill is used to a greater extent than reading, writing, or speaking (Duker, 1973). The earliest major study of listening at the elementary level was concerned with the amount of time students were required to spend listening in the average elementary classroom (Wilt, 1950). Observations revealed that demands made on 530 children to listen in the classroom required 58% of the school day, which was in excess of the estimates made by teachers in these classrooms (Wilt, 1950).

While minimal attention was devoted to the importance of listening in the learning process prior to the Wilt thesis, after 1950 the dramatic increase of material devoted to the subject in educational journals reflected an increasing concern and a body of research literature emerged. Keller (1960) reviewed the major findings of the period 1950-1960:
1. Blewett found that listening and reading skills were based on different intellectual capacities.

2. Brown and Carlson found only small correlations between listening comprehension and reading comprehension tests.

3. Biggs concluded that her diagnostic listening and reading tests did not measure the same factors.

4. Stromer concluded that improved reading comprehension did not correlate positively with improved listening comprehension.

Stodola (1962) conducted an experimental study to determine if variation among presentations would have different effects on listening comprehension tests at the high school, junior high, and elementary levels. The methods employed were teacher readings, sound film, and audio tape. For all levels there was no evidence of presentation causing any significant variance in test scores.

Duker (1968) compiled the most comprehensive annotated bibliography of the research in listening and supplemented it with an extensive collection of readings (1971). A theme that runs throughout this literature is the question of what relationship exists between reading ability and listening skill. Since both are receptive communication skills, the assumption is logical that they are based on common factors with instruction in one correlating positively with a gain in skill for the other. Contradictory conclusions have been asserted. Hollingsworth (1968) and Johnson (1974) found that listening skill and reading comprehension scores were highly correlated. Levey (1975) affirmed this conclusion for average and high achieving readers; however, he found that low achieving readers were an exception to this
pattern. In an investigation with fourth grade subjects, Levey found listening comprehension scores of low achieving readers was as high as those of their peers who could read well, suggesting that their instruction would be more effective if received aurally. She further concluded that achieving readers do not have significantly better listening skills than low achieving readers.

Devine (1967) reported on several studies in which there were opposed findings; there was no significant relationship between instruction in listening and higher scores in reading comprehension.

Another pertinent question raised in numerous research studies on listening relates to the relative effectiveness of a visual (reading) versus an aural (listening) approach for learning. The findings of these studies have been in sharp conflict due to many inconsistencies, with some favoring the visual mode and some the auditory mode, while many others showed no significant differences. Powers (1977:29) reported on a survey of thirty-four major studies by Day and Beach in which they developed generalizations regarding factors affecting student comprehension for the two modes:

1. The combined effect of visual and oral produces greater learning than either alone.

2. Familiar material is better learned in the auditory mode, while unfamiliar material is learned better in the visual mode.

3. The advantage of visually presented material increases with intelligence and higher achievement in reading comprehension.
4. While the effectiveness of visually presented material is inferior for the six year old, by age sixteen it is the superior presentation mode.

5. Difficult material is learned most effectively through a visual presentation, while an auditory presentation is a better learning mode for easy material.

6. Immediate recall is enhanced with a visual presentation, and delayed retention is favored with an auditory presentation.

7. The most important advantage of the visual presentation is the referability.

Research by other investigators, however, has opened these generalizations to question and a large body of contradictory evidence is present in the research literature. For example, Jester (1966) rejected the first generalization that learning is more efficient through a combination of visual and oral modes. He found that when the pace of the presentation is increased, subjects tend to block out either the auditory or the visual stimulus and process information in only one channel. Some individuals, he concluded, have a natural preference for the visual modality, while others adapt better to the auditory modality.

SINGLE CHANNEL VERSUS MULTIPLE CHANNEL PRESENTATIONS: COGNITIVE AND AFFECTIVE RESULTS

Research dealing with comparisons of single channel and multiple channel presentations began when audiovisual materials became readily
accessible to students and educators. All populations have been studied, and investigations have ranged from simple and direct to complex and general.

Mowbray (1953) based his study on the position that a combined audio and visual presentation is more successful than either format in action alone. He phrased several questions based on impact and conflict. Using a series of prose passages, Mowbray found that, "for a simultaneous presentation, significantly greater deterioration (from a nonsimultaneous level) occurred with the easy material." (1953:370) According to the writer, this finding was consistent with earlier research.

Research on single channel and multiple channel communication was comprehensively reviewed by Hartman (1961) who suggested a model for future activities. In his opinion, research dealing with the channels of communication preceded the media since human sensory modalities correspond to communication channels. Hartman spent some time on the production aspects of audio and visual material. He also commented on assessment techniques stating that paper and pencil assessment techniques fall short in measuring multiple channel learning. Erroneous results may be generated when verbal descriptions are used to assess pictorial information.

According to Williams and Derks (1963), aural, visual and combined presentations of material may offer different cues to pronunciation. They investigated individual subjective rating of pronunciatory
ability and association value concluding that presentation mode had a significant effect on subject performance.

Van Mondfrans and Travers (1965) studied combinations of sense modalities in the presentation of information as well as the relationship of these combinations to learning associations. Their hypotheses centered on the effectiveness of combinations of presentation mode in learning object name paired associates. Additionally, they hypothesized that the audio only format would be associated with less learning than the others while no differences would occur in the case of multiple channel and single channel presentations. Learning differences attributable to presentation mode did occur. Video presentations were more successful while the number of channels employed was not a meaningful factor.

Severin (1967) asserted that learning will increase in proportion to the number of available cues and the information gain increases as the similarity of the testing and presentation setting approach each other. Four theories were stated and six conditions were established to test them with junior high school students serving as subjects. Stratification based on intelligence test scores took place and subjects were assigned to one of six treatment groups. When a series of words was tested for recognition, audio with related picture was linked to significantly higher performance. Interestingly, conditions with the greatest number of irrelevant cues resulted in greater recall. In general, multiple channel communications seemed
to be more meaningful than single channel communications when relevant cues were summed over channels. When irrelevant cues were combined, single channel appeared to be more effective.

Cooper and Gaeth (1967) studied the relationship between modality, age, and meaningfulness in verbal learning. Subjects were 932 students at five grade levels. The writers found that their subjects showed no partiality toward materials considered to be meaningful. Preferences were attributed to habit.

Visual perception was superior to auditory perception in terms of form presentation (Baker and Payne, 1969). Twenty-five metric figures were prepared in visual and auditory forms and 95 undergraduates participated in the effort. Significance occurred at the .01 level.

Hsia (1968) commented on the relative effectiveness of audio, visual, and audiovisual materials. In his opinion, many discrepancies existed. These discrepancies may be attributed to the failure of investigators to account for the capacity limit theorem and redundancy.

Later, Hsia (1971) offered a more comprehensive discussion. He tried to determine why media differed in effectiveness. To date, general conclusions cannot be formed. The amount of information produced by media was compared to the individual's information processing capability. Specifically, "central nervous system capacity is less than the sum of A and V modality capacity; therefore, its saturation can be reached by either." (1971:65) Aspects of the presentation itself and its difficulty level for two important variables in the information processing function.
Wetstone and Friedlander (1974) studied primary level children and compared their cognitive response to stories presented in three ways: live, video tape, and audio tape. Comprehension tests for each treatment group were presented in the same mode as the stories. A significant difference was found to exist between the video tape group and the audio tape group, with the video tape group showing the higher mean score. Data suggested that children's comprehension was substantially influenced by production variables, and the researchers called for systematic evaluation of media and further research regarding other instructional variables.

Hochlander (1976) compared achievement gains associated with video cassettes and printed materials. College undergraduates served as subjects for the study. Students who used videocassettes had higher scores than the others. The difference, however, was not significant.

Machula (1977) used factor analysis to explore the affective dimension through videotape, audiotape, and print. Three groups were formed using college undergraduates as subjects. Each group experienced a different presentation. A semantic differential, composed of fifteen scales and seven concepts was used to evaluate the program. Factor analysis yielded three factors. One factor centered on the Evaluation component and another focused on Potency-Credibility. The third factor, according to the writer, stood alone. Analysis of variance showed that the video group perceived the presentation less favorably with regard to the second factor than the other groups. The difference was significant at the .05 level.
Phair (1976) compared cognitive learning of sixth grade students in social studies through four presentation versions: film, filmstrips, audio only, and print. He concluded that more effective learning results in combined visual and auditory modes rather than through sound or print alone.

Witzman (1977) compared auditory modes with the traditional storytelling presentations by the teacher using kindergarten children as subjects. The investigator found the highest performance for retention of detail about the story was obtained by the traditional teacher/child method and concluded that "the teacher is still the best medium for conveying information." (1977:7027-A)

In another study, however, conducted at the third grade level, the auditory mode was found to be the most effective medium in enhancing language performance (fluency of word use, vocabulary sophistication) as measured by asking subjects to retell the story back to the investigator (Walker-Dalhouse, 1978).

McBride (1977) selected 50 sixth grade boys and girls from a population of 182 to participate in a study regarding the existence of modal preference. The Morse Code for English alphabet letters was used on an immediate presentation short term memory basis for selection. Nine students were auditorially preferred, six were visually preferred and 35 were bimodal. McBride's hypotheses anticipated consistency between selection procedure modal preference designation and performance on either the Listening or Reading forms of the Iowa Tests of Basic Skills, but her hypotheses were not
confirmed. She attributed this finding to the small number of subjects and the wide variance in their performance scores. McBride asserted that auditory skills acted as a reading predictor for girls. With regard to her earlier rationale for nonsignificance, this finding must be questioned. However, gender may in fact be associated with performance and this point deserves further attention.

Quisenberry, Walther and Reynolds (1978) traced the literature dealing with children's television viewing and aggressive behavior. Watching violent television programs in the early years probably leads to more aggressive behavior. Naturally, this finding is not a firm one. The variables of intelligence, socioeconomic status, aspirations, religious practice, ethnicity, and parental disharmony have also been studied. While the influence of these variables on aggressive behavior was not as strong as television viewing itself, their impact should be studied with regard to single channel and multiple channel approaches.

Houser (1978) assessed the effectiveness of audiovisual media in changing the ethnic attitudes of young children in a study of one hundred and fifty-nine children. They ranged in age from five to nine and were randomly assigned to one of three groups. One of the three groups acted as a control while one treatment group watched one film and the other treatment group watched two films. The treatment group members gave significantly fewer prejudiced responses than the control group members with significance occurring at the .01 level. Moreover, the variables of age, sex, and subject or administrator ethnicity had
no influence on the results. Houser commented on the limited research on the impact of television on children's attitudes, and this position can be extended to the influence of other media as well.

Richmond (1979) evaluated the impact of group guidance combined with audiotaped and videotaped playback and the influence of either form of playback method. Self-esteem, teacher-rated classroom behavior, and attitude toward the classroom served as independent variables in the study with fourth and sixth grade students as subjects.

Significant differences emerged between fourth grade treatment and control groups with regard to the use of media form. However, the audio and video tape components were undifferentiated. In sixth grade, Classroom Questionnaire results showed limited support for "trust" and "affect" in terms of guidance and videotape compared to guidance and audio tape. No significant differences between groups were noted.

Salomon (1978) asserted that all media are able to instruct and learning can take place in association with all media. If this is the case, he continues, future research considerations should lie in the areas of management and economics. In reflection, however, this conclusion appears to be simplistic and the possibility exists, "that when some special potentialities of some media are being capitalized upon, under some conditions some learners might benefit more in some areas." (1978:38)
This approach would direct investigators away from large scale studies and toward limited well controlled efforts. This situation, according to Saloman, is taking place and restricted interaction theories are being investigated at present. While the media have a great deal in common, they differ in several ways. One important difference lies in symbol systems. "Symbol systems require the employment of different clusters of mental skills in the service of information extraction." (Salomon and Cohen, 1977:613) Therefore, when critical information is coded in a different manner, learning outcomes must follow suit because different mental operations may be employed. Failure to attend to this difference may result in a lack of learning, and an anticipated outcome may not take place.

Large and small scale studies are necessary to create a sound knowledge base. Studies involving large numbers permit generalizability while those restricted to small numbers permit a much greater degree of control. Presentation mode investigations can be handled in both styles. If a small, properly controlled effort yields promising results, a larger study might be undertaken to extend the findings.

Although the most recent literature has not focused on the issues surrounding presentation modes, in past times there was a great deal of activity concerning this question. Perhaps these questions have been answered to the satisfaction of researchers in the area who now seek other directions for their interests. New questions continue to arise, however. A general finding, for instance, may not apply to a
specific case. Therefore, carefully conducted small scale studies are of value to augment the knowledge base. If an investigator is able to manage a research effort and properly control the dependent variables, meaningful research findings will be produced.
Chapter 3

PROCEDURES USED IN THE STUDY

BACKGROUND

The study was conducted in West Baton Rouge Parish and included all third grade children in the three existing public elementary schools. School A was the largest of the three and had an enrollment of approximately 555. Parents of these students represented a cross-section of socio-economic groups, but the majority fell into the lower-middle class income group. Black children in the school represented approximately sixty percent of the enrollment. The enrollment of School B was approximately 378. Parents of these children represented a slightly higher socio-economic group than those of School A. The school population was about forty percent black. School C was located in a rural community, and parents of these students represented the lowest socio-economic group within the parish. Many of these parents earned their livelihood as agricultural laborers in the sugar cane fields. The population of this school was 416, of which forty-five percent was black.

SELECTION OF STORIES

The selection of the two picture books to be used in the study was determined in accordance with the following criteria:

1. that the titles be commonly included in elementary school media center collections and recommended for third grade
2. that the titles be considered successfully used in storytelling sessions conducted previously by the investigator.
3. that the titles be approved by Laura W. Simoneaux, Title I Reading Specialist, West Baton Rouge Parish Schools.

The stories selected were:

*Why Mosquitoes Buzz in Peoples Ears*, by Verna Aardema.
Pictures by Leo and Diane Dillon.

*Tikki Tikki Tembo*, by Arlene Mosel. Illustrated by Blair Lent.

**PRODUCTION OF VIDEO TAPES AND AUDIO TAPES**

Storytelling sessions, using the two selected picture books, were conducted by the investigator and video taped in the television studio of the Instructional Resources Center at Louisiana State University during the month of August, 1978. Ten third grade children who would not be included in the research were invited to come to the television studio and participate. Scenes of the investigator and the children were included on both video tapes. The investigator was seated on a low chair and displayed the illustrations in the books to the group of children seated on a carpet at her knees.
Following the taping of the live storytelling sessions, the tapes were edited to cut in shots of the major illustrations included in the two picture books. The tapes were produced in color on video cassettes.

The audio tapes were produced as cassettes recordings. Both stories were read orally by the investigator.

THE SAMPLE

Prior to the beginning of the study, permission was secured from the Superintendent of the West Baton Rouge Parish Schools to carry out the project including all of the nine third grade classes in existence in the three public elementary schools of the parish. Consultation was also held with the Reading Supervisor. The third grade enrollment for the parish numbered 252 at the time the study was conducted, and every student present on the two days during which the research was conducted in his school was included in the study.

ASSIGNMENT OF TREATMENTS

The three treatments were conducted in each of the three schools, and in each school students were randomly assigned to one of the treatment groups. Homogeneous grouping, on the basis of standardized reading test scores and teacher observation, is used in West Baton Rouge Parish to formulate classes. Two or three levels exist in each school. Therefore, in an effort to create treatment groups
that were as nearly representative of the entire population as possible, in each school students were randomly selected from each class in equal numbers to formulate the groups. The three treatments were designated the first three letters of the alphabet as follows: "A" - Video tape; "B" - Audio tape; "C" - Live storytelling. The names of the students in each class were placed in an envelope, drawn at random, and alternately paired with a letter to determine the treatment group in which the student was to participate. Students remained in the same treatment group for the presentation of both stories used in the research.

In two of the schools the treatment groups consisted of approximately twenty students or less, while in the third school, the experiment was conducted with slightly larger groups, approximating twenty-five in number. Although the number of students included in each of the large presentation mode groups exceeded eighty at the outset of the experiment, the number of usable scores diminished somewhat because of two reasons. Students were required to be in attendance on two days for the presentations of both stories, and absenteeism caused some to be eliminated from the study. Other students were eliminated because their scores for the SRA reading test could not be secured to classify them as low, middle, or high ability in reading skills. The actual usable numbers for the treatment groups were:
Comprehension Tests

In the absence of testing instruments to measure comprehension of the two stories selected, it was necessary to construct and validate tests. Two twelve-item, multiple-choice tests were constructed by the investigator. These tests, as well as paperback copies of the books, were sent to a committee of authorities in elementary reading and children's literature whose names appear in the appendix. A form was also included on which the experts were asked to judge each test item as valid or not valid and make comments.

All items were scored as valid by each member of the committee, but, based upon their comments, several minor revisions were made in wording for clarification.

A pilot study of these tests was conducted at Northside Elementary School, Hearne, Texas, on October 26, 1978. Twenty students drawn from two third grade classes were included in the study. Live storytelling by the investigator was the mode of presentation used for both stories. The presentations and the testing were conducted in the school's media center facility.
The tests were administered twice to obtain data for test-retest reliability. An item analysis of test results revealed the difficulty of many items was not adequate to provide sufficient discrimination between learners. Based on the data obtained in the pilot test, the instruments were revised and lengthened to eighteen items.

The objectives of the two tests related to the measurement of retention of detail about the stories for the most part, however, higher level skills were also included in the tests to a lesser extent. The tests were structured alike according to the following specific reading comprehension skills:

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Test Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention of Detail</td>
<td>#2,#3,#4,#5,#6,#7,#8,</td>
</tr>
<tr>
<td></td>
<td>#9,#10,#11,#12,#13,#14</td>
</tr>
<tr>
<td>Understanding of Main Idea</td>
<td>#1,#18</td>
</tr>
<tr>
<td>Sequence of Events</td>
<td>#15,#16</td>
</tr>
<tr>
<td>Extending Interpretation</td>
<td>#17</td>
</tr>
</tbody>
</table>

Attitude Scale

An attitude scale was constructed to measure affective response to the two stories. Two of the items on the six-item scale were relevant to the study. Items 2 and 5 were designed to measure enjoyment of the presentation and motivation to read the books. The four irrelevant items were included in an effort to increase the honesty of the responses and were eliminated in scoring. On each item students
were to indicate their feelings by marking one of three simple drawings of faces: a smiling face to indicate enjoyment, a straight face to indicate indifference, or a frowning face to indicate displeasure.

Prior to being used in the experiment, the attitude scale was submitted to a panel of third grade teachers in West Baton Rouge Parish who were asked to judge the suitability of each item for communicating with third grade students. One teacher in each of the three elementary schools in the parish participated, and their names are listed in the appendix. Their replies indicated agreement that all items were suitable; therefore, no revisions were necessary. However, one respondent expressed concern that students might fail to fully understand the feelings represented by the middle or straight "face", and suggested that it be explained when administering the attitude scale.

Standardized Test

Scores from a standardized reading comprehension test were necessary to identify students who were low ability, middle ability, or high ability in reading skills. The investigator was not involved in the administration of this test; scores were secured from the regular testing program conducted by classroom teachers in West Baton Rouge Parish during April, 1978.
The grade equivalencies for the total scores on reading comprehension and vocabulary were obtained for the SRA Achievement Series: Reading-Primary II. A reviewer in Buros' Mental Measurements Yearbook states that "the usability of this test is substantial," and calls the comprehension subtests "commendable." (1972:1098) According to the teacher's guide that accompanies the test, Using Test Results (Science Research Associates, 1972), the average K-R 20 reliability is .92 for the total score on the reading test.

INSTRUCTIONAL PROCEDURES

A preliminary visit was made to each school in August, 1978 to meet with the principals and observe the types of facilities available in each media center/library. Third grade teachers and librarians in each school agreed not to use either of the two books included in the study prior to the conducting of the experiment. The Reading Supervisor assured the investigator that third grade students in the parish were acclimated to the multiple-choice testing format.

In the early Fall of 1978 a brief summary of the study, including a statement of the problem, the procedure description, and the method of data analysis, was mailed to the three elementary school principals and the nine third grade teachers whose students would participate. These persons also received a schedule of dates and times for the presentations and data collection as well
as a list of the randomly selected students who were to formulate each of the three treatment groups. A copy of the summary statement and the schedule may be found in the appendix.

The presentations and data collection were conducted by the investigator during thirty minute blocks of time for four consecutive days, beginning November 28, 1978, and finishing December 1, 1978. Each group was composed of approximately twenty to twenty-five students randomly selected in equal numbers from each third grade class in the schools. All three treatments were conducted in each school and repeated for both stories.

The audio and video equipment, which was set up in the school media center/library facilities at the beginning of each day, was rented from the Instructional Resources Center, Louisiana State University. Two television monitors were used for the video tape presentations to insure that every student had a clear view of the screen.

Immediately following each presentation, the investigator administered the multiple-choice comprehension test and the attitude scale. The directions and the test items were read orally with students as they marked their answers. Before completing the attitude scale, students were familiarized with the attitudes represented by each of the "faces" by drawing them on poster paper and discussing briefly. Students were told that the attitude scale was not a test. The directions and the six items were read orally as students marked their answers.
STATISTICAL ANALYSIS

The comprehension tests and the attitude scales were hand scored by the investigator. Data collected in the experiment was used to prepare scan sheets for computer assimilation. A code was developed, and the scan sheets were used to keypunch computer cards.

Analysis of the data was accomplished at the Data Processing Center at Texas A&M University. A WYLBUR computer program using analysis of variance (AOV 1,2,3) was used to generate all statistical data for both cognitive and affective aspects of the study. The program provided for examining differences among the three treatment groups with comparisons of the mean scores according to Scheffe's tests. Analysis was repeated using the same program to determine if students classified according to low, middle, or high reading ability benefited equally in terms of cognitive test scores from the three presentation modes, or responded with any significant difference in terms of affective response. Null hypotheses at the .05 level of confidence were used in testing each F-ratio for significance.
Chapter 4

PRESENTATION AND ANALYSIS OF DATA

INTRODUCTION

In this chapter the two types of data generated by the study are reported and analyzed. Data in the cognitive aspect of the study resulted from the total scores made by subjects on two comprehension tests following the presentations of two stories. For the affective phase of the study, data were obtained by totalling subjects' responses to two items on an attitude scale administered after two story presentations. Statistical procedures were accomplished by computer analysis.

Analysis of variance was used to compare the group means of the total scores in both aspects of the study. Comparisons were made among the three comprehensive treatment groups and also among the three treatment sub-groups designated according to low-range, middle-range, or high-range scores on a standardized reading test.

The data presented in Table 1 indicates the number of subjects in each comprehensive treatment group and in each sub-group for both phases of the study. A total of 176 of the 252 third grade students enrolled in the West Baton Rouge Parish Schools are reported as participants in the research. Initially, all students were included, however, seventy-six were eliminated because of absenteeism or because their grade equivalency scores for the SRA Achievement Series: Reading - Primary II test could not be secured to assign them to reading
groups. The grade equivalency scores ranged from grade 1.0 through 6.9. Sixty students were assigned to the low ability reading group, with scores ranging from 1.0 through 2.8; 57 students were assigned to the middle ability reading group with scores ranging from 2.9 through 3.4; and 59 students were assigned to the high ability reading group, with scores ranging from 3.5 through 6.9.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Low Readers</th>
<th>Middle Readers</th>
<th>High Readers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G.E.1.0-2.8</td>
<td>G.E.2.9-3.4</td>
<td>G.E.3.5-6.9</td>
<td></td>
</tr>
<tr>
<td>A. Video tape</td>
<td>17</td>
<td>22</td>
<td>18</td>
<td>57</td>
</tr>
<tr>
<td>B. Audio tape</td>
<td>24</td>
<td>16</td>
<td>22</td>
<td>62</td>
</tr>
<tr>
<td>C. Live</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>57</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>57</td>
<td>59</td>
<td>176</td>
</tr>
</tbody>
</table>

THE COGNITIVE ASPECT OF THE STUDY

Comprehensive Groups: Students of All Reading Levels

One hundred seventy-six students participated in the three inclusive groups who viewed video tapes (N=57), listened to audio tapes (N=62), and experienced live storytelling sessions (N=57).

Three hypotheses \( (H_1, H_2, H_3) \) were tested by the application of analysis of variance to determine the significance of the difference
between the means of the groups. The total variance of the scores on two comprehension tests was analysed to determine that portion of the variance attributable to differences among the groups themselves and that portion due to individual differences within the groups. The results of this procedure are shown in Table 2.

Table 2
Analysis of Variance for Comprehension Test Scores—Comprehensive Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>188.44</td>
<td>94.22</td>
<td>3.08</td>
<td>.0469*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>167</td>
<td>5101.1</td>
<td>30.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.

Under the heading "df" are given the degrees of freedom available among means and within groups. The next two columns show the squares of the sums of the comprehension test scores and mean square of these scores. The resulting F-ratio, determined by dividing the variance among the groups by the variance within the groups, yielded a probability of .0469, which was deemed to be significant at the .05 confidence level. Because the F-ratio does not indicate precisely which mean or means differ significantly from another mean, Scheffe's tests were applied to locate these differences.
The data presented in Table 3 indicate the differences between each of the three pairs of means possible and the probabilities of significance being met in Scheffe's tests.

Table 3
Analysis of Differences Among Means - Scheffe's Tests - Comprehensive Groups

<table>
<thead>
<tr>
<th>Group Pairs</th>
<th>Means</th>
<th>Difference Between Means</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video tape</td>
<td>24.57</td>
<td>1.78</td>
<td>1.55</td>
<td>.2141</td>
</tr>
<tr>
<td>Audio tape</td>
<td>22.79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>24.57</td>
<td>.69</td>
<td>.21</td>
<td>.8097</td>
</tr>
<tr>
<td>Live</td>
<td>25.26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>22.79</td>
<td>2.47</td>
<td>3.19</td>
<td>.0422*</td>
</tr>
<tr>
<td>Live</td>
<td>25.26</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.

The differences between the means of two pairs of treatment groups, video tape compared to audio tape and video tape compared to live storytelling, yielded a probability greater than .05. Therefore, there was no significant difference in achievement between these groups, and two of the null hypotheses (H1 and H2) were accepted at this level.

The difference between the means of the treatment groups who listened to the audio tapes and experienced the live storytelling presentations produced a probability of .0422. Using the .05 level test, the null hypothesis (H3) was rejected.
Groups Classified As Low Ability Readers

The sixty subjects designated as having a low range of skill in reading were seventeen who viewed video tapes, twenty-four who listened to audio tapes, and nineteen who experienced live storytelling presentations.

Three null hypotheses (H₄, H₅, and H₆) were related to the comparisons of the means of comprehension test scores among these groups.

The same statistical procedures employed for the comprehensive groups were repeated for the low reading groups. This data is reported in Table 4.

Table 4
Analysis of Variance for Comprehension Test Scores - Low Reading Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>250.42</td>
<td>125.21</td>
<td>3.47</td>
<td>.0368*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>57</td>
<td>2058.0</td>
<td>36.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.

An F-ratio of 3.47 was judged to be significant at the .05 level since the probability of this value occurring by chance was .0368. Therefore, further analysis was necessary to specifically determine which of the three pairs of group means differed significantly.
Table 5 displays the results of Scheffe's tests. Differences between the means of the video tape group compared to the audio tape group as well as the video tape group compared to the live storytelling group produced probability values greater than .05; therefore, the relevant null hypotheses \( (H_4 \text{ and } H_5) \) were accepted. The difference between the means of the audio tape group and the live storytelling group met the test of significance at the .05 level, and the null hypothesis pertaining to this comparison \( (H_6) \) was rejected.

Table 5

Analysis of Differences Among Means - Scheffe's Tests - Low Reading Groups

<table>
<thead>
<tr>
<th>Group Pairs</th>
<th>Means</th>
<th>Difference Between Means</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video tape</td>
<td>20.29</td>
<td>1.87</td>
<td>.49</td>
<td>.6234</td>
</tr>
<tr>
<td>Audio tape</td>
<td>18.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>20.29</td>
<td>3.13</td>
<td>1.22</td>
<td>.3042</td>
</tr>
<tr>
<td>Live</td>
<td>23.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>18.42</td>
<td>5.0</td>
<td>3.68</td>
<td>.0305*</td>
</tr>
<tr>
<td>Live</td>
<td>23.42</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.
Groups Classified As Middle Ability Readers

The fifty-seven subjects designated as having a mid-level range of skill in reading were twenty-two who viewed video tapes, sixteen who listened to audio tapes, and nineteen who experienced live storytelling presentations.

Three null hypotheses ($H_7$, $H_8$, and $H_9$) were related to the comparisons of the means of comprehension test scores among these groups.

As before, in analyzing comprehension test scores for comprehensive groups and low reading groups, scores for the middle ability reading groups were subjected to analysis of variance. The results are reported in Table 6.

Table 6
Analysis of Variance for Comprehension Test Scores - Middle Reading Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>36.36</td>
<td>18.18</td>
<td>.72</td>
<td>.4963</td>
</tr>
<tr>
<td>Within Groups</td>
<td>54</td>
<td>1366.18</td>
<td>25.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The F-ratio of .72 did not meet the test of significance at the .05 confidence level. The resulting conclusion was made that statistically significant differences did not exist among the means of the
treatment groups. The associated null hypotheses ($H_7$, $H_8$, and $H_9$) were accepted. Mean scores for the mid-range reading ability groups are located in the Appendix on page 120 where cell statistics are reported in Table 18.

**Groups Classified As High Ability Readers**

The fifty-nine subjects designated as having a high range of skill in reading were eighteen who viewed video tapes, twenty-two who listened to audio tapes, and nineteen who experienced live storytelling presentations.

Three null hypotheses ($H_{10}$, $H_{11}$, and $H_{12}$) were related to the comparisons of the means of comprehension test scores among these groups.

Analysis of variance was re-applied. The resulting data are exhibited in Table 7.

**Table 7**

Analysis of Variance for Comprehension Test Scores - High Reading Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>115.91</td>
<td>57.96</td>
<td>1.94</td>
<td>.1520</td>
</tr>
<tr>
<td>Within Groups</td>
<td>56</td>
<td>1676.91</td>
<td>29.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Since the F-ratio of 1.94 yielded a probability value that exceeded the .05 confidence level, the assumption was made that significant differences did not exist among the means of any of the treatment groups. Consequently, the relevant null hypotheses ($H_{10}$, $H_{11}$, and $H_{12}$) were accepted. Mean scores for the high range reading ability groups are located in the Appendix on page 120 where cell statistics are reported in Table 18.

SUMMARY

A summary of all foregoing data is presented in Table 8. Among the comprehensive treatment groups, the outcomes of the study indicated a significant difference only between the audio tape group and the live storytelling group while the null hypotheses of no difference between the video tape group and the audio tape group as well as the video tape group and the live storytelling group were accepted. In ascertaining the outcomes among the sub-groups, further analysis revealed that a significant difference between the audio tape and live presentation modes existed only among the subjects classified as having low ability in reading skill. For the other two sub-groups, (among subjects determined to have mid-range reading skills and high-range reading skills) no significant differences were found between any of the group pairs, and all six of the null hypotheses were accepted.
<table>
<thead>
<tr>
<th>Comparison Groups</th>
<th>N</th>
<th>Mean</th>
<th>Difference Between Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>57</td>
<td>24.57</td>
<td>1.78</td>
</tr>
<tr>
<td>Audio tape</td>
<td>62</td>
<td>22.79</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>57</td>
<td>24.57</td>
<td>.69</td>
</tr>
<tr>
<td>Live</td>
<td>57</td>
<td>25.26</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>62</td>
<td>22.79</td>
<td>2.47*</td>
</tr>
<tr>
<td>Live</td>
<td>57</td>
<td>25.26</td>
<td></td>
</tr>
<tr>
<td>Low Readers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>17</td>
<td>20.29</td>
<td>1.87</td>
</tr>
<tr>
<td>Audio tape</td>
<td>24</td>
<td>18.42</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>17</td>
<td>20.29</td>
<td>3.13</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>23.42</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>24</td>
<td>18.42</td>
<td>5.0*</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>23.42</td>
<td></td>
</tr>
<tr>
<td>Middle Readers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>22</td>
<td>26.18</td>
<td>1.05</td>
</tr>
<tr>
<td>Audio tape</td>
<td>16</td>
<td>25.13</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>22</td>
<td>26.18</td>
<td>1.97</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>24.21</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>16</td>
<td>25.13</td>
<td>.92</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>24.21</td>
<td></td>
</tr>
<tr>
<td>High Readers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>18</td>
<td>27.22</td>
<td>2.4</td>
</tr>
<tr>
<td>Audio tape</td>
<td>22</td>
<td>24.82</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>18</td>
<td>27.22</td>
<td>.94</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>28.16</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>22</td>
<td>24.82</td>
<td>3.34</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>28.16</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.
THE AFFECTIVE ASPECT OF THE STUDY

The responses provided by subjects to Items 2 and 5 on the attitude scale were converted to numerical values, totalled, and analyzed by computer to determine the significance of the differences among the scores of the three treatment groups. All hypotheses were tested at the .05 confidence level. For each item a response indicating a positive attitude was scored as "+1." A negative attitude was scored as "-1," and a neutral attitude as "0." Because the attitude scale was administered twice (following two story presentations), the total score for each subject ranged from a possible "+4" to "-4." Composite scores were derived for each treatment group.

Comprehensive Groups: Students of All Reading Levels

A summary of the scores computed for each treatment group and the algebraic sums of these scores are reported in Table 9. The data indicate that most students responded positively to the attitude scale. For the video tape presentations, 4 students responded indifferently, and there were no negative responses. For the audio tape group, 4 students indicated indifferent responses, and 1 student responded negatively. For live presentations, there were 6 indifferent and 2 negative responses.
Table 9
Summary of Total Scores For Items 2 and 5 of the Attitude Scale for Two Stories - Comprehensive Groups

<table>
<thead>
<tr>
<th></th>
<th>+4</th>
<th>+3</th>
<th>+2</th>
<th>+1</th>
<th>0</th>
<th>-1</th>
<th>-2</th>
<th>-3</th>
<th>-4</th>
<th>Sums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video tape (N=57)</td>
<td>24</td>
<td>14</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>164</td>
</tr>
<tr>
<td>Audio tape (N=62)</td>
<td>22</td>
<td>7</td>
<td>15</td>
<td>13</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>151</td>
</tr>
<tr>
<td>Live (N=57)</td>
<td>23</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>143</td>
</tr>
</tbody>
</table>

Three hypotheses ($H_1$, $H_2$, and $H_3$) were tested by the application of analysis of variance. The resulting data are presented in Table 10.

Table 10
Analysis of Variance for Items 2 and 5 of the Attitude Scale - Comprehensive Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>5.49</td>
<td>2.75</td>
<td>1.36</td>
<td>.2584</td>
</tr>
<tr>
<td>Within Groups</td>
<td>167</td>
<td>337.35</td>
<td>2.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The degrees of freedom available among groups and within groups are shown in Table 10 under the heading "df." The sum of the squares of the scores is shown in the next column, followed by the mean square of
these scores. Since the F-ratio yielded a probability that was
greater than .05, the null hypotheses (H₁, H₂, and H₃) were accepted
on the assumption that significant differences did not exist among
the three possible comparisons at the .05 confidence level.

Groups Classified As Low Ability Readers

Data analysis was repeated for the sixty students designated as
having low ability in reading skills. A summary of the scores and
the algebraic sums of these scores is presented in Table 11. The
data indicates that in the group receiving video tape presentations,
fourteen students responded positively while three were indifferent.
In the group receiving audio tape presentations, twenty students
responded positively and four were indifferent. The only negative
response fell in the live storytelling group where there were also
two indifferent responses.

Table 11

Summary of Total Scores For Items 2 and 5
of the Attitude Scale for Two Stories -
Low Reading Groups

<table>
<thead>
<tr>
<th></th>
<th>+4</th>
<th>+3</th>
<th>+2</th>
<th>+1</th>
<th>0</th>
<th>-1</th>
<th>-2</th>
<th>-3</th>
<th>-4</th>
<th>Sums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video tape (N=17)</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td>Audio tape (N=24)</td>
<td>5</td>
<td>2</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>47</td>
</tr>
<tr>
<td>Live (N=19)</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>45</td>
</tr>
</tbody>
</table>
The data reported in Table 12 presents the results of analysis of variance for the low reading groups. Since the probability of .5340 was greater than .05, the relevant null hypotheses (H₄, H₅, and H₆) were accepted.

Table 12
Analysis of Variance for Items 2 and 5 of the Attitude Scale - Low Reading Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>2.88</td>
<td>1.44</td>
<td>.64</td>
<td>.5340</td>
</tr>
<tr>
<td>Within Groups</td>
<td>57</td>
<td>127.61</td>
<td>2.24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Groups Classified As Middle Ability Readers

Scores for the fifty-seven students with mid-level ability in reading skills are displayed in Table 13 with the algebraic sums of these scores. In the video tape group twenty-one students responded positively, while one did not. Fifteen students in the audio tape group responded positively and one did not. In the live presentation group fifteen students responded positively and three did not.
Table 13
Summary of Total Scores for Items 2 and 5 of the Attitude Scale for Two Stories - Middle Reading Groups

<table>
<thead>
<tr>
<th></th>
<th>+4</th>
<th>+3</th>
<th>+2</th>
<th>+1</th>
<th>0</th>
<th>-1</th>
<th>-2</th>
<th>-3</th>
<th>-4</th>
<th>Sums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video tape (N=22)</td>
<td>9</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>65</td>
</tr>
<tr>
<td>Audio tape (N=16)</td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td>Live (N=19)</td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>49</td>
</tr>
</tbody>
</table>

The results of analysis of variance of the scores for the middle reading groups are reported in Table 14. The F-ratio yielded a probability of .7234; therefore, no significant differences were assumed to exist at the .05 level, and the related null hypotheses (H_7, H_8, and H_9) were accepted.

Table 14
Analysis of Variance for Items 2 and 5 of the Attitude Scale - Middle Reading Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>1.57</td>
<td>.78</td>
<td>.33</td>
<td>.7234</td>
</tr>
<tr>
<td>Within Groups</td>
<td>54</td>
<td>127.34</td>
<td>2.36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Groups Classified As High Ability Readers

The data reported in Table 15 shows the scores for fifty-nine students with high ability reading skills as well as the algebraic sums of these scores. There were no negative responses by students. In both the video tape and audio tape groups, all students responded positively. In the group receiving live presentations there were eighteen positive responses and one indifferent response.

Table 15

Summary of Total Scores for Items 2 and 5 of the Attitude Scale for Two Stories - High Reading Groups

<table>
<thead>
<tr>
<th></th>
<th>+4</th>
<th>+3</th>
<th>+2</th>
<th>+1</th>
<th>0</th>
<th>-1</th>
<th>-2</th>
<th>-3</th>
<th>-4</th>
<th>Sums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video tape (N=18)</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>57</td>
</tr>
<tr>
<td>Audio tape (N=22)</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>68</td>
</tr>
<tr>
<td>Live (N=19)</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49</td>
</tr>
</tbody>
</table>

The outcome of analysis of variance was an F-ratio that generated a probability of .3215. Since this value exceeded .05, no significant difference were assumed to exist at the .05 confidence level. Three null hypotheses ($H_{10}$, $H_{11}$, and $H_{12}$) were accepted. Relevant data is reported in Table 16.
Table 16

Summary of Analysis of Variance for
Items 2 and 5 of the Attitude Scale -
High Reading Groups

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among Means</td>
<td>2</td>
<td>3.41</td>
<td>1.71</td>
<td>1.16</td>
<td>.3215</td>
</tr>
<tr>
<td>Within Groups</td>
<td>56</td>
<td>82.40</td>
<td>1.47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUMMARY

In summary, all twelve of the null hypotheses relating to the affective aspect of the study were accepted. Table 17 summarizes the outcomes of the statistical analysis.
Table 17
Summary of Differences Among Means -
Total Scores for Items 2 and 5 of the Attitude Scale

<table>
<thead>
<tr>
<th>Comparison Groups</th>
<th>N</th>
<th>Mean</th>
<th>Difference Between Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>57</td>
<td>2.86</td>
<td>.39</td>
</tr>
<tr>
<td>Audio tape</td>
<td>62</td>
<td>2.47</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>57</td>
<td>2.86</td>
<td>.35</td>
</tr>
<tr>
<td>Live</td>
<td>57</td>
<td>2.51</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>62</td>
<td>2.47</td>
<td>.04</td>
</tr>
<tr>
<td>Live</td>
<td>57</td>
<td>2.51</td>
<td></td>
</tr>
<tr>
<td>Low Readers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>17</td>
<td>2.47</td>
<td>.51</td>
</tr>
<tr>
<td>Audio tape</td>
<td>24</td>
<td>1.96</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>17</td>
<td>2.47</td>
<td>.10</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>2.37</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>24</td>
<td>1.96</td>
<td>.41</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>2.37</td>
<td></td>
</tr>
<tr>
<td>Middle Readers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>22</td>
<td>2.96</td>
<td>.33</td>
</tr>
<tr>
<td>Audio tape</td>
<td>16</td>
<td>2.63</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>22</td>
<td>2.96</td>
<td>.28</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>2.68</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>16</td>
<td>2.63</td>
<td>.05</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>2.68</td>
<td></td>
</tr>
<tr>
<td>High Readers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>18</td>
<td>3.17</td>
<td>.35</td>
</tr>
<tr>
<td>Audio tape</td>
<td>22</td>
<td>2.82</td>
<td></td>
</tr>
<tr>
<td>Video tape</td>
<td>18</td>
<td>3.17</td>
<td>.59</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>2.58</td>
<td></td>
</tr>
<tr>
<td>Audio tape</td>
<td>22</td>
<td>2.82</td>
<td>.24</td>
</tr>
<tr>
<td>Live</td>
<td>19</td>
<td>2.58</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

SUMMARY

The purpose of this study was to compare the effectiveness of three different methods of storytelling presentations structured in two learning modalities. The video tape and live storytelling treatments represented multiple channel presentations stimulating the senses of both sight and hearing, while the audio tape treatment served as a single channel presentation stimulating only the sense of hearing. Comparisons were made for both cognitive and affective responses to two stories.

The subjects were pupils enrolled in the third grade classes of the three elementary schools in West Baton Rouge Parish, Louisiana. Students in each school were randomly assigned to one of three treatment groups. The instructional procedures were conducted by the investigator in the schools' media centers, and each treatment was administered twice in each school for the presentation of two different stories.

Each of the subjects responded to two types of data collecting instruments: multiple choice comprehension tests in the cognitive aspect of the study, and attitude scales for the affective phase. The resulting scores were analyzed by computer using an analysis of variance procedure to determine whether significant differences in achievement or attitude existed among the three treatment groups.
In further analysis, students were classified according to three subgroups on the basis of standardized reading comprehension test scores. Calculations by computer were repeated to determine if students with low, middle, and high ability in reading skill responded with any significant difference in terms of achievement or attitude among the three treatment groups.

CONCLUSIONS

The conclusions reached when interpreting the results of this study must be considered judiciously. Certain factors limited the degree to which the results of this study can be generalized to storytelling in the media center for all third grade students: (1) limited numbers, (2) absenteeism, (3) participation by students in only one rural school system representing middle to lower socioeconomic groups, and (4) the personality characteristics of storytelling presenter.

Of the 252 students enrolled in the third grade classes of West Baton Rouge Parish, 76 were disqualified as subjects because of absence on one or more days of presentation and testing. One can only speculate on the outcome of participation by the entire group or a larger sample.

Since the subjects were drawn from small schools in one rural district, the conclusions may not be applicable to larger schools in urban systems or to students in other parts of the state or the nation.
Furthermore, the conformity or contradiction among findings related to the theoretical research literature investigating comparison of single channel versus multiple channel presentations must be interpreted cautiously. The stimulus material presented in this study is significantly different from the information processing tasks required in some of the aforementioned investigations.

Part I - Cognitive Hypotheses:

Two of the twelve null hypotheses tested in this study were rejected indicating the presence of statistically significant differences between the groups compared. One of these existed among the comprehensive group comparisons, and the other was found in comparisons among the subgroups classified by reading comprehension ability.

In the comprehensive groups, the mean score of 25.26 for students who participated in the live storytelling treatment was significantly higher than the mean of 22.79 for students who participated in the audio tape treatment. This would suggest that for heterogeneous reading ability groups, live storytelling as an instructional strategy is superior to presenting stories via audio tape recordings. The other comparisons among the comprehensive groups (video tape vs. audio tape and video tape vs. live storytelling) displayed so little difference that the related null hypotheses were accepted. For these groups neither presentation method could be said to be more effective than the other as a method of instruction.
For the nine null hypotheses tested in the sub-groups, one was rejected. In the low ability reading group, the mean score of 23.42 for the live storytelling presentation was significantly greater than the mean score of 18.42 for the audio tape presentation indicating that low ability readers do not learn effectively when an audio presentation is used with no related visual stimuli. The difference between the means of 5.0 for the low ability readers was almost twice as great as the difference of 2.47 which occurred for the comparison of the same presentation methods for the comprehensive groups, suggesting that the weakness in listening skill existed for the most part among the low ability readers.

Comparisons of all three treatments among the students classified as middle and high ability readers yielded no significant differences indicating all three methods of storytelling presentation were equally efficient for students in these ability groups.

The unexplained question remains as to why no significant difference resulted between the video tape and audio tape presentations for the comprehensive groups since the difference between the live storytelling and audio tape versions were significant. Both the video tape and live storytelling presentations functioned as two-channel stimulus material with closely related resource attributes. A generalized prediction might have been made that their mean scores would be equal or at least very similar with a significant difference resulting between the video tape and the audio tape presentations comparable to the difference found to exist between the live storytelling and audio tape presentations. In actual fact, the findings of the study revealed that the mean scores of 24.57 for the video tape method
and 25.26 for the live storytelling method showed a diminutive difference of only .69. Although this difference in favor of live storytelling was slight, it was substantial enough to barely indicate significance in comparing the live presentation to the audio tape version while no significance resulted for comparison of the video tape and the audio tape versions at the .05 confidence level. One possible explanation for this outcome might be that the learning task may have been too elementary.

Part II - Affective Hypotheses:

All of the twelve null hypotheses relating to the affective aspect of the experiment were accepted, indicating no statistically significant differences among any of the comparison groups. Although this would appear to indicate an evenness of attitude on the part of students toward the presentation methods with no preference for any of the three, observations of the investigator tend to suggest that the outcome might be attributed to inadequate design of the data collecting instrument.

RECOMMENDATIONS

The conclusions based on data collected in this study appear to justify general implications for classroom teaching and recommendations for further research.
Implications for Teaching

1. Audio recordings of stories are not an adequate substitute for live storytelling or video taped versions of storytelling sessions.

2. When planning storytelling activities in the media center, elementary teachers and media specialists should focus special attention on the individual needs of students identified as low ability readers. They require more personal contact and motivation and more instruction to enhance listening skills than those students with higher level skill in reading. Although Allen (1975:143) reported no apparent support for the conclusion that students of lower mental ability learn more from pictorial treatments or that students of higher mental ability learn more from verbal treatments, he found positive support for the generalization that students of higher mental ability learn proportionately more from more complex, multi-channel presentations than students of lower mental capabilities. The results of the present investigation indicate otherwise and suggest that multi-channel presentations are more effective for the low ability readers. This contradiction might be explained because of the relative simplicity of the learning task and the presentation of stories at a pace slow enough to allow mental processing by low ability readers.

3. The results of this study are consistent with previous investigations (Chu and Schramm, 1967; Reid and MacLennan, 1967; Stanford, 1975) indicating no significant difference in the effectiveness of televised instruction as compared to live instruction.
Teachers and media specialists should be encouraged to make more extensive use of instructional television and produce their own videotaped programs. Used in a systematic manner, such resources can add variety to the total learning program while also affording personnel the opportunity to interact with more students on a personal and individual basis. As proposed by Schramm (1977), there is a need for research on factors that might eliminate teacher resistance to use of instructional television.

Recommendations for Further Research

1. This study reinforces the need delineated by Allen (1973) and more recently by Simonson (1978) for further research on the relationship of media and learning in the affective domain.

2. Investigations similar to this study should be performed with more complex content and different types of literary genres as stimulus material.

3. The effects of audio and audio-visual stimuli on learning should be further evaluated with different age groups and with subjects from other types of schools and environments.

4. Future cross-media comparative studies would be better designed if the specific resource attributes (such as sign type, structure, function, pace, sequence, and redundancy) were identified in the stories used as stimulus material. Contradictory evidence reported in the literature for the study of single versus multiple
channel investigations may have occurred because the resource attributes inherent in the treatments were not addressed in the inquiry or held constant in the experimental design (Crowley, 1978).
REFERENCES CITED


Phair, Anthony J. "Comparison of Cognitive Learning From a 16 mm Motion Picture, a 35 mm Sound Filmstrip, Soundtrack Only, and Printed Narration, Using Immediate and Delayed Retention Scores in Sixth Grade Social Studies," Dissertation Abstracts International, 36 (February, 1976), 4968-A (Catholic University of America).


Severin, W. "The Effectiveness of Relevant Pictures in Multiple Channel Communications." AV Communication Review, XV (Winter, 1967), 386-401.


APPENDICES
APPENDIX A

LETTER OF APPROVAL

SUPERINTENDENT, WEST BATON ROUGE PARISH SCHOOLS
APPENDIX A

TO: E. Susan Staples
   2121 Stanford Avenue
   Baton Rouge, LA 70808

RE: Dissertation Study

Proposed Title: "Some Cognitive and Affective Outcomes of Four Modes of Presenting Stories to Third Grade Students"

As Superintendent of West Baton Rouge Parish Schools, I hereby grant permission for your proposed dissertation study to be carried out in this parish. It is my understanding that data for the study is to be collected during the month of October, 1978.

It is also my understanding that a full report of the results of the study will be provided to me. In addition, paperback books, audiotapes, and videotapes used in the study will be donated to the schools of West Baton Rouge Parish.

L. C. Lutz, Superintendent
West Baton Rouge Parish Schools

Date
APPENDIX B

PARTICIPATING CLASSES AND STAFF
WEST BATON ROUGE PARISH SCHOOLS
APPENDIX B

PARTICIPATING CLASSES AND STAFF
WEST BATON ROUGE PARISH SCHOOLS

Mr. L. C. Lutz, Superintendent
Mrs. Laura W. Simoneaux, Reading Specialist

<table>
<thead>
<tr>
<th>School</th>
<th>Principal</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Allen</td>
<td>Mr. John M. Wyble</td>
<td>Mrs. June Townsend</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mrs. Bettye Gray</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mrs. Leona Heimendinger</td>
</tr>
<tr>
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<td></td>
<td>Mrs. Natherlean Kelly</td>
</tr>
<tr>
<td>Lukeville</td>
<td>Mr. Albert D. Kidd</td>
<td>Mrs. Agnes Anderson</td>
</tr>
<tr>
<td></td>
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<td>Mrs. Ann Wilson</td>
</tr>
<tr>
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<td>Mrs. M. C. Johnson</td>
</tr>
<tr>
<td>Chamberlin</td>
<td>Mr. Clarence Beverly, Jr.</td>
<td>Ms. Chris Chustz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mrs. Celestine Gray</td>
</tr>
</tbody>
</table>
APPENDIX C

BRIEF EXPLANATION OF THE STUDY
(Brief explanation of the study sent to all persons serving on validation committees, school principals, and teachers whose classes participated.)

COGNITIVE AND AFFECTIVE RESULTS OF THREE MODES OF PRESENTING STORIES TO THIRD GRADE STUDENTS

Elementary teachers and media personnel have commonly used a wide variety of trade editions of picture book stories to enhance the language arts program. Traditionally, the method employed to present these materials has been a storytelling session by the teacher with the book held up to show the visuals. Modern technology, however, has provided educators access to a wide variety of other mediated resources which can be utilized to satisfy the requirements of varied learning styles. Greater awareness of individual differences, together with emphasis on systematic planning in education, require that effective instructional design incorporate every possible teaching-learning strategy to bring about the most efficient and productive allocation of resources.

STATEMENT OF THE PROBLEM

Will third grade students who experience picture book stories in three different presentation modes score differently on: (1) multiple-choice comprehension tests constructed to measure retention of detail and understanding of main idea (2) an attitude questionnaire designed to measure enjoyment of the story presentations and motivation to read the books.

The three presentations will include: A. Video tape of storytelling session conducted by investigator B. Audio tape of storytelling session conducted by the investigator C. Live storytelling by the investigator.

PROCEDURE

Population and Sample: Every student enrolled in the third grade in the three elementary schools of West Baton Rouge Parish (N=252) will be included in the study. Since students are assigned to classes on the basis of homogeneous grouping, subjects will be randomly selected from each class to participate in each treatment group in each school:
<table>
<thead>
<tr>
<th>Presentation Modes</th>
<th>P.A.</th>
<th>Chb.</th>
<th>Lkv.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Video tape</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>84</td>
</tr>
<tr>
<td>B. Audio tape</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>84</td>
</tr>
<tr>
<td>C. Live Storytelling</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>84</td>
</tr>
<tr>
<td>Total (approx.)</td>
<td>84</td>
<td>84</td>
<td>84</td>
<td>252</td>
</tr>
</tbody>
</table>

Treatment: All students will be exposed to the same picture books, but through a different presentation mode. Each treatment will be conducted twice in each school using two stories so that all students will be exposed to two different picture books. Treatments will be conducted in the school media center/library facilities. Immediately following the presentation of each story, students will take a multiple-choice comprehension test and an attitude questionnaire which will be administered by the investigator.

Materials: Selection of the picture books to be used was based upon: (1) recommendation for third grade in The Elementary School Library Collection, by Mary Gaver, ed., (2) prior successful use for storytelling by the investigator, and (3) consultation with Mrs. Laura Simoneaux, Title I Reading Specialist, West Baton Rouge Parish. The two stories to be used are: Why Mosquitoes Buzz in People's Ears, and Tikki Tikki Tembo.

ANALYSIS OF THE DATA

Cognitive Aspect of the Study - Analysis of variance will be used to determine if any significant differences exist on the comprehension test scores among the three treatment groups. Further analysis will determine if students who are classified according to low, middle, and high ability in reading (using SRA Achievement Series scores) benefit equally (in terms of test scores) from the same presentation modes.

Affective Aspect of the Study - An analysis of variance will be performed on the results of the attitude scale for two relevant items to determine if any significant differences exist among the three treatment groups. Calculations will be repeated to ascertain whether students who are classified according to low, middle, and high ability in reading...
(using SRA Achievement Series scores) respond with any significant differences in terms of attitude toward the presentation modes and motivation to read the picture books.

All hypotheses will be tested at the .05 level of significance.
APPENDIX D

MEMBERS OF VALIDATION COMMITTEE

COMPREHENSION TESTS
APPENDIX D

MEMBERS OF VALIDATION COMMITTEE
COMPREHENSION TESTS

Mrs. Laura W. Simoneaux, Title I Reading Specialist
West Baton Rouge Parish Schools
Port Allen, Louisiana

Dr. Jacqueline C. Lewis, Director of Certification
Louisiana State Department of Education
Baton Rouge, Louisiana

Mrs. Betsy A. St. Julien, Assistant Professor
Louisiana State University
Baton Rouge, Louisiana
APPENDIX E

LETTER TO VALIDATION COMMITTEE
APPENDIX E

September 25, 1978

Dear

Thank you for offering to serve on a committee to validate test instruments for my doctoral dissertation.

In explanation of the exact responsibilities I'm asking you to assume, I've enclosed a brief summary of my proposal. You'll notice that two types of test instruments will be used in the study, however, I'm requesting that you participate only in evaluating the comprehension tests for two picture book stories.

The stories selected for the project are Why Mosquitoes Buzz in People's Ears and Tikki Tikki Tembo. Comprehension tests were constructed to measure primarily retention of detail (items 2 through 11), but also include two questions regarding understanding of main idea (items 1 and 12). There was no intent to include items relevant to higher level skills.

Attached to each test is an evaluation sheet for your response. For any test item which you consider not valid, I would appreciate suggestions for revision or a comment that the item should be eliminated entirely. I would also welcome your ideas for new items to replace any which you indicate should be omitted. As you review the two tests, bear in mind that I will read them aloud with students when they are administered. Feel free, however, to suggest any changes in wording by writing directly on the test copies.

Please do not hesitate to call me collect if you have any questions whatsoever. I am very grateful for your assistance in this research endeavor. The benefit of your expertise and background will certainly lend heightened credibility to my study.

Sincerely,

E. Susan Staples
APPENDIX F

PROPOSED COMPREHENSION TEST

*Why Mosquitoes Buzz in Peoples' Ears*
APPENDIX F

PROPOSED COMPREHENSION TEST

Name ____________________________
School ___________________________

Why Mosquitoes Buzz in Peoples' Ears

Directions: As the teacher reads each question with you, circle the letter of one correct answer.

1. This story is mainly about
   A. animals in a zoo.
   B. children who visit a jungle.
   C. animals in the jungle.
   D. animals that are pets.

2. Why did the iguana stick two sticks in his ears?
   A. He didn't want to listen to nonsense from the mosquito.
   B. His ears were getting cold.
   C. He didn't want to get water in his ears.
   D. The mosquito was talking too loud.

3. What frightened the rabbit?
   A. a loud noise
   B. the python came down into her hole
   C. the monkey pushed her
   D. the mosquito bit her

4. Who woke the sun every day so that the dawn could come?
   A. Mother Owl
   B. Iguana
   C. Monkey
   D. Python

5. Why did the crow fly into the forest calling a loud cry?
   A. He was searching for food.
   B. It was his duty to call the animals to a meeting.
   C. He was making fun of the mosquito.
   D. It was his duty to spread the alarm in case of danger.
6. When the monkey went leaping through the trees, he
   A. frightened some squirrels.
   B. woke the sun.
   C. broke a limb that fell on an owl's nest.
   D. turned over a nest of bird's eggs.

7. Why wouldn't the sun come up?
   A. Mother Owl was sad.
   B. King Lion was angry.
   C. Python was sad.
   D. Rabbit was angry.

8. What made Mother Owl so sad?
   A. She could no longer hoot.
   B. The sun was angry at her.
   C. One of her baby owlets was killed.
   D. Her best friend moved away from the forest.

9. Why did King Lion call a meeting of all the animals?
   A. to find out why the sun would not come up
   B. to appoint a new king
   C. to punish the animals
   D. to have a party

10. At the end of the story, who had to take the blame for making Mother Owl
     so sad and causing all the trouble?
     A. Python
     B. Mosquito
     C. Iguana
     D. Monkey

11. How did the mosquito feel at the end of the story?
    A. guilty
    B. happy
    C. hungry
    D. tired

12. Another title for this story could be
    A. Rabbit and Her Babies
    B. Mosquito and Her Friends
    C. How Jungle Animals Live Together
    D. Why the Lion is King of the Jungle
APPENDIX G

COMPREHENSION TEST - VALIDATED AND REVISED

Why Mosquitoes Buzz in Peoples' Ears
APPENDIX G

COMPREHENSION TEST - VALIDATED AND REVISED

Why Mosquitoes Buzz in Peoples' Ears

Directions: As the teacher reads each question with you, circle the letter of the best answer.

1. This story is mainly about
   A. how animals make friends.
   B. how animals live together in the jungle.
   C. why owls hoot.
   D. why iguanas are deaf.

2. Why did Iguana have sticks in his ears?
   A. Mosquito was talking too loud.
   B. His ears hurt.
   C. He didn't want to get water in his ears.
   D. Mosquito told a lie.

3. Who frightened Rabbit?
   A. Python
   B. Monkey
   C. Iguana
   D. Mosquito

4. Who frightened Monkey?
   A. Rabbit
   B. Crow
   C. Python
   D. Iguana

5. Who woke the sun every day so that the dawn could come?
   A. King Lion
   B. Mosquito
   C. Mother Owl
   D. Iguana
6. Why did the crow fly into the forest calling a loud cry?
   A. He was searching for food to feed the owlets.
   B. It was his duty to call the animals to a meeting.
   C. He was making fun of the mosquito.
   D. It was his duty to spread the alarm in case of danger.

7. When the monkey went leaping through the trees, he
   A. frightened the rabbit out of her burrow.
   B. woke the sun.
   C. broke a limb that fell on an owl's nest.
   D. was searching for food to feed the owlets.

8. Whose job was it to sound an alarm in the jungle in case of danger?
   A. Monkey
   B. Crow
   C. Rabbit
   D. Owl

9. What made Mother Owl so sad?
   A. One of her owlets died.
   B. She could no longer hoot.
   C. Her owlets were hungry.
   D. The sun would not come up.

10. Why wouldn't the sun come up?
    A. King Lion was angry.
    B. Iguana could not hear.
    C. Rabbit was frightened.
    D. Mother Owl would not hoot.

11. Why did King Lion call a meeting of all the animals?
    A. to find out why the sun would not come up
    B. to appoint a new king
    C. to punish the animals
    D. to have a party

12. Which animal hid and did not go to the meeting?
    A. Iguana
    B. Mosquito
    C. Rabbit
    D. Python
13. At the end of the story, who had to take the blame for making Mother Owl so sad and causing all the trouble?

A. Python  
B. Iguana  
C. Mosquito  
D. Monkey

14. How did the mosquito feel at the end of the story?

A. angry  
B. happy  
C. hungry  
D. guilty

15. Which happened first?

A. Rabbit was frightened.  
B. Iguana was annoyed.  
C. Monkey was alarmed.  
D. Owlet was killed.

16. Which happened last?

A. Monkey went leaping through the trees.  
B. Morning wouldn't come.  
C. The animals had a meeting.  
D. Owlet was killed.

17. What is the lesson or moral of this story?

A. Tell the truth.  
B. Stay out of the jungle.  
C. Don't be frightened.  
D. Hungry babies need food.

18. Another title for this story could be

A. Rabbit and Her Babies  
B. The Unpopular Mosquito  
C. The Monkey Who Could Not Hear  
D. Mother Owl's Happy Family
APPENDIX H

EVALUATION OF PROPOSED COMPREHENSION TEST

Why Mosquitoes Buzz in Peoples' Ears
# APPENDIX H

## EVALUATION OF PROPOSED COMPREHENSION TEST

**Why Mosquitoes Buzz in Peoples' Ears**

<table>
<thead>
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Date:______________________  Signature:________________________________________

Title:______________________
APPENDIX I

PROPOSED COMPREHENSION TEST

Tikki Tikki Tembo
APPENDIX I

PROPOSED COMPREHENSION TEST

Name ____________________________

School __________________________

Tikki Tikki Tembo

Directions: As the teacher reads each question with you, circle the letter of one correct answer.

1. This story was mainly about
   A. a lady who washed clothes in a well.
   B. an old man who fell into a well.
   C. two boys who learned to fly a kite.
   D. two boys who nearly drowned in a well.

2. Tikki Tikki Tembo and Chang were
   A. cousins.
   B. brothers.
   C. enemies.
   D. friends.

3. Tikki Tikki Tembo's whole name meant
   A. little or nothing.
   B. roaring water.
   C. the most wonderful thing in the world.
   D. the worst thing in the world.

4. Each morning Tikki Tikki Tembo and Chang went with their mother
   A. to wash clothes in a stream beside a well.
   B. to visit the Old Man With the Ladder.
   C. to gather food in a garden near a stream.
   D. to play games at a festival.

5. The Mother warned her children by saying
   A. "Don't drink the water in the stream."
   B. "Don't go near the well."
   C. "Don't throw stones into the well."
   D. "Don't swim in the stream."
6. Who fell into the well first?
   A. the Old Man
   B. Chang
   C. the Mother
   D. Tikki Tikki Tembo

7. Who climbed down into the well to save the children?
   A. the Old Man
   B. Chang
   C. the Mother
   D. Tikki Tikki Tembo

8. Why did Tikki Tikki Tembo almost drown when he fell into the well?
   A. No one saw him fall into the well.
   B. The Old Man did not like him.
   C. His mother forgot about him.
   D. He had a long name that was hard to say.

9. Who found it hard to say Tikki Tikki Tembo's whole name?
   A. Chang
   B. the Old Man
   C. the Mother
   D. a talking bird

10. After the children were rescued from the well, the Old Man with the Ladder
    A. gave them rice cakes to eat.
    B. washed their clothes.
    C. pumped the water out of them and pushed the air into them.
    D. took them to the Festival of the Eighth Moon.

11. After staying in the well water for a long time, how much later was it before Tikki Tikki Tembo was healthy again?
    A. a few minutes
    B. a few hours
    C. many hours
    D. many days

12. Another title for this story could be
    A. Games Children Play in China
    B. Why Old Men in China Have Long Names
    C. Why Chinese Mothers Give Their Children Short Names
    D. How Children in China Help Their Mothers
APPENDIX J

COMPREHENSION TEST - VALIDATED AND REVISED

Tikki Tikki Tembo
APPENDIX J

COMPREHENSION TEST - VALIDATED AND REVISED

Name __________________________

School __________________________

Tikki Tikki Tembo

Directions: As the teacher reads each question with you, circle the letter of the best answer.

1. This story was mainly about
   A. a lady who washed clothes in a well.
   B. an old man who had a ladder.
   C. two boys who helped their mother.
   D. two boys who nearly drowned in a well.

2. Tikki Tikki Tembo and Chang were
   A. cousins.
   B. brothers.
   C. enemies.
   D. friends.

3. Tikki Tikki Tembo's whole name meant
   A. little or nothing.
   B. roaring water.
   C. the most wonderful thing in the world.
   D. the worst thing in the world.

4. Chang's name meant
   A. first son.
   B. second son.
   C. the most wonderful thing in the world.
   D. little or nothing.

5. Each morning Tikki Tikki Tembo and Chang went with their mother
   A. to wash clothes in a stream beside a well.
   B. to visit the Old Man With the Ladder.
   C. to gather food in a garden near a stream.
   D. to play games at a festival.
6. The mother warned her children against
   A. swimming in the stream.
   B. visiting the Old Man.
   C. playing near the well.
   D. eating rice cakes.

7. Who fell into the well first?
   A. the Old Man
   B. Chang
   C. the Mother
   D. Tikki Tikki Tembo

8. The mother could not hear Tikki Tikki Tembo because
   A. he could not speak well.
   B. the water roared loudly.
   C. he was in the well.
   D. his mouth was filled with rice cakes.

9. Chang got out of the well sooner than Tikki Tikki Tembo because
   A. Tikki Tikki Tembo could run faster.
   B. The mother loved Chang best.
   C. Tikki Tikki Tembo had a ladder.
   D. Chang's name was short.

10. Who climbed down into the well to save Tikki Tikki Tembo?
    A. the Old Man
    B. Chang
    C. Sprits of the Festival of the Eighth Moon
    D. the Mother

11. Why did Tikki Tikki Tembo almost drown when he fell into the well?
    A. Chang did not see him fall into the well.
    B. The Old Man was taking a nap.
    C. His mother was busy washing clothes.
    D. He had a long name that was hard to say.

12. Who found it hard to say Tikki Tikki Tembo's whole name?
    A. Chang
    B. the Old Man
    C. the Mother
    D. a talking bird
13. After the children were rescued from the well, the Old Man
   A. gave them rice cakes to eat.
   B. washed their clothes.
   C. pumped the water out of them and pushed the air into them.
   D. took them to the Festival of the Eighth Moon.

14. After staying in the well water for a long time, how much later was it before Tikki Tikki Tembo was healthy again?
   A. a few minutes
   B. a few hours
   C. many hours
   D. many moons

15. Which happened first?
   A. The Old Man came with a ladder.
   B. Chang fell into the well.
   C. Tikki Tikki Tembo fell into the well.
   D. The mother could not understand Chang.

16. Which happened last?
   A. Tikki Tikki Tembo got sick.
   B. Chang fell into the well.
   C. The Old Man had a dream.
   D. The Festival of the Eighth Moon was celebrated.

17. What is the lesson or moral of this story?
   A. Great long names can be dangerous.
   B. Brothers should help each other.
   C. Always speak slowly.
   D. Obey your mother.

18. Another title for this story could be
   A. Games Children Play in China
   B. Why Old Men in China Have Long Names
   C. Why Chinese Mothers Give Their Children Short Names
   D. How Children in China Help Their Mothers
APPENDIX K

EVALUATION OF PROPOSED COMPREHENSION TEST

Tikki Tikki Tembo
**APPENDIX K**

**EVALUATION OF PROPOSED COMPREHENSION TEST**

**Tikki Tikki Tembo**

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Date:_____________  Signature:________________________

Title:________________________
APPENDIX L

MEMBERS OF THE ATTITUDE SCALE COMMITTEE
APPENDIX L

MEMBERS OF THE ATTITUDE SCALE COMMITTEE

Mrs. June R. Townsend, Third Grade Teacher
Port Allen Elementary School

Mrs. Ann M. Wilson, Third Grade Teacher
Lukeville Elementary School

Mrs. Chris O. Chustz, Third Grade Teacher
Chamberlin Elementary School
APPENDIX M

LETTER TO ATTITUDE SCALE COMMITTEE
Dear

I am looking forward to meeting you and working with your students for several periods during two days in November. Mr. L. C. Lutz and Mrs. Laura Simoneaux have granted me permission to carry out a research project in the third grade of your parish. The study will be the basis for my doctoral dissertation at Louisiana State University.

As you will see from the attached summary of the project, it involves the comparison of three methods of presenting stories to children. I need your assistance in validating the attitude questionnaire which has been constructed to gather data for the affective aspect of the study. You will notice that only two items (#2 and #5) are relevant to the study. The others are included merely as detractors in an effort to increase honesty of responses. Please record your reactions as to the suitability of each item on the attached evaluation form. I would appreciate your comments and suggestions for revision on any items which you consider not valid. Also, feel free to suggest changes in wording by writing directly on the questionnaire.

Mrs. Simoneaux will probably be able to assist you if you have any questions. However, please feel free to call me collect anytime.

I think your students will thoroughly enjoy the two stories I've chosen to use. At least, I hope so! I promise to make every possible effort to see that your regular schedule is interrupted as little as possible.

Thank you for your cooperation.

Sincerely,

Susan Staples

cc: Mrs. Laura Simoneaux
APPENDIX N

EVALUATION OF PROPOSED ATTITUDE SCALE
APPENDIX N
EVALUATION OF PROPOSED ATTITUDE SCALE

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Other comments or suggestions: ____________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Signed:______________________________
School:______________________________
APPENDIX O
ATTITUDE SCALE
APPENDIX O

ATTITUDE SCALE

 Directions: This is not a test. As the teacher reads each sentence with you, put an X on the face that shows how you feel.

1. I feel like this when I work arithmetic problems.
   [Smiley face] [Neutral face] [Sad face]

2. I feel like this about hearing a new story today.
   [Smiley face] [Neutral face] [Sad face]

3. I feel like this when I learn to spell new words.
   [Smiley face] [Neutral face] [Sad face]

4. I feel like this when I go out for recess.
   [Smiley face] [Neutral face] [Sad face]

5. If my teacher says I may read the new story I heard today, I will feel like this.
   [Smiley face] [Neutral face] [Sad face]

6. When my class sings together I feel like this.
   [Smiley face] [Neutral face] [Sad face]
APPENDIX P

LETTER TO PRINCIPALS AND TEACHERS
Dear Principals and Third Grade Teachers:

Enclosed you will find lists of your students as they have been assigned to groups for the storytelling sessions to be conducted in your school. You will notice that dates for the two days I plan to be in your school are indicated at the top of the schedule.

I am looking forward to meeting your students.

Sincerely,

Susan Staples

cc: Mrs. Laura Simoneaux
APPENDIX Q

SCHEDULE FOR PRESENTATIONS AND DATA COLLECTION
## APPENDIX Q

### SCHEDULE FOR PRESENTATIONS AND DATA COLLECTION

West Baton Rouge Parish Schools

Cognitive and Affective Results of Three Methods
of Presenting Stories to Third Grade Students

**TUESDAY, NOVEMBER 28, 1978**

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<tr>
<th>Time</th>
<th>Port Allen Elementary School Classes</th>
<th>Enrollment</th>
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</thead>
<tbody>
<tr>
<td>8:30 a.m. - 3:15 p.m.</td>
<td>Tikki Tikki Tembo Mrs. Townsend 30 Mrs. Heimendinger 29 Mrs. B. Gray 32 Mrs. Kelly 30</td>
<td><strong>121</strong> Total</td>
</tr>
<tr>
<td>Treatment A 8:30 - 9:15 a.m.</td>
<td>approx. 20 students (5 from ea. class)</td>
<td></td>
</tr>
<tr>
<td>Treatment B 9:30 - 10:15 a.m.</td>
<td>approx. 20 students (5 from ea. class)</td>
<td></td>
</tr>
<tr>
<td>Treatment C 10:30 - 11:15 a.m.</td>
<td>approx. 20 students (5 from ea. class)</td>
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**WEDNESDAY, NOVEMBER 29, 1978**

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<th>Time</th>
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<tr>
<td>8:30 a.m. - 11:15 a.m.</td>
<td>Tikki Tikki Tembo Mrs. Anderson 22 Mrs. M. C. Wilson 27 Mrs. A. Wilson 27</td>
<td><strong>76</strong> Total</td>
</tr>
<tr>
<td>Treatment A 8:30 - 9:15 a.m.</td>
<td>approx. 25 students (6-7 from ea. class)</td>
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<tr>
<td>Treatment B 9:30 - 10:15 a.m.</td>
<td>approx. 25 students (6-7 from ea. class)</td>
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<tr>
<td>Treatment C 10:30 - 11:15 a.m.</td>
<td>approx. 25 students (6-7 from ea. class)</td>
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**Wednesday, November 29, 1978**  
12:30 p.m. - 3:15 p.m.  

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<td>Mrs. Gray, Level 10</td>
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<td>Mrs. Chustz</td>
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| Treatment A | 12:30 - 1:15 p.m. | approx. 20 students (6-7 from ea. class) |
| Treatment B | 1:30 - 2:15 p.m. | approx. 20 students (6-7 from ea. class) |
| Treatment C | 2:30 - 3:15 p.m. | approx. 20 students (6-7 from ea. class) |

**Chamberlin Elementary School**

**Thursday, November 30, 1978**  
8:30 a.m. - 3:15 p.m.  

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<td>Mrs. Heimendinger</td>
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<td>Mrs. B. Gray</td>
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<td>Mrs. Kelly</td>
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</table>

| Treatment A | 8:30 - 9:15 a.m. | approx. 20 students (5 from ea. class) |
| Treatment B | 9:30 - 10:15 a.m. | approx. 20 students (5 from ea. class) |
| Treatment C | 10:30 - 11:15 a.m. | approx. 20 students (5 from ea. class) |

| Treatment A | 12:30 - 1:15 p.m. | approx. 20 students (5 from ea. class) |
| Treatment B | 1:30 - 2:15 p.m. | approx. 20 students (5 from ea. class) |
| Treatment C | 2:30 - 3:15 p.m. | approx. 20 students (5 from ea. class) |

**Port Allen Elementary School**

**Friday, December 1, 1978**  
8:30 a.m. - 11:15 a.m.  

<table>
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<td>Mrs. M. C. Wilson</td>
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<td>Mrs. A. Wilson</td>
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</table>

| Treatment A | 8:30 - 9:15 a.m. | approx. 25 students (6-7 from ea. class) |
| Treatment B | 9:30 - 10:15 a.m. | approx. 25 students (6-7 from ea. class) |
| Treatment C | 10:30 - 11:15 a.m. | approx. 25 students (6-7 from ea. class) |
FRIDAY, DECEMBER 1, 1978

12:30 p.m. - 3:15 p.m.

Why Mosquitoes Buzz in People's Ears

<table>
<thead>
<tr>
<th>Classes</th>
<th>Enrollment</th>
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<tbody>
<tr>
<td>Mrs. Gray, Level 9</td>
<td>18</td>
</tr>
<tr>
<td>Mrs. Gray, Level 10</td>
<td>11</td>
</tr>
<tr>
<td>Mrs. Chustz</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
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</tbody>
</table>

approx. 20 students (6-7 from ea. class)
APPENDIX R

CELL STATISTICS

Cognitive and Affective Aspects of the Study
### APPENDIX R

#### Table 18

Cell Statistics
Cognitive and Affective Aspects of the Study

<table>
<thead>
<tr>
<th>Groups</th>
<th>Reading Ability Level</th>
<th>N</th>
<th>Comprehension Tests</th>
<th>Attitude Scale</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
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<tr>
<td>Video</td>
<td>Low</td>
<td>17</td>
<td>20.29</td>
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<td></td>
<td>Middle</td>
<td>22</td>
<td>26.18</td>
<td>4.03</td>
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<td></td>
<td>High</td>
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<td>27.22</td>
<td>4.98</td>
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<td>Audio</td>
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<td>24</td>
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<td>5.79</td>
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<tr>
<td></td>
<td>Middle</td>
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<td>6.10</td>
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<td></td>
<td>High</td>
<td>22</td>
<td>24.82</td>
<td>6.21</td>
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<tr>
<td>Live</td>
<td>Low</td>
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<td>6.48</td>
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<tr>
<td></td>
<td>Middle</td>
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<td>24.21</td>
<td>5.09</td>
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<tr>
<td></td>
<td>High</td>
<td>19</td>
<td>28.16</td>
<td>4.98</td>
</tr>
</tbody>
</table>
VITA

Emeline Susan Staples, eldest daughter of Donald W. Staples, Sr. and Emeline R. Staples, was born in Thibodaux, Louisiana, on October 17, 1944. She has three sisters and one brother.

She completed her elementary and secondary education in the public schools of East Baton Rouge Parish. In 1966, she received a Bachelor of Science degree in secondary education at Louisiana State University. A Master of Library Science degree was conferred upon her in 1971 by San Jose State University, San Jose, California.

Her professional experience began in 1968 as a junior high school teacher and librarian in Los Altos, California. She was also employed for two years as a senior high school librarian in Palo Alto, California. In 1972, she accepted a position as Media Center Director at Morrill Middle School in San Jose, California to establish an exemplary multimedia library granted funding through Title II of the Elementary and Secondary Education Act. She also taught sixth grade for a year in the same school. In 1975, she moved to Dallas, Texas where she served as an elementary school media specialist for Dallas Independent School District.

She returned to Louisiana State University in 1977 to pursue the degree of Doctor of Philosophy. During her doctoral study, she served as Graduate Teaching Assistant for the College of Education and was the recipient of a fellowship to the Lake Okoboji Educational Media Leadership Conference sponsored by the Association for Educational Communications and Technology.

In August of 1978, she assumed a position as Assistant Professor in the College of Education at Texas A&M University.
EXAMINATION AND THESIS REPORT

Candidate: Emeline Susan Staples

Major Field: Education

Title of Thesis: Cognitive And Affective Results Of Three Methods Of Presenting Stories To Third Grade Students

Approved:

Charlie W. Roberts, Jr.
Major Professor and Chairman

James K. Irons
Dean of the Graduate School

EXAMINING COMMITTEE:

Dr. O. Far, Professor

Pauline M. Rankin

Sam Adams

Robert A. Maccanaka

Date of Examination:

July 2, 1979