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VITA

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THE COMPARATIVE EFFECTS OF TWO INSTRUCTIONAL
STRATEGIES ON SECOND GRADERS' READING
COMPREHENSION AND WRITING ABILITY

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by

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APPROVAL SHEET

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ABSTRACT

This study investigated the influence of writing instruction on the reading comprehension and the syntactic writing development of second-grade students. Research has shown that instruction in writing summaries can increase reading comprehension and improve writing skills significantly. Thus, this study attempted to determine the effect of writing instruction on reading comprehension and syntactic writing development.

This study employed two second-grade classrooms. Classrooms were randomly assigned to experimental or control groups. Within each group, subjects were divided into low, average, and high reading ability subgroups. Reading ability was determined according to scores received on the Comprehensive Tests of Basic Skills (CTBS), which was administered prior to treatment. The experimental treatment consisted of instruction in writing basal story summaries, while the control treatment consisted of writing short answers to questions provided in the basal workbook. All students received four weeks of writing instruction prior to the posttest, which required them to write a story and answer multiple choice items in reading comprehension, language mechanics, and language expression. An analysis of variance and covariance with repeated measures was used to compare mean scores of the experimental and control

groups of low, average, and high reading ability students.

No significant differences were found when the dependent reading comprehension variable was considered. However, statistically significant differences were found between the experimental and control groups' post- and delayed posttest scores when the dependent writing variable was considered. Specifically, there were significant differences found in language mechanic scores, the number of sentences written, the number of words per sentence, and the number of T-units per sentence. It is important to point out that the mean scores of the experimental group tended to be consistently higher than the mean scores of the control group on post- and delayed posttest trials. Thus, a tendency was established which indicated the desirable effect of summary writing instruction and the need to replicate the research over a longer period of time.

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Chapter 1

THE PROBLEM

Introduction

Few educators would argue the importance of teaching reading and writing in the elementary language arts curriculum. Contrary to this point of view, when the decision to teach reading or writing occurs, time allocations for instruction have generally favored reading. Graves (1978) provided evidence of a decline in the amount of time students spend writing and the amount they produce in a given year. He further stated that "many teachers of writing either do not practice the writing 'craft' themselves, or were not even trained to teach writing in their preparatory courses" (p. 15). Shanahan (1979) supports the findings of Graves when questioning elementary teachers about the amount of time they spend in teaching writing. Responses to a questionnaire indicated that generally an insufficient amount of time was allocated. Results from a more recent survey by Edmond, Brown, and Cline (1983) to determine elementary teachers' attitudes, opinions, and practices about the teaching of language arts revealed a strong support for a variety of writing assignments; yet, there appeared to be minimal opportunities for students to write on a regular basis. Out of ten

components of the language arts curriculum, writing ranked eighth in importance compared to vocabulary development and reading, which ranked first and second, respectively.

Reports by the National Assessment of Educational Progress (NAEP) found that a majority of American students at all ages demonstrated little skill in overall organization when writing and revising reports and explanatory or persuasive letters (Stotsky, 1984, p. 4). More specifically NAEP reveals that 85 percent of all thirteen-year-olds can correctly complete a multiple choice check on comprehension, but only 15 percent can write an acceptable sentence summarizing the paragraph they have read.

These reports and others have prompted current concern for students' deficiencies in writing ability. Elementary schools are beginning to look critically at the status given to writing instruction and subsequently have revised and developed new language arts curricula.

Recent educational reports, such as the Carnegie Report (Boyer, 1983) are calling for a renewed emphasis on writing in the classroom. Concurrent with this report is the appearance of many articles, books, and research that focus on reading and writing activities and how they are related. The popularity of the reading/writing relationship is attested to by its appearance as a descriptor in Educational Resource Information Center (ERIC).

Many researchers have attempted to show a relationship between reading and writing (Evanekko,

Ollila, & Armstrong, 1974; Bippus, 1977; Shanahan, 1982; Chall & Jacobs, 1983).

If one examines the empirical evidence, the connection between reading and writing appears strong. Stotsky (1983) has presented a comprehensive review of the research on reading and relationships. To summarize briefly:

the correlational studies show almost consistently that better writers tend to be better readers (of their own writing as well as of other reading material), that better writers tend to read more than poorer writers, and that better readers tend to produce more syntactically mature writing than poor readers. (p. 636)

In Stotsky's (1983) review of experimental studies, she writes that almost all the studies that used writing activities specifically to improve reading comprehension found gains. More specifically, certain kinds of writing experiences have produced increments in reading comprehension. One set of studies involves sentence combining, a technique developed to enhance syntactic fluency in writing (Fisher, 1973; Hughes, 1975; Straw & Schreiner, 1982; Trivelli, 1983).

Most contemporary sentence combining exercises eschew grammatical terminology and focus on teaching students how to compose highly complex sentences through a structured sequence that begins with combining several very simple kernel sentences into fairly simple single sentences and moves to combining a large number of both simple and more complicated basic sentences into quite complex single sentences. (Stotsky, 1982, p. 237)

Other studies employed a variety of writing activities which lead to increased reading comprehension from kindergarten through college grade levels. These

investigations used control groups who did 'no writing.' Conversely, the experimental groups engaged in the following: paraphrasing précis and expressive writing (Culp & Spann, 1984); self generated writing--initiated by the student from a meaningful point of reference (Blair, 1984; Fleming, 1985); model writing--imitated the written structure (Taylor & Beach, 1984; Fleming, 1985); and writing essay responses to stories read (Petrosky, 1982).

A few experimental studies relating reading and writing instruction in grades one through six were included in Stotsky's (1983) report. Notable among those cited were studies where fifth and sixth grade students' reading comprehension and recall improved when they were taught summary writing.

It is apparent from these findings that children need instruction in writing, specifically, writing form. Although the quality of their content exceeds form, as indicated by ratings, one cannot ignore their deficiencies in sentence structure, organization, spelling, and grammar.

The above studies serve as evidence of a continued interest among researchers in the topic of writing as it effects reading comprehension. These studies and others support the contention that writing of 'all kinds' increases reading comprehension. With this in mind, the direction for future research should examine the extent to which combining instruction in reading and writing will result in better performance in both areas.

Thus, pedagogical intervention in the form of instruction in writing story summaries may manifest significant effects in a student's ability to comprehend what he has read and may increase a student's writing development.

Purpose of the Study

The purpose of this study was to investigate the impact of writing on the reading comprehension of second graders: specifically, to (1) determine whether writing story summaries or writing short answer responses to questions related to stories in the basal reader will or will not increase students' comprehension of these stories; and (2) determine whether the association of these writing tasks with the stories will or will not affect students' syntactic writing development.

For this study, it was hypothesized that training second grade students to write summaries of basal reader stories would have a facilitating effect on comprehension and syntactic writing development of those stories.

The act of writing summaries of the basal reader stories involved the students' analyzing the underlying structure of the stories through the use of summary maps in order to identify common elements in a story. With this in mind, students used their maps to facilitate summary writing.

The following research questions were investigated in this study:

1. To what extent does modeled summary writing (e.g., using summary maps) produce increments in reading comprehension?
2. To what extent does modeled summary writing produce increments in writing syntactic complexity?
3. To what extent does modeled summary writing produce increments in organization, content, form, and handwriting of the written product?

Statement of the Problem

The objectives of this study were: (a) to study whether differences in reading comprehension levels resulted from writing instruction, (b) to measure whether such differences were statistically significant, (c) to compare these differences in groups of second graders with low, average, and high reading ability levels, and (d) to determine whether writing instruction affected students' syntactic writing development.

Rationale

Basic Assumptions

Assumptions that were considered basic to the study were:

1. Students were placed in the appropriate level for reading instruction according to their reading ability.

2. Students placed in the experimental group had a range of reading abilities similar to those placed in the control group.

3. Four consecutive weeks of writing instruction were adequate for the experiment to produce significant results.

4. Instructional periods of twenty minutes daily were adequate for all the subjects participating in the investigation.

5. Four weeks of no instruction was a sufficient delayed period of time to measure the retention of reading comprehension and writing gains.

6. No additional writing instruction was employed by experimental and control groups.

7. Students in both experimental and control groups had some reading and writing knowledge prior to the investigation.

8. The Comprehensive Tests of Basic Skills validly measured reading comprehension for the population tested.

9. The Comprehensive Tests of Basic Skills validly measured language for the population tested.

10. Experimental and control teachers met once during the week to share reading lesson plans. Conferences optimized the control of basal reader story order, quantity of stories read and written, and instructional time scheduled.

11. Stories in the basal reader were written to conform to the story grammar or story map.

General Hypotheses

The following null hypotheses were investigated by this research.

Hypothesis #1--When tested on their ability to comprehend passages, students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different from those students in the control group who have not had such writing instruction.

Hypothesis #2--When tested on their ability to comprehend passages, the high reading ability students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different from the high reading ability students in the control group who have not had such writing instruction.

Hypothesis #3--When tested on their ability to comprehend passages, the average reading ability students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different from the average reading ability students in the control group who have not had such writing instruction.

Hypothesis #4--When tested on their ability to comprehend passages, the low reading ability students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different from the low reading ability students in the control group who have not had such writing instruction.

Hypothesis #5--When tested on their ability to write about a wordless picture book story, students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from those students in the control group who have not had such writing instruction.

Hypothesis #6--When tested on their ability to write about a wordless picture book story, the high reading ability students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from the high reading ability students in the control group who have not had such writing instruction.

Hypothesis #7--When tested on their ability to write about a wordless picture book story, the average reading ability students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from the average reading

ability students in the control group who have not had such writing instruction.

Hypothesis #8--When tested on their ability to write about a wordless picture book story, the low reading ability students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from the low reading ability students in the control group who have not had such writing instruction.

Hypothesis #9--When tested on their ability to write about a wordless picture book story, students in the experimental group who have been taught to write story summaries will produce stories not significantly different from those students in the control group who have not had such writing instruction.

Hypothesis #10--When tested on their ability to write about a wordless picture book story, the high reading ability students in the experimental group who have been taught to write story summaries will produce stories not significantly different from the high reading ability students in the control groups who have not had such writing instruction.

Hypothesis #11--When tested on their ability to write about a wordless picture book story, the average reading ability students in the experimental group who have been taught to write story summaries will produce stories not

significantly different from the average reading ability students in the control group who have not had such writing instruction.

Hypothesis #12--When tested on their ability to write about a wordless picture book story, the low reading ability students in the experimental group who have been taught to write story summaries will produce stories not significantly different from the low reading ability students in the control group who have not had such writing instruction.

Limitations

This study and its results were subject to the following limitations:

1. Instruction was limited to stories in the basal reader.
2. Writing instruction was limited to twenty minutes per session for four consecutive weeks.
3. The research population was limited to second grade students from one elementary school in a rural area.
4. The reliability of using Form V for the pre-testing session and Form U for the post, and delayed post-testing sessions were not reported by the publishers of the Comprehensive Test of Basic Skills (CTBS), thus, the results may be questioned as to whether the two forms provided comparable measurement over a given score range.

5. The Comprehensive Test of Basic Skills may not accurately measure reading comprehension since evidence supporting the validity of its interpretations and suggested uses of its various scores have been inadequately addressed by the publishers (Linn, 1985).

Definitions

Basal readers--are

textbooks published in a series for use in the elementary grades, beginning with first grade. Each set of students' books is accompanied by a teachers' guide or teachers' manual with page by page suggestions and instructions for teaching reading using the materials in the books. Other materials such as workbooks and audiovisual teaching aids are published to accompany basal readers. The teachers' guide or manual gives suggestions and direction for using these materials as well. (Finn, 1985, p. 70).

Holistic--a method of evaluating writing in which the composition is viewed as a "whole" rather than distinct parts (Mochamer, 1985).

Paraphrase--translation of a passage, approximately the same length as the original, into a reader's own idiomatic language (Corbett, 1971).

Précis writing--the French term *précis* . . . literally means "a cut-down statement." In other words it is an abstract or summary which captures the essence of a selection within a required word limit (Hood, 1967, p. 1).

Reading comprehension--comprehension ability is thought to be a set of generalized knowledge-acquisition

skills which permit people to acquire and exhibit information gained as a consequence of reading printed language (Bormuth, 1969, p. 50).

Story structure--a conceptual outline common to most stories; also known as story schema or story grammar. "Characters are introduced; they set a goal for themselves; they attempt to reach the goal; they encounter set backs; they make further attempts; they reach the goal" (Finn, 1985, p. 161).

Summary--a condensed version of information stated in one's own words, containing main ideas (Karlin, 1980, p. 381).

Summary map--pictorial outline or diagram of a story which focuses on the common elements in a story: setting, problem, goal, events, and resolution. Presents a visual summary of the story (see Appendix A).

Summary mapping--story mapping is a way of reprocessing the material and can increase comprehension (Whisler, 1982, p. 49); is a way to identify the common elements in a story; students develop a schema for the concept of "story" (Coley, 1982, p. 6).

Syntactic complexity or syntactic maturity--an increase in the mean number of words per T-unit; words per clause; clauses per T-unit; and words per sentence (Hunt, 1970).

Syntactic writing development--the process used to arrange words to form phrases and sentences over a period of time. Phrases and sentences vary in length, complexity, and quantity.

T-unit--a "minimal terminal unit" . . . defined as one main clause plus any subordinate clause or nonclausal structure that is attached to or embedded in it. Any complex or simple sentence would be one T-unit, but any compound or compound complex sentence would consist of two or more T-units (Hunt, 1970, p. 4).

Summary

Chapter one proposed and explained the need for an experimental study of the effect of writing instruction on comprehension and syntactic writing development. An examination of the empirical data supports the contention that writing of 'all kinds' increases reading comprehension. Thus, this study was devised to test the relationship of two instructional writing strategies on second graders' reading comprehension and writing ability. The independent variable was writing instruction while the dependent variables were post- and delayed posttest reading comprehension scores, language scores, writing syntactic mean scores, and overall holistic ratings of students' writing ability. This chapter presented both the research hypotheses and some definitions pertinent to the study.

Chapter 2

REVIEW OF THE LITERATURE

Most of the research on summary writing, paraphrased writing, and précis writing has been confined to the secondary or postsecondary level. Recently, however, researchers have focused their investigations on the facilitative effects of writing summaries at the elementary level.

Early researchers posited the superiority of summary writing instruction when compared with other instructional strategies for improving reading. These researchers are consistent in their findings and report improvement gains in reading and/or writing among students trained in summary writing.

Jencke (1935) conducted an extensive investigation of the relationship between précis writing and improvement in reading. She found that college and high school students who received training in précis writing demonstrated improvement over those students engaged in free composition. Superiority was evidenced among the trained group, particularly when examining results of a vocabulary test and an untimed test of reading interpretation.

An earlier study by Dynes (1932) also provided support for summary writing. He concluded that taking notes, outlining, and summarizing were superior to other instructional strategies (e.g., reading and rereading) for

immediate learning and retention of information in high school history classes.

When considering the enduring effects of summary writing across variant content areas and the effects of summary writing after the training period, researchers investigated the effects of selected writing tasks upon the transfer of learning. Salisbury (1934) studied the effects of training seventh, ninth, and twelfth grade students in logical organization. Numerous lessons in outlining and summarizing, using expository materials from a variety of secondary school subjects, were employed during English class. Students trained in outlining and summarizing significantly improved their performance on reading tests, reasoning tests, and achievement tests in history, civics, and general science. Contrary to the gains made across variant content areas, the rate of reading declined. Salisbury inferred that a greater investment of time for training in summary writing may result in improved understanding of expository tests.

Like Salisbury, Hayes and Copeland (1982) investigated the effects of summary writing, but limited their content area to reading. Specifically, Hayes and Copeland determined whether assigning especially prepared reading material and writing tasks would influence the way readers produce inferences about a text. The writing tasks considered in Hayes' investigation were paraphrasing, comparing/contrasting, and question formulating. The

control group engaged in a nonwriting task, essentially matching exercises. The effects of the writing tasks (outlining and summarizing) revealed that writing in conjunction with reading did affect inference production, but with differential effects across variant writing tasks. When analyzing the effects of writing tasks in this study, both paraphrasing and comparing/contrasting writing tasks affected inference production. To the contrary, the findings suggest that formulating questions in response to a text may result in more restrained discourse production in subsequent reading-writing tasks. Hayes and Copeland (1982) also reported that when subjects were given a passage and instructed to write about what they had read, subjects continued to write systematically according to the treatment condition previously administered, although directions to employ learned writing tasks were unannounced.

Consistent with previous research findings, Bretzing and Kulhavy (1979) compared two similar types of notetaking writing tasks which assist students in logical organization, specifically paraphrasing and summarizing, and their effect on students' comprehension. When compared to other writing tasks (verbatim and letter-search notes), paraphrase and summary notetaking both had facilitating effects on recall. No significant differences were found between paraphrase and summary notetaking, but students who took verbatim notes scored significantly lower on comprehension tests than those who summarized or paraphrased. The letter-search condition

was described by Bretzing and Kulhavy (1979) as the easiest writing tasks because students simply wrote words without paying much attention to what they were reading. Verbatim notetakers were described as those students who wrote sentences word-for-word. The researchers concluded that verbatim and letter-search notetaking tasks do not increase students' performance on comprehension tests but summary and paraphrase notetaking do.

More recent studies have compared the facilitative effects of summary writing on comprehension with other instructional tasks. Taylor and Berkowitz (1980) found that sixth-grade students, who wrote a one-sentence summary after reading a passage from a social studies textbook, did better on measures of comprehension and recall than students who used a study guide or answered questions after reading or simply read the passage. Bates (1983) argued that when comparing the facilitative effects of three different treatments (summary writing, writing short answers to questions, and rereading a story) on ninth graders' comprehension, retention, and attitudes, significant differences were found across variant reading abilities. No significant difference was found between the effects of summary writing and writing short answers to questions for good and poor readers' comprehension, retention, and attitudes. There were no significant differences between summary writing and rereading on good and poor readers' comprehension and retention, but the rereading treatment

produced significantly more positive attitudes for poor readers than did other treatments. Shugarman (1983) found that sixth grade students, taught to paraphrase, made significantly more informational elaborations in their writings, and recalled more details than children who copied or studied a passage. Mosenthal (1984) found that sixth-grade Social Studies students and eighth-grade Physical Science students trained in interpreting what had gone before and in terms of statement of the author's goal, varied on writing and comprehension measures when compared to a control group who received no training. Both Social Studies and Physical Science students in the experimental group wrote more structured summaries as a result of training, and performed better on all comprehension measures. When grades were assigned to summary quality, the Social Studies experimental students significantly outperformed control students.

Certain summary writing tasks have greater facilitative effects on reading and writing performance when specific conditions or teaching principles are considered in application. Newlun (1930) found that improvement in summary writing was a prerequisite to increased mastery of historical facts and information in contrast to ordinary ways of studying. He found that practice in summary writing without improvement was not particularly beneficial in fifth-grade History classes.

Sternglass (1983) supported Newlun's (1930) contention concerning practice and improved summary writing. When examining university students' papers, she found that specific writing tasks were less demanding cognitively. Sternglass discussed the cognitive levels of specific summary writing tasks and suggested that these writing tasks be designed sequentially so that they challenge students' thinking skills and engage them in the speculation of new ideas.

In a similar vein, Day (1980) contends that summary writing is governed by internalized rules which can be directly instructed. Although Day (1980) did not determine whether summary training would in fact improve comprehension, she devised summarization rules and explored their efficacy with average and remedial junior college students. She found that average students required less explicit instruction in summary rules than a remedial group who needed routine training that involved rules plus corrective feedback for effective summarization.

A replication of Day's (1980) study was developed by McNeil and Donant (1982). They questioned whether or not younger children could be taught Day's summarization rules. The researchers also questioned what the effects would be on reading comprehension.

McNeil and Donant (1982) showed that fifth graders could learn summarization rules which had facilitative effects on comprehension. Students were assigned to one of three groups: a summary rule training group, a summary

writing group, and a non-instructional control group. Six basic rules essential to summarization and basic operations in comprehending and remembering prose were considered in this study.

The six rules are: (1) deleting unnecessary or trivial material; (2) deleting information that is important but redundant; (3) substituting a superordinate term for a list of items; (4) substituting a superordinate term for components of an action; (5) selecting a topic sentence; and (6) when there is no topic sentence, inventing one. (McNeil & Donant, 1982, p. 215).

These rules were adopted from the research of (Kintsch & van Dijk, 1978; Day, 1980). The rule training group was given training on each of the six rules. Once rules were taught in isolation, additional paragraphs were given to students which required application of rules. Summaries were limited to ten words or less and could not contain unimportant details. Students in the control groups engaged in regular classroom activities without special treatment. The results of this investigation showed students given training in the rules of summary writing appear to write better summaries and achieve higher scores on reading comprehension tests than students who are not given such training. In addition to these findings students who received training and opportunity to write summaries excelled over both those who wrote summaries without rule training and those who did not receive training or opportunity to write summaries. McNeil and Donant (1982) inferred in their research that rule training alone may not facilitate comprehension, but must be coupled with a writing application,

specifically writing summaries to improve performance on an inferential comprehension test.

Contrary to the findings of McNeil and Donant (1982), Bean, Singer, Sorter, and Frazee (1983) did not find students trained in a summarization strategy to score significantly higher on reading comprehension tests when compared to students who received no training. Specifically, Bean, et al. investigated eleventh-grade students enrolled in honors world history classes and found that when students were given a series of multiple choice comprehension tests covering material taught in class, students trained in a summarization and self-generating question strategy did not have comprehension scores significantly different from the control group who received no training. Training did, however, influence students' ability to recall information and express it in a more terse manner. Bean et al. also noted that students had positive attitudes toward learning the summarization portion of the strategy but were less enthusiastic about the self-questioning portion.

A few researchers were concerned with how to use summary writing most effectively. Linden and Wittrock (1981) studied the teaching of reading comprehension according to Wittrock's (1974) model of generative learning whereby the reader is able to actively generate relations (1) among the parts of the text, and (2) between his knowledge or experience and the text. Specifically, Linden and Wittrock trained fifth-grade students to construct

summary sentence metaphors, analogies, and illustrations based on the stories they read according to the model. Reading comprehension was generated through four simple steps: (1) reading a story; (2) using imagery or making a mental picture of what was read; (3) drawing these mental pictures; and (4) writing one or two sentences to summarize the story. Students who received training, according to a generative learning model, scored significantly higher on comprehension tests than those who engaged in conventional activities (e.g., identification of main ideas, events, and characters; categorization skills; vocabulary; discrimination of syllables; and phonetic analysis).

Doctorow, Wittrock, and Marks' (1978) study also revealed that generative teaching facilitates comprehension among high and low ability readers using common reading materials. Doctorow et al. found that sixth-grade students, who read stories with or without paragraph headings and with or without instructions to generate a summary sentence for each paragraph, differed in comprehension and recall. Students who wrote an original one-sentence story after each paragraph they read showed greater gains in comprehension when measured by multiple choice tests of inferential meaning. Paragraph headings facilitated comprehension more for the low-ability readers than for the high ability readers.

Interestingly, one study dealt with the comparative effects of reading and writing prose and diagrammatic

summaries. Taylor (1984) investigated whether students comprehend varied expository prose better when they read or write a prose summary or diagrammatic summary. No significant difference were found when reading prose and diagrammatic summaries. When writing summaries were compared to reading summaries, significantly better comprehension was shown for writing. When prose summaries were compared to diagrammatic summaries, significant comprehension advantages were observed for prose. Summary writing facilitated the comprehension of expository prose for community college students in Taylor's investigation, but results were limited to the material students were requested to read.

Although summary writing appears to facilitate comprehension, the material students read cannot be ignored. With this in mind, the student's knowledge of text structures warrants consideration.

Recent researchers have provided evidence that readers possess some sort of story schema awareness and by the time children begin formal schooling they have learned the underlying structure of stories (Applebee, 1978; Stein & Glenn, 1979) and that a progression in complexity of story structures is evidenced in the oral and written recall of stories from the ages of two to seventeen (Applebee, 1978). In a longitudinal study, King and Rentel (1981, 1982) found that by the time children enter first grade, they have a fundamental understanding of the various cohesive devices that hold a text together, although children's understanding

of story structures varied by genre. Reid (1981) analyzed narratives of students in grade levels two through six and found that half the students at each grade level named and developed characters, wrote one complete episode, wrote resolutions to plots, and used past tense. The students in this study demonstrated the use of story grammar as early as second grade. Better comprehenders used more story features in their narratives than poor comprehenders. Furthermore, Reid found comprehension correlated significantly with story features written in third- and fourth-grade narratives.

Some researchers have concluded that story schema varies with age and ability under variant conditions. Hansche and Gordon (1983) examined assigned narratives of first, fourth, eighth, and tenth graders of varied reading abilities. The narratives were scored according to story grammar models (e.g., Setting, Initiating Event, Response, Consequence, etc.). Hansche and Gordon concluded from their examinations that the concept of story, as measured by story grammar, changed and expanded as children advanced in grade. First graders used fewer story elements than fourth, eighth, and tenth graders. Examinations further revealed that the story element 'Initiating Event' appeared significantly more times in stories produced by good first-grade readers than poor readers. The element 'Consequence' was consistently omitted from first-grade poor readers' stories, while about half of the good readers included it. No significant differences were found between the stories written by good

and poor readers at the fourth-grade level. By eighth grade no significant differences were found between the stories written by good and poor readers. Tenth-grade stories written by poor readers differed significantly from those written by good readers. Poor readers produced stories with significantly fewer story elements, deleting most often the elements 'Reaction' and 'Attempt.' Good readers at this level tended to include these elements in their narratives.

Chodos and Mosenthal (1978) investigated the function which schemata play in fourth graders' reading comprehension under variant operational conditions. They found that children who use schemata to comprehend stories consistently recalled more propositions from some story categories (e.g., Setting, Beginning, Development, and Ending of the story) than from others. Results showed that the saliently remembered categories remained consistent under varying operational conditions (e.g., immediate recall, delayed recall, and immediate forced recall). A significant difference in children's preference for recalling categories was evidenced under variant conditions. Chodos and Mosenthal inferred from this result that when stories do not conform to the predicted patterns (some stories rewritten and story categories placed out-of-sequence) the order of saliency and recall differs significantly.

The pedagogical application of story schema awareness was evidenced in some of the research. Findings revealed that direct instruction of story structure

facilitated comprehension, recall, and the overall quality of the written product. Gordon (1980) found that fifth graders trained to apply a simplified story schema to basal reader stories showed a significant increase in recall of high level information in the story summaries they wrote or specifically from the categories: Minor Setting, Initiating Event, Reaction, and Final Resolution.

Gordon and Braun (1982) replicated Gordon's previous study and found significant effects of story schema training on the reading comprehension and writing of fifth graders. The experimental group significantly outperformed the control group (no training given) in the recall of text structure categories when using both familiar and unfamiliar reading materials. The experimental group answered significantly more literal and inferential questions correctly. Results also showed the experimental group generated more text structure categories when given a creative writing task. Duncan (1981) also studied the effects of story schema awareness on the writing growth and reading comprehension of seventh-grade students. Duncan developed a seven step approach to make students knowledgeable of narrative structure and author style.

The seven steps were incorporated into a 'listen, discuss, write' approach: initial writing, descriptive writing, developing plot, elaboration, critiquing, refining, editing, and publishing. (p. 6)

Duncan's case study revealed that as skills improved, fewer words were used, coherence and characterization improved, as well as basic story development.

Thus, research not only points to the facilitative effects of summary writing on comprehension, but also to the importance of the role that understanding of prose structure plays in reading comprehension.

Devices have been developed to assist students in identifying specific prose structures. One specific device is the story map.

Story maps have been constructed and used as tools for teachers in developing reading comprehension skills (Coley, 1982; Whisler, 1982; Gambrell & McLaughlin, 1985) and can help children identify common elements in stories. "With teacher guidance students develop a schema for the concept of 'story'" (Coley, 1982, p. 6).

Summary

Chapter two has presented a general review of research on summary writing. Researchers were consistent in their findings and reported improvement gains in reading and/or writing among students trained in summary writing. Recent studies concerned with the facilitative effects of summary writing on comprehension were also reviewed here. Specific studies dealt with the relationships between summary writing on comprehension with other instructional tasks. In this area, reference was made to the work of Barbara Taylor and Sandra Berkowitz. Taylor and Berkowitz's work has demonstrated that writing a one-sentence summary after reading a passage leads to greater increments in

reading comprehension and recall when compared to other instructional writing tasks.

Chapter 3

PROCEDURES

Description of the Sample

Forty-two second graders enrolled at Monroe Elementary School, Casey, Illinois, participated in this study. Casey, located 35 miles southwest of Terre Haute, Indiana, has a population of 3,026. The economic base is primarily agricultural. The total population of the school is 372, with a racial composition predominantly Caucasian and a socioeconomic status of lower-middle class. Approximately 16.7 percent of the school's enrollment is composed of students from low-income backgrounds. The school's grade levels include Pre-school and Kindergarten through grade four. Teachers participating in the study have acquired a Bachelor of Science degree in Education and have eight or more years of teaching experience, with a minimum of five years at the second-grade level. Students represent heterogeneous grouping with respect to Reading; however, all second-graders used the same basal reader for instruction.

Design of the Study

Two second-grade classrooms were randomly assigned to experimental or control groups. There was no significant difference between groups as evidenced by pretest results (see Appendix B). Within each group, subjects were divided

into high, average, and low reading ability groups according to scores received on the Comprehensive Tests of Basic Skills (CTBS), which was administered prior to treatment. The reading and language components of the CTBS were considered in this study. Normative scores from the CTBS Norms Book were used to determine ability groupings. Cut-off points were: Scale score 598 and higher (above average); 588-511 (average); and 498 and lower (below average). Once test scores were known, subjects in the experimental and control groups were matched to distribute equal numbers across each ability group. All scores were recorded by identification numbers only. Thus, for this study, subjects were divided into six basic groups:

	<u>Experimental</u>	<u>Control</u>
High Reading Ability Students	E ₁	C ₁
Average Reading Ability Students	E ₂	C ₂
Low Reading Ability Students	E ₃	C ₃

Instruments

The Comprehensive Tests of Basic Skills, (CTBS) Forms U and V Level D (grades 1.6-2.9) were used to assess reading comprehension, language mechanics, and language expression. Stories from the wordless picture book, FLICKS by Tomie dePaola, were used as the stimulus for writing assessment. Permission to copy stories was granted by the publisher (see Appendix C).

The Comprehensive Test of Basic Skills is a norm referenced, standardized achievement test battery. There are two test forms available, each composed of six tests: (1) reading (word attack, vocabulary, reading comprehension, total); (2) language (language mechanics, language expression, total); (3) mathematics (mathematics computation, mathematics concepts and applications, total); (4) spelling; (5) science; and (6) social studies. Only the reading and language components were considered for this investigation.

The reading component of the CTBS measured the student's comprehension of reading passages. Test items determined the student's ability to extract details, analyze characters, identify main ideas, and draw conclusions from reading passages.

The language component of the CTBS was considered a criterion variable in this study because it emphasized writing-related skills. Because the language tests are norm-referenced tests, they provided information about the instructional needs of the student. Specifically, the language mechanics test required the student to recognize the correct capitalization and punctuation in passages and/or letters. Thus, the student employed proofreading skills similar to those required for critically evaluating one's own written work. The language expression test measured another dimension of the student's writing performance. The student employed skills in language usage. The correct noun, pronoun, verb, adjective, and/or adverb

were identified for sentence completions. Knowledge of sentence structure was measured when the student combined sentences, selected and developed topic sentences, and identified the correct word order of a sentence.

The CTBS was administered to second-graders by the researcher. Level D, Forms V and U, were used for the three testings (pre-, post-, and delayed posttest) in late October, November, and December, respectively.

The first testing period (pretest) utilized the CTBS, Form V, level D. Form V was administered prior to treatment. The second testing period (posttest) utilized the CTBS, Form U, level D. Form U was administered following four weeks of treatment. The third test administration re-employed the CTBS, Form U, level D. The third testing (delayed posttest) occurred after four weeks of no 'treatment' or non-instructional time.

According to a review in The Ninth Mental Measurements Yearbook (1985), by Robert L. Linn, this popular achievement test battery:

is a highly professional product that offers some unique advantages such as score specific standard errors of measurement. It is worthy of careful consideration by schools seeking a comprehensive achievement test battery of any of the grades K through 12. (p. 385)

Linn (1985) reports a number of CTBS desirable features. Included in these are: clear illustrations, explicit directions for administration, and a wide range of score reporting systems (percentile, stanine, grade equivalent, normal curve equivalent scores, and scale

scores). Options include locator tests to select an appropriate level of the CTBS for a student, practice tests for familiarizing students with the test format, and combination services for combining CTBS results with other CTB/McGraw-Hill tests (Test of Cognitive Skills, PRI Reading Systems, and Diagnostic Mathematics Inventory).

In another review, Shepard (1985) recognizes CTBS as one of the best developed standardized achievement test batteries available. With reference to content validity, Shepard expresses:

The match between test content and local curriculum should be the most important consideration in selecting an achievement test. The developers of CTBS-U have done the hard work of surveying state and local curriculum guides and textbook series to determine which objectives are most often taught in each subject at each grade level. (p. 386)

Because CTBS-U is a relatively new test, it reflects recent changes in instructional materials and trends in the interests and emphases of subject area specialists. Test administration is made most effective by providing the reader with several practice items, item-locator pictures, and never more than five test items per page. The reliability of the CTBS is considered adequate although traditional reliability data are not available. The national standardization and norming procedures were extensive. To improve the accuracy of norms, norming was done twice a year. Users can ensure greater accuracy of normative interpretations by planning testing periods to correspond to standardization times, either early October

or late April.

The writing performance tests required subjects to read a wordless picture book story and write one or more sentences about it. Subjects were limited to twenty minutes for completion of the writing performance tests.

The first testing period (pretest) utilized the wordless picture book story, "Tooth Troubles" (see Appendix D). This writing stimulus was administered prior to treatment. The second testing period (posttest) utilized the wordless picture book story, "The Birthday Cake" (see Appendix E). It was administered four weeks after treatment. The third test administration re-employed the wordless picture book story, "The Birthday Cake." The third testing (delayed posttest) occurred four weeks after 'no treatment' or non-instructional time.

Because the writing stimulus is wordless, the readability level was adequate for all ability levels participating in this investigation. No standardized achievement tests designed to evaluate childrens' writing abilities were found appropriate for use in this study. A modified writing assessment, adopted from Chall and Jacobs (1983) was employed, whereby writing samples were evaluated on five objective and five judgmental counts or traits. Two second grade teachers, employed by the Chicago Board of Education School System, analyzed writing samples to determine the overall holistic rating of each writing sample. A third reader analyzed writing samples when discrepancies

in rating between initial readers occurred. The readers have acquired a Bachelor of Science degree in Education and have eight or more years of teaching experience with a minimum of five years at the second grade level. Readers were independent of this investigation. The instrument employed by readers for writing assessment is appended (see Appendix F).

The above trained readers evaluated each writing sample according to the criteria listed in Tables 1-4.

A writing ability assessment was developed by the researcher to determine the syntactic development mean of each writing sample. The following writing measures were assessed by counting the number of: sentences; words per sentence; words per clause; words per T-units; T-units per sentence; words written in twenty minutes; and percentage of misspelled words (see Appendix G).

The three test results (pre-, post-, and delayed) for reading comprehension, language, and writing performance were analyzed to determine individual and group score changes during instructional time (pretest scores vs. posttest scores) and individual and group score changes during non-instructional time (posttest scores vs. delayed posttest scores).

The writing assessment developed by Chall and Jacobs (1983) was modified for use in the proposed study. The researchers' writing assessment consisted of ten minutes

Table 1.

Organizational Structure Rating.

Rating	Description
1 =	writer identifies only one common story element (e.g., setting or time or characters or problem/conflict or resolution)
2 =	writer identifies characters and problem/conflict, and deletes resolution
3 =	writer identifies characters, setting, time, problem/conflict, but delete resolution
4 =	writer identifies characters, setting, time, problem/conflict, and resolution in their writing product

Note. (For all measures "1" will always indicate the lowest rating.)

Table 2.

Content Rating.

Rating	Description
1 =	phrases written to tell story; details unrelated to story or lacking
2 =	sentence or sentences unconnected; no "story" is told (Chall & Jacobs, 1983, p. 621)
3 =	a "flat" list of details
4 =	an interesting, varied presentation; developed logically

Note. (For all measures "1" will always indicate the lowest rating.)

Table 3.

Form Rating.

Rating	Description
1 =	severe sentence structure problems (fragmentation) as well as severe grammatical and mechanical problems (Chall & Jacobs, 1983, p. 621)
2 =	sentence structure problems (i.e., run-ons) coupled with other grammatical and mechanical problems
3 =	a few isolated errors in mechanics (e.g., spelling, punctuation, and capitalization) and sentence structure; grammar is largely acceptable
4 =	no errors, or possibly one or two isolated errors

Note. (For all measures "1" will always indicate the lowest rating.)

Table 4.

Handwriting Rating.

Rating	Description
1 =	manuscript writing--illegible--reversals; letter formation is faulty with loops missing and letters not closed. Overall, impossible to discern written content.
2 =	manuscript writing--illegible, but with effort word can be identified
3 =	manuscript writing--sometimes difficult to read. Inconsistencies in letter formation, slant, or size. Inadequate spacing between letters and/or words
4 =	manuscript writing--(clear) (easy to read) letter formation, slant, and size good. Adequate spacing between letters and words

Note. (For all measures "1" will always indicate the lowest rating.)

of writing on a narrative and ten minutes on an expository stimulus. The population in this study consisted of thirty low socioeconomic status (SES) students in grades two, four, and six (who were retested a year later in grades three, five, and seven). Students were categorized as "above average" or "below average" readers based on initial recommendations of classroom teachers and available test scores. Writing samples were evaluated on twelve measures--six judgmental and six objective counts of traits.

The judgments were made of the total sample (an overall holistic rating of 1-4 and an overall holistic ranking of 1-30) or of such characteristics as organization (1-3), content (1-4), form (1-4), and handwriting (1-3). For all measures, "1" always indicated the lowest rating or ranking. (p. 618)

Objective counts were: number of words written in ten minutes; average T-unit length; average sentence length, words beyond the Spache vocabulary list of 1,000 common words; unfamiliar Dale vocabulary words beyond the 3,000 familiar to fourth graders; and percentage of misspelled words.

The results of Chall and Jacob's (1983) study revealed the following trends in writing:

1. A decelerative trend from grades five to seven on all measures except for handwriting and spelling.
2. Above average readers were generally better in writing than below average readers on most writing measures

after grade three; the above and below differed little at grade three.

3. Above and below average readers had similar patterns of writing development.

4. Neither above nor below average readers used many unfamiliar vocabulary words.

5. Neither above nor below average readers received high ratings on form (e.g., mechanics, syntax, and grammar).

6. Below average readers showed the same decelerative trends as did the total group; however, they showed a more marked deceleration in form: (e.g., syntax, grammar, and mechanics).

7. Above and below average pupils improved steadily in content ratings with successive grades.

Treatment

Treatment for Experimental Group

The treatment for the experimental group consisted of twenty minutes of daily instruction, for four consecutive weeks, in writing a summary of stories in the basal reader. To assist students in this mode of writing, they learned how to construct summary maps (Whisler, 1982; Coley, 1982; Gambrell & McLaughlin, 1985). (Instructions on mapping the story are provided in Appendix A). As students understood the procedure of constructing summary maps, they began

developing maps independent of the teacher's guidance. Students incorporated summary maps into well-planned summaries.

The Experimental Teacher:

1. engaged all children (high, average, and low reading ability students) in writing summaries daily. No additional writing instruction was given during the investigation period.

2. engaged students in constructing story maps to incorporate in their summaries. A brief description of this activity and an example are included in Appendix A.

3. met with Control Teacher at least once a week to confer about reading lesson plans. Monitoring the number of stories assigned to be read each week optimized the control of basal story order, quantity of stories read, and instructional time.

4. held students accountable for record-keeping. Students kept all summaries in a personal folder provided by the researcher. These were dated upon completion and collected by the researcher each Friday during the four week treatment period.

5. engaged all children in completing the assigned workbook pages except those which involved writing short answer responses to questions related to basal stories. All reading skill pages (e.g., word study skill, phonics, study skills, punctuation) were permissible.

6. discontinued the instructional tasks of summary writing of basal stories for a period of 4 weeks after the treatment.

A posttest was administered to assess reading comprehension, language skills, and writing performance. Regular reading instruction resumed for the next four weeks.

Students continued completing all assigned workbook pages with the exception of those which required writing short answers to questions related to basal stories. Questions were asked orally as opposed to being written. After a period of four weeks elapsed (given no treatment), a delayed posttest was administered to students. It assessed reading comprehension, language skills, and writing performance. Test results were distributed to teachers.

Treatment for Control Group

The treatment for the control group consisted of twenty minutes of daily instruction for four consecutive weeks in writing short answer responses to questions related to basal reader stories. Essentially, students in the control group carried out their daily classroom reading activities, without special treatment.

The Control Teacher:

1. engaged all children (high, average, and low reading ability students) in completing the assigned workbook pages which instructed students to 'write short answers' to questions about the given basal reader story.

No additional writing instruction was given during the investigation period.

2. met with the Experimental Teacher at least once a week to confer about reading lesson plans. Monitoring the number of stories assigned to be read each week optimized the control of basal story order, quantity of stories read, and instructional time.

3. held students accountable for record-keeping. Students kept only workbook pages which required short answers to questions about basal stories in a personal folder provided by the researcher. These were dated upon completion and collected at the end of treatment.

4. engaged all children in completing all assigned workbook pages (e.g., reading skill pages, word study skills, phonics, study skills, dictionary skills, punctuation, etc.).

5. discontinued the instructional tasks of writing short answers to questions in the workbook for a period of four weeks after the treatment. A posttest was administered to assess reading comprehension, language skills, and writing performance. Regular reading instruction resumed; students continued completing all assigned workbook pages with the exception of those which required writing short answers to questions related to basal stories. Questions were asked orally as opposed to being written.

After a period of four weeks had elapsed (given no treatment), a delayed posttest was administered to

students. It assessed reading comprehension, language skills, and writing performance. Test results were distributed.

Data Collection

The data for this study were collected by the researcher. For the comprehension and language pre-, post-, and delayed posttests, a numerical score was given for items answered correctly. After the number-correct score was determined, it was converted to a scale score for statistical treatment. For the writing assessment, two trained readers evaluated writing samples using a scale of 1-4. A score of '1' represented the lowest rating. The researcher determined the syntactic development mean for experimental and control groups by counting the number of words written during the testing periods and computing the means for each writing measure.

Statistical Treatment

Pre-, post-, and delayed posttest were administered to determine the comparative effectiveness of two methods of writing instructions. The criterion variables considered were comprehension scores, language scores, writing syntactic mean scores, and overall holistic ratings of students' writing ability.

The pre-treatment mean scores on comprehension, language, writing syntactic development, and overall writing ability were compared by using an analysis of variance

(ANOVA). The ANOVA was used to test the significance of the differences between the means of the control and experimental population at the .05 level. Pre-, post-, and delayed posttest score changes were compared by using an analysis of variance and covariance with repeated measures to test the significance of the difference between the means of the control and experimental population after treatment and retention of treatment periods.

Summary

Chapter three described the sample used in this study. Forty-two second graders enrolled at Monroe Elementary School, Casey, Illinois participated in this study. This chapter also described the research design, as well as the treatment and the instruments employed therein. Data collection procedures as well as the statistical treatment of such data were discussed.

Chapter 4

RESULTS OF THE STUDY

The results of this study are presented in this chapter. The results were based on the comprehension test scores and the overall writing performance of students. The comprehension test results are presented separately. For the purpose of compiling results for the writing measure, language mechanics scores, language expression scores, and overall holistic scores have been grouped together. Since the writing syntactic development mean was based on quantity of words as opposed to quality of content, results are presented separately. All tests of significance have been conducted at the $p < .05$ level.

Hypothesis #1

The first hypothesis to be tested read as follows:

When tested on their ability to comprehend passages, students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different from those students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of the experimental and control groups on the first dependent variable--comprehension. As seen in Table 5, no significant

difference was found between the experimental and control groups in comprehension. Therefore, the first hypothesis was not rejected.

Table 5

Analysis of Variance and Covariance With Repeated Measures for Comprehension Test Scores by Groups and Ability

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Groups	11.42	1	11.42	.43
Ability	1669.34	2	834.67	*31.71
Interaction (G x A)	8.92	2	4.46	.17
Error	947.57	36	26.32	

Note.

* $p < .01$.

Hypothesis #2

The second hypothesis to be tested read as follows:

When tested on their ability to comprehend passages, the high reading ability students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different from the high reading ability students in the control group who have not had such instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of these two groups. As shown in Table 5, in performance on the first dependent variable--comprehension, there was no significant difference between groups. Therefore, the second hypothesis was not rejected.

Hypothesis #3

The third hypothesis to be tested read as follows:

When tested on their ability to comprehend passages, average reading ability students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different from the average reading ability students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of these two groups. As shown in Table 5, with regard to performance on the first dependent variable--comprehension, there was no significant interaction between groups and ability. Therefore, the third hypothesis was not rejected.

Hypothesis #4

The fourth hypothesis to be tested read as follows:

When tested on their ability to comprehend passages, the low reading ability students in the experimental group who have been taught to write story summaries will demonstrate comprehension levels not significantly different

from the low reading ability students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of these two groups. As indicated by the results in Table 5, with regard to comprehension, the low reading ability students in the experimental group and similar students in the control group did not differ significantly. Therefore, the fourth hypothesis was not rejected.

Hypothesis #5

The fifth hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from those students in the control group who have not had such writing instruction.

There was no significant difference in the overall holistic rating of writing skills of the experimental and the control groups. Therefore, the fifth hypothesis was not rejected.

However, an analysis of variance and covariance with repeated measures was used to compare the mean scores of the experimental and control groups on one aspect of the second dependent variable--language mechanics. There was a significant difference, $F(1, 36) = 5.47, p < .05$, between the experimental and control group in language mechanics (see Tables 6 and 7).

Table 6.

Means and Standard Deviations of Language Mechanics Test Scores.

Trials	Groups					
	Experimental			Control		
	Ability					
	Low	Average	High	Low	Average	High
Pre-test \bar{X}	8.75	10.40	17.14	6.33	11.67	14.00
S	.96	3.75	2.27	3.21	3.34	4.38
Posttest \bar{X}	12.50	12.70	18.43	7.33	11.50	14.17
S	4.43	4.50	.79	4.73	3.53	4.31
Delayed						
Posttest \bar{X}	12.50	14.70	19.00	7.33	14.08	16.50
S	3.32	4.81	1.15	1.15	4.46	3.73

Note. Maximum score = 20.

Table 7.

Analysis of Variance and Covariance With Repeated Measures
for Language Mechanics Test Scores by Groups and Ability

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Groups	166.78	1	166.78	*5.47
Ability	805.33	2	402.66	**13.21
Interaction (G x A)	95.48	2	47.74	1.57
Error	1097.22	36	30.49	

Note.

* $p < .05$. ** $p < .01$.

The experimental group made more gains in language mechanics both at post- and delayed posttest trials as illustrated in Figure 1.

LANGUAGE MECHANICS, MEAN SCORES

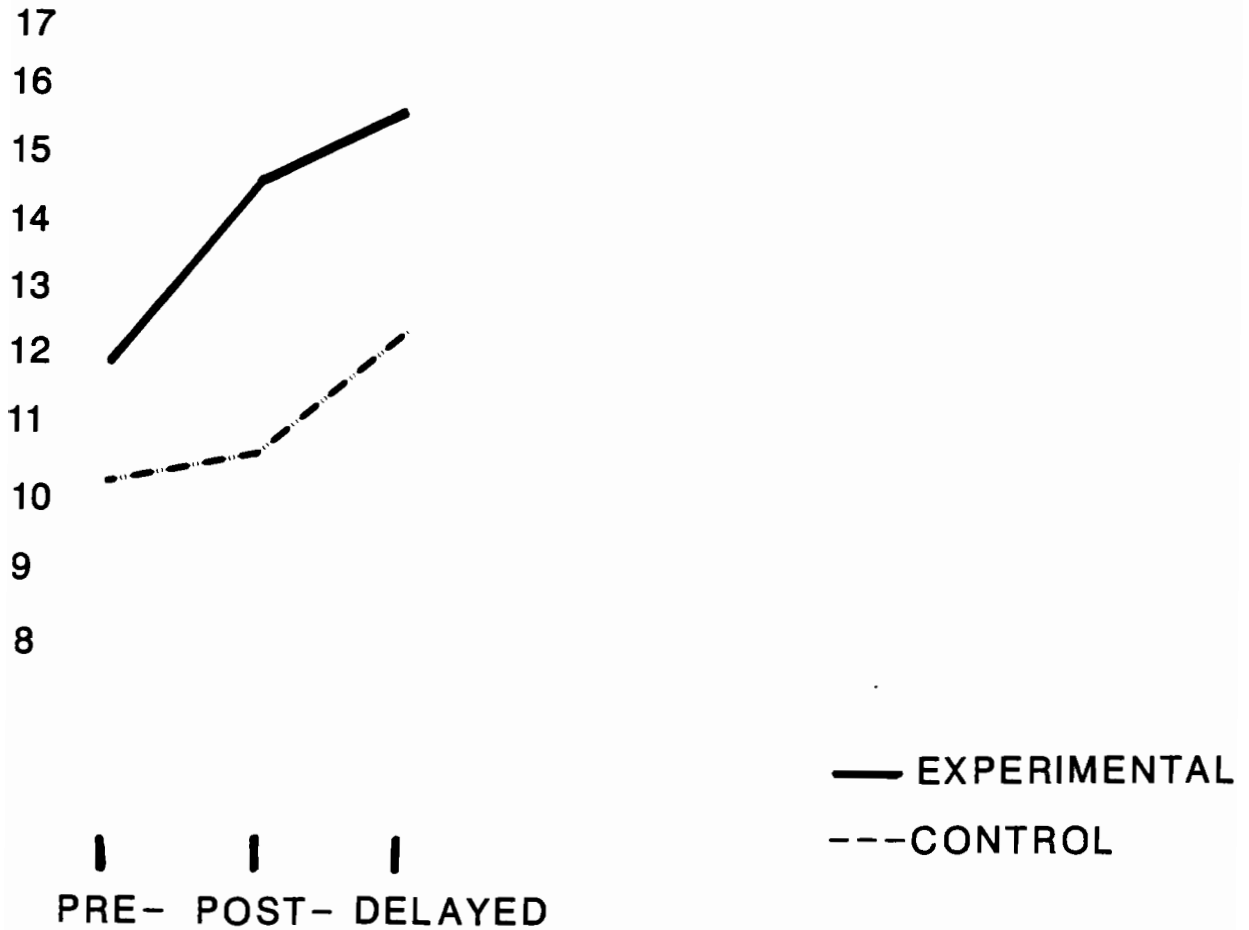


Figure 1. Language mechanics mean scores by groups over trial periods.

Although there was no significant difference in performance between the experimental and the control groups in language expression, the mean scores for the experimental group were higher than the mean scores for the control group (see Table 8).

Table 8.

Means and Standard Deviations of Language Expression Test Scores

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	20.25	(4)	16.33	(3)
	S	3.30		4.16	
Average	\bar{X}	24.20	(10)	23.17	(12)
	S	.63		2.08	
High	\bar{X}	24.71	(7)	24.50	(6)
	S	.49		.55	

Note. Maximum score = 25.

^aNumbers in parentheses indicate the number of students in that ability group.

It might be noted, however, that although the difference between these two groups was not statistically significant, the difference that did exist favored the experimental group in the overall holistic rating of writing skills (see Table 9).

Table 9.

Means and Standard Deviations of Holistic Ratings for
Writing Skills.

Ability		Groups			
		Experimental		Control	
		\bar{X}	n^a	\bar{X}	n^a
Low	\bar{X}	2.25	(4)	1.67	(3)
	S	.50		.58	
Average	\bar{X}	2.30	(10)	2.50	(12)
	S	.67		.52	
High	\bar{X}	3.14	(7)	2.67	(6)
	S	.69		.52	

Note. Maximum score = 4.

^aNumbers in parentheses indicate the number of students in that ability group.

Hypothesis #6

The sixth hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, the high reading ability students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from the high reading ability students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean writing scores of the two groups. No significant difference was found between the high reading ability students in the experimental group and similar students in the control group in language mechanics, language expression, and overall holistic rating of writing skills. Therefore, the sixth hypothesis was not rejected.

Hypothesis #7

The seventh hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, the average reading ability students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from the high reading ability students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean writing scores of the

two groups. No significant difference was found between the average reading ability students in the experimental group and similar students in the control group, in language mechanics, language expression, and overall holistic rating of writing skills. Therefore, the seventh hypothesis was not rejected.

Hypothesis #8

The eighth hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, the low reading ability students in the experimental group who have been taught to write story summaries will demonstrate writing skills not significantly different from the low reading ability students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean writing scores of the two groups. No significant difference was found between the low reading ability students in the experimental group and similar students in the control group, in language mechanics, language expression, and overall holistic rating of writing skills. Therefore, the eighth hypothesis was not rejected.

It might be noted, however, that a highly significant difference, $F(2, 36) = 13.21, p < .001$, was found between ability groups in their writing skills (refer to Table 7, p. 53). All ability groups increased in language mechanics in a linear fashion (see Figure 2). Gains were maintained

MEAN LANGUAGE MECHANICS, MEAN SCORES

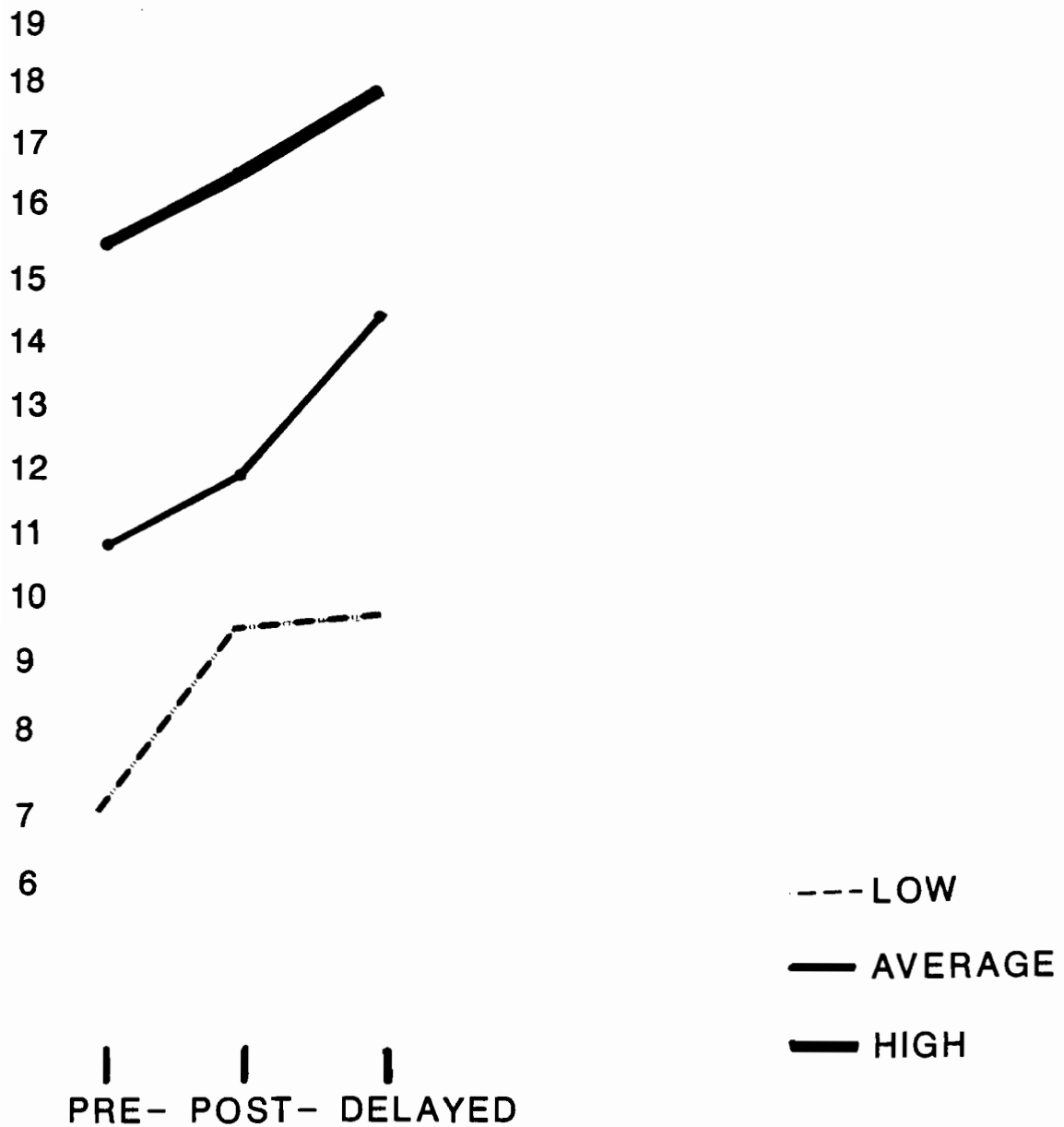


Figure 2. Language mechanics mean scores by ability over trial periods.

throughout trial periods for the high and the average reading ability groups. The low reading ability groups appeared to level off in gains between posttest and delayed posttest periods. When one considers the effect of writing instruction for the experimental group, as shown in Figure 3, similar gains were made by students during the instructional period (pretest to posttest). This writing instruction appeared to have the greatest effect on the low reading ability students. When writing instruction was discontinued, however, increments in language mechanics were not apparent.

Hypothesis #9

The ninth hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, students in the experimental group who have been taught to write story summaries will produce stories not significantly different from those students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of the experimental and control groups on the third dependent variable--writing syntactic development. The following writing measures were considered in compiling results: the number of (1) sentences written; (2) words per sentence; (3) words per clause; (4) words per T-unit; (5) T-units per sentence; (6) total words written in twenty minutes; and (7) percentage of misspelled words. Each measure was

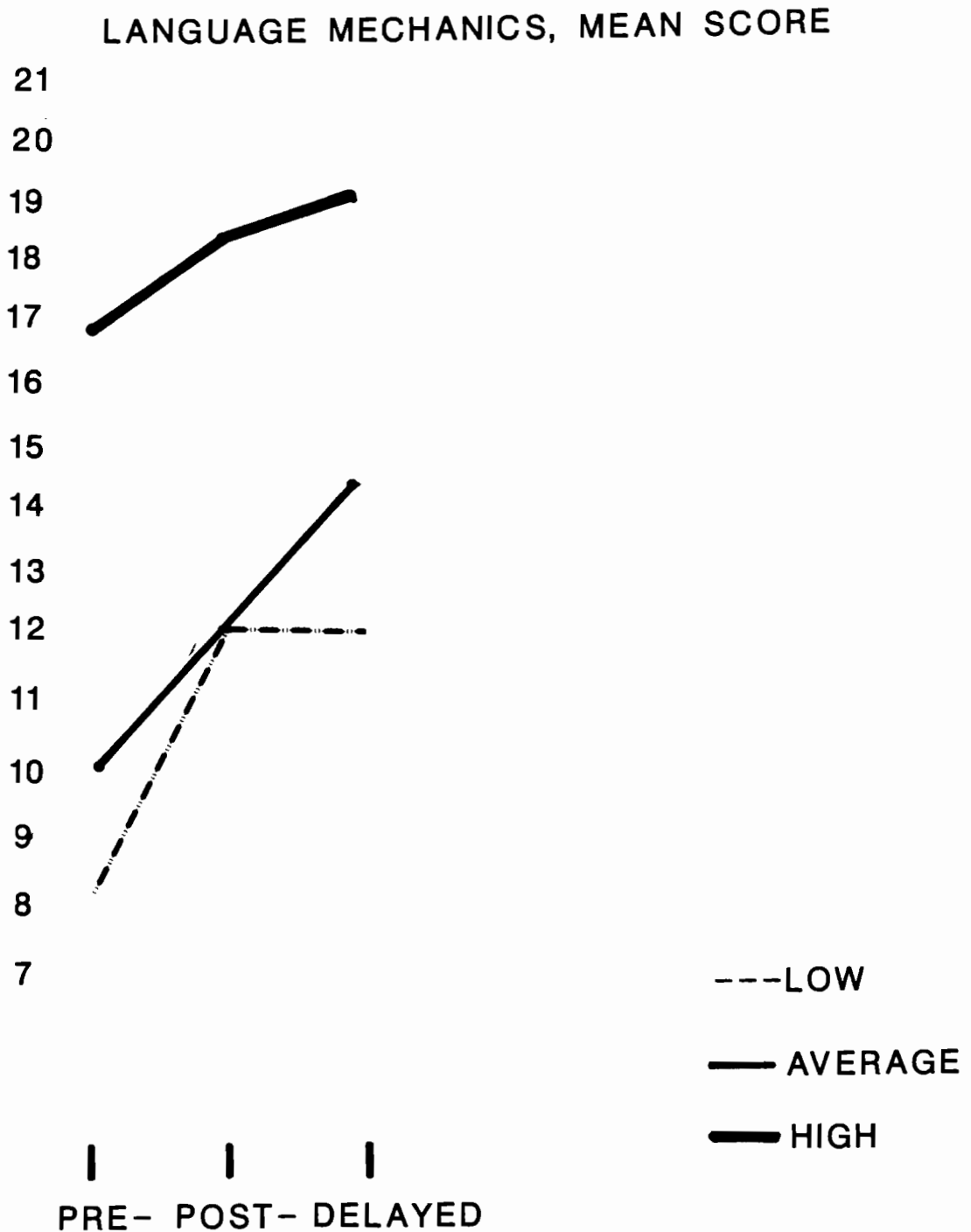


Figure 3. Language mechanics mean scores for experimental group by ability over trial periods.

examined for significance. No significant differences were found between the experimental and control groups in the number of words per clause, written words per T-unit, total words written, and the percentage of misspelled words. Therefore, the ninth hypothesis was not rejected for these writing measures.

The means and standard deviations of the total number of sentences written by the experimental and control groups are shown in Table 10.

Table 10.

Means and Standard Deviations of Total Number of Sentences Written.

Trials	Groups					
	Experimental			Control		
	Ability					
	Low	Average	High	Low	Average	High
Posttest \bar{X}	2.25	4.90	6.0	1.33	2.33	3.67
S	1.50	1.45	2.0	.58	1.56	2.66
Delayed						
Posttest \bar{X}	3.00	5.20	5.29	1.00	4.50	3.00
S	1.15	2.04	1.38	.00	2.65	3.03

As shown in Table 11, a significant difference, $F(1, 36) = 9.60$, $p < .01$, was found between the experimental and control groups. The experimental group wrote significantly more sentences than the control group. Figure 4 illustrates the magnitude of significance. Therefore, the ninth hypothesis was rejected for this writing measure.

Table 11.

Analysis of Variance and Covariance With Repeated Measures
for the Total Number of Sentences Written.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Groups	54.22	1	54.22	*9.60
Ability	68.81	2	34.41	*6.09
Interaction (G x A)	2.38	2	1.19	.21
Error	203.37	36	5.65	

Note.

* $p < .01$.

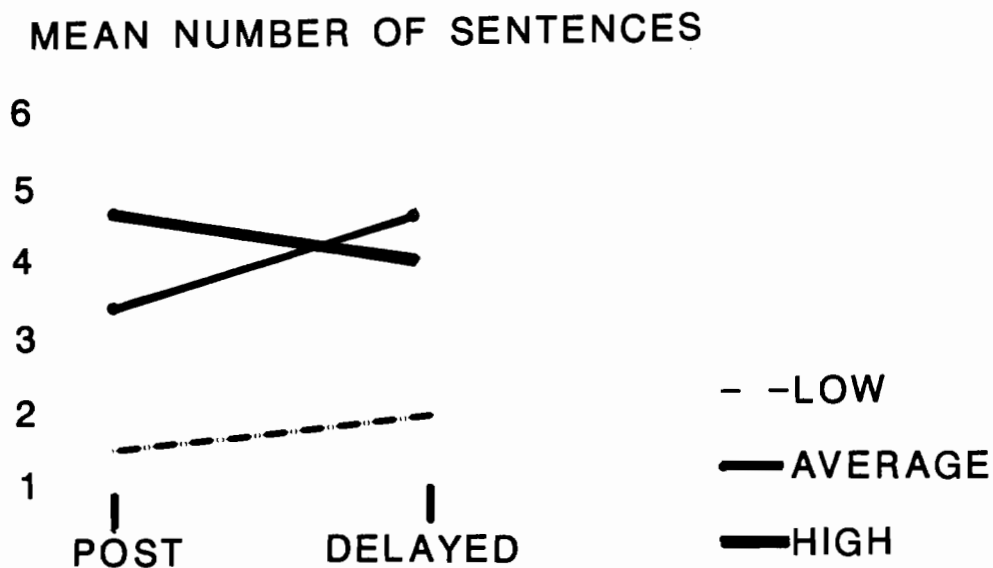


Figure 4. Total number of sentences written.

A significant difference, $F(1, 36) = 15.69, p < .001$, in the negative direction was found between the experimental and control groups when the number of words per sentence was considered. The control group wrote significantly more words per sentence (see Tables 12 and 13).

Table 12.

Means and Standard Deviations of Words Per Sentence.

Trials	Groups					
	Experimental			Control		
	Ability					
	Low	Average	High	Low	Average	High
Posttest \bar{X}	20.75	7.85	7.9	36.67	22.55	17.76
S	15.95	2.46	2.09	27.79	20.34	11.76
Delayed						
Posttest \bar{X}	15.75	7.89	8.55	34.67	17.57	31.49
S	6.45	3.84	2.63	10.02	14.79	17.54

Table 13.

Analysis of Variance and Covariance With Repeated Measures
for the Number of Words Per Sentence.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Groups	3932.67	1	3932.67	**15.69
Ability	1768.53	2	884.27	*3.53
Interaction (G x A)	109.99	2	54.99	
Error	9025.87	36	250.72	

Note.

* $p < .05$. ** $p < .01$.

The large 'means' in Figure 5 may suggest that the control group used an extensive number of article words, nonsense words, and/or repetitive words. One might argue the student's ability to construct a sentence. Because a significant difference was found in favor of the control group, the ninth hypothesis was rejected.

A significant difference, $F(1, 36) = 24.85$, $p < .001$, in the negative direction was found between the experimental and control groups when the number of T-units per sentence was considered. The control group wrote significantly more T-units per sentence (see Tables 14 and 15).

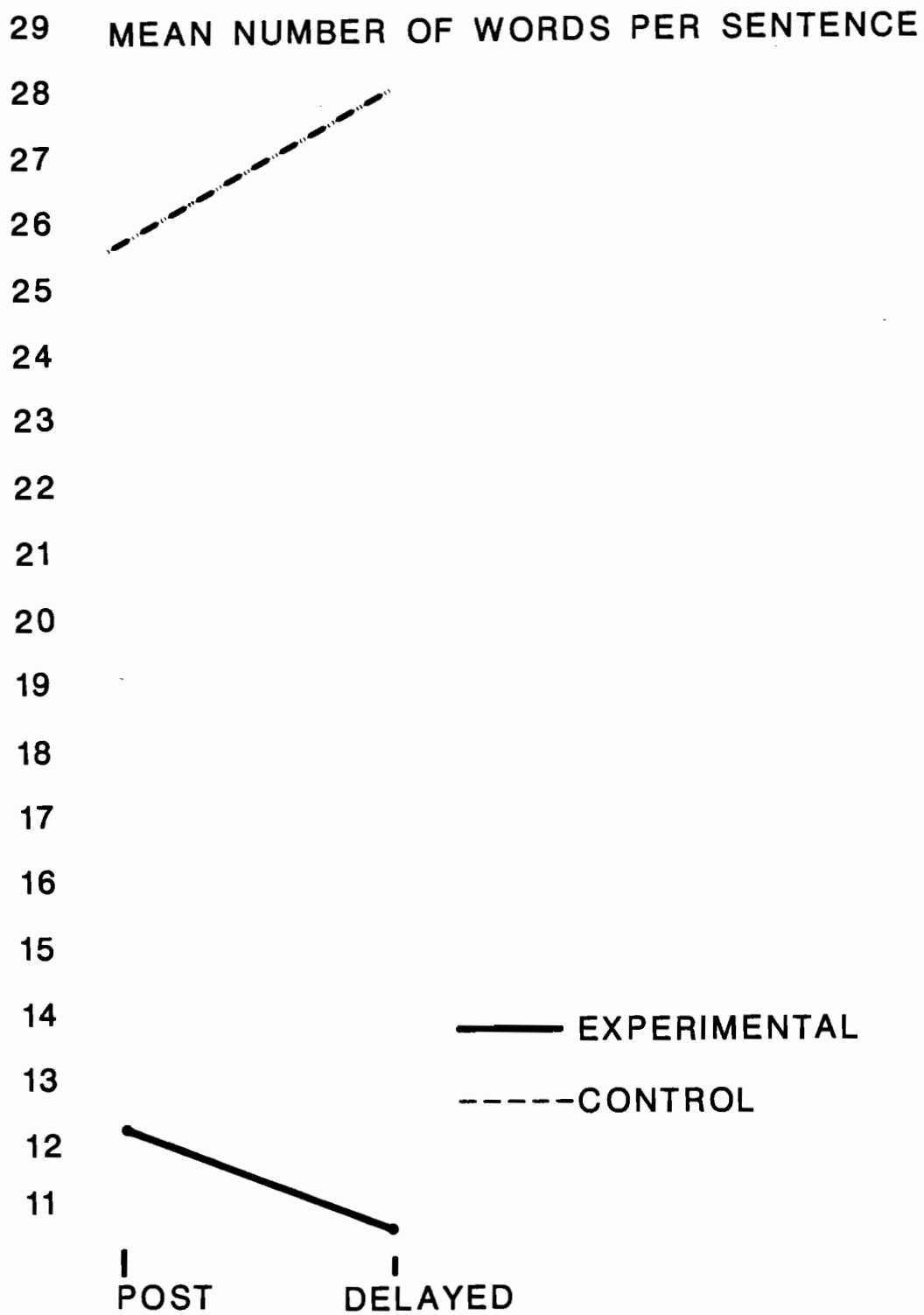


Figure 5. Number of words per sentence by groups.

Table 14.

Means and Standard Deviations of T-units Per Sentence.

Trials	Groups					
	Experimental			Control		
	Ability					
	Low	Average	High	Low	Average	High
Posttest \bar{X}	3.15	1.28	1.15	6.83	3.47	3.13
S	2.29	.27	.28	2.93	2.96	1.97
Delayed						
Posttest \bar{X}	2.44	1.33	1.44	5.67	2.55	4.56
S	.72	.62	.43	1.53	1.80	2.34

Table 15.

Analysis of Variance and Covariance With Repeated Measures
for T-units Per Sentence.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Groups	110.50	1	110.50	*24.85
Ability	58.65	2	29.33	*6.59
Interaction (G x A)	8.82	2	4.41	.99
Error	160.09	36	4.45	

Note.

* $p < .01$.

The 'means' in Figure 6 may suggest that the control group wrote only one sentence and consequently obtained large ratio-means of (T-units per sentence). This was supported by data for the significant difference between experimental and control groups in the number of sentences written. Therefore, the ninth hypothesis was rejected.

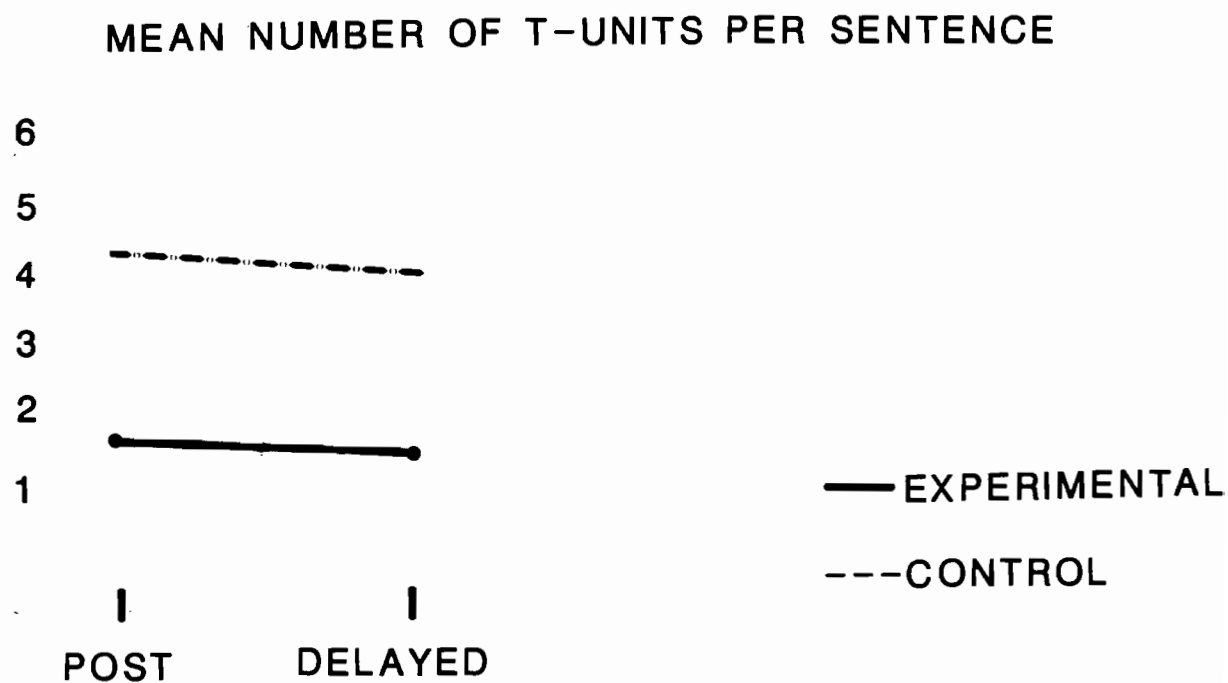


Figure 6. T-units per sentence by groups.

Hypothesis #10

The tenth hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, the high reading ability students in the experimental group who have been taught to write story summaries will produce stories not significantly different from the high reading ability students in the control groups who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of the high reading ability students in both groups. No significant difference was found between the high reading ability students in the experimental group and similar students in the control group for all writing measures. Therefore, the tenth hypothesis was not rejected.

Hypothesis #11

The eleventh hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, the average reading ability students in the experimental group who have been taught to write story summaries will produce stories not significantly different from the average reading ability students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of the average reading ability students in both groups. There was no significant difference between the average reading ability

students in the experimental group and similar students in the control group for all writing measures. Therefore, the eleventh hypothesis was not rejected.

Hypothesis #12

The twelfth hypothesis to be tested read as follows:

When tested on their ability to write about a wordless picture book story, low reading ability students in the experimental group who have been taught to write story summaries will produce stories not significantly different from the low reading ability students in the control group who have not had such writing instruction.

An analysis of variance and covariance with repeated measures was used to compare the mean scores of the low reading ability students in both groups. No significant difference was found between the low reading ability students in the experimental group and similar students in the control group for all writing measures. Therefore, the twelfth hypothesis was not rejected.

It might be noted, however, that although no significant difference was found between ability groups within the experimental group and ability groups within the control group, a significant difference between ability groups in general was found for various writing measures. A significant difference was found between ability groups in the number of sentences written.

The high reading ability students wrote significantly more sentences, $F(2, 36) = 6.09, p < .01$, than the low and

average reading ability students (refer to Tables 10 and 11, pp. 63 and 64). The low reading ability students wrote significantly more words per sentence, $F(2, 36) = 3.53$, $p < .05$, than the average and high reading ability students (refer to Tables 12 and 13, pp. 66 and 67). Figure 7 shows the number of words written per sentence by low, average, and high reading ability students. The graphic illustration suggests that the more trials given, the fewer words per sentence were written by the low and average reading ability students. This was possibly due to an increase in the number of sentences constructed, thus, changing the ratio of words per sentence. The increase in the number of words per sentence by high reading ability students might suggest the combination of an increase in word descriptors and/or elaborative language or conversely, indicate the inability of high reading ability students to construct sentences and, thus, affecting the ratio of words written per sentence. There was also a significant difference found between ability groups in the number of T-units written per sentence. The low reading ability students wrote significantly more T-units per sentence $F(2, 36) = 6.59$, $p < .01$, than the average and high reading ability students (refer to Tables 14 and 15, pp. 69 and 70).

MEAN NUMBER OF WORDS PER SENTENCE

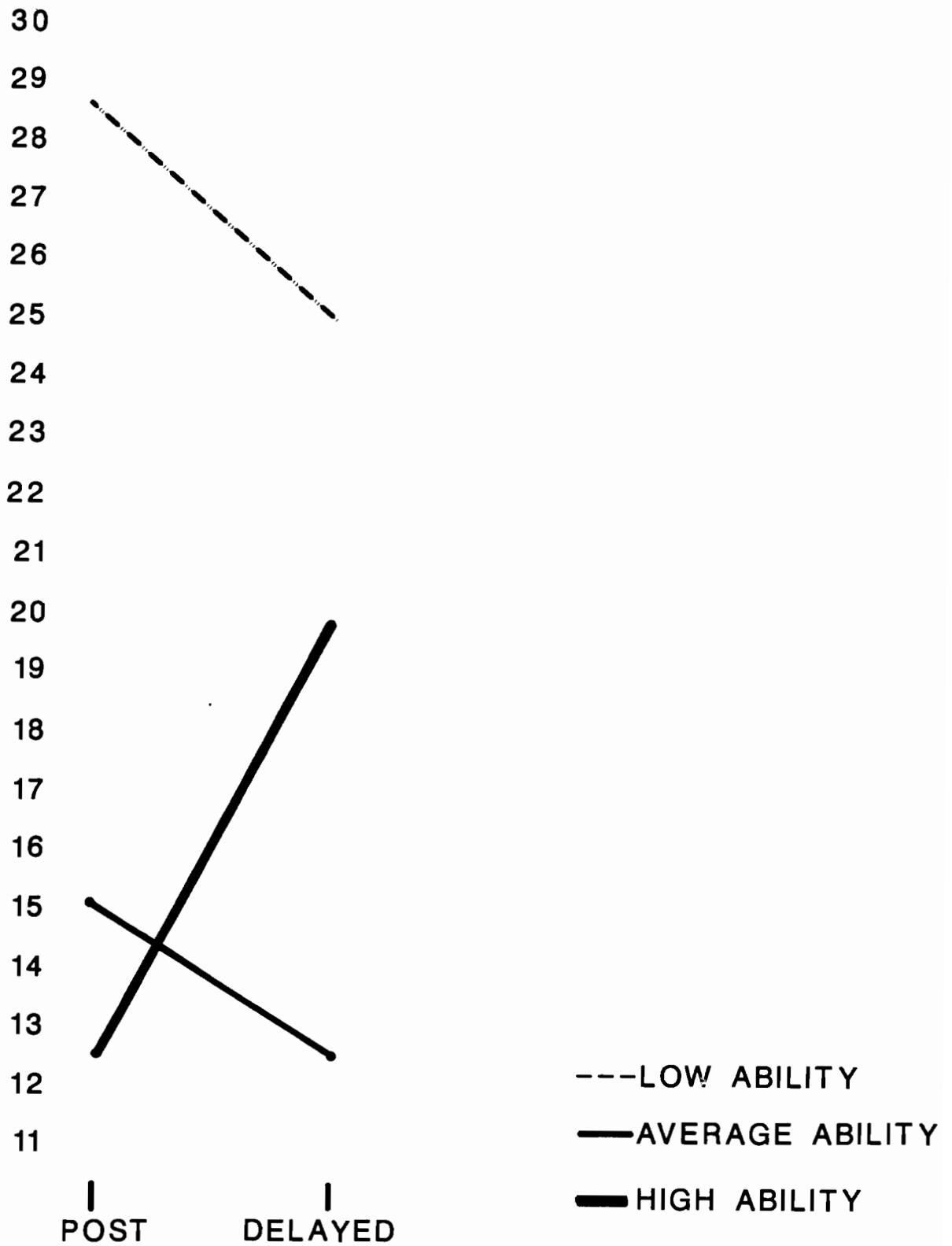


Figure 7. Number of words per sentence by ability.

It might be noted that the low and average reading ability students wrote fewer T-units per sentence when given more trials (see Figure 8). The high reading ability student wrote significantly more words in twenty minutes, $F(2, 36) = 3.35, p < .05$, than the average and low reading ability students (see Tables 16 and 17).

MEAN NUMBER OF T-UNITS PER SENTENCE

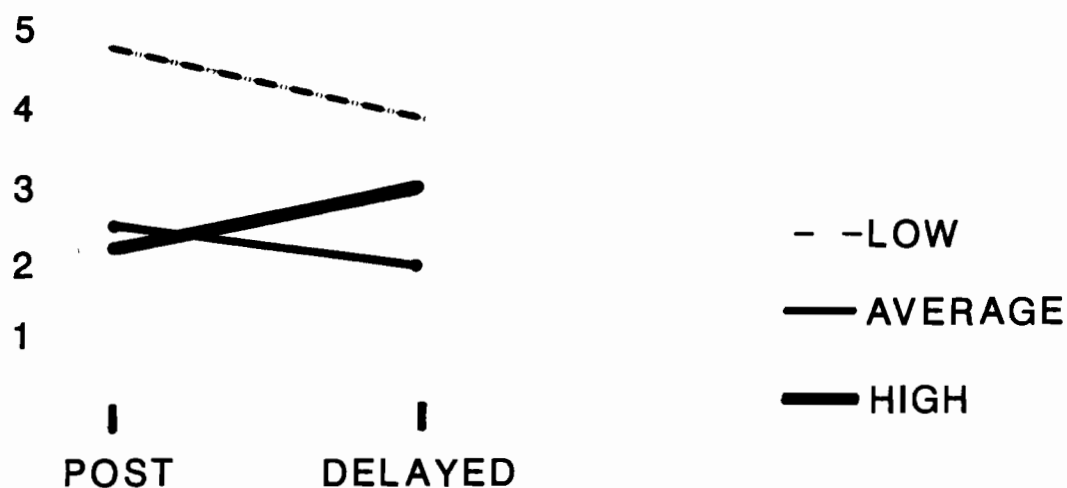


Figure 8. T-units per sentence by ability.

Table 16.

Means and Standard Deviations of Total Words Written in
20 Minutes.

Trials	Groups					
	Experimental			Control		
	Ability					
	Low	Average	High	Low	Average	High
Posttest \bar{X}	30.75	36.30	44.57	41.67	34.25	46.50
S	7.63	9.60	8.12	22.85	17.70	12.63
Delayed						
Posttest \bar{X}	42.00	36.70	44.57	34.67	50.25	59.50
S	7.75	9.73	15.98	10.02	16.03	12.53

Table 17.

Analysis of Variance and Covariance With Repeated Measures
for Total Words Written by Groups and Ability.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Groups	473.98	1	473.98	1.77
Ability	1797.32	2	898.66	*3.35
Interaction (G x A)	99.41	2	49.70	.19
Error	9652.64	36	268.13	

Note.

* $p < .05$.

When trials (posttest and delayed posttest) were considered as a source of variation, a significant difference was found for two writing measures. Significantly more words were written during the delayed posttest trial, $F(1, 36) = 5.5$, $p < .05$, (refer to Tables 16-18, pp. 77-79). Significantly fewer words were misspelled by students during the delayed posttest trial, $F(1, 36) = 28.76$, $p < .001$, (see Tables 19 and 20). These results suggest that given more trials, students write longer stories with fewer misspelled words.

Table 18.

Analysis of Variance and Covariance With Repeated Measures
for Total Words Written by Trials.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Trials	526.08	1	526.08	*5.5
Interaction (T x G)	49.77	1	49.77	.52
Interaction (T x A)	96.55	2	48.27	.51
Interaction (T x G x A)	780.89	2	390.45	*4.12
Error	3414.58	36	94.85	

Note.

*p<.05.

Table 19.

Means and Standard Deviations for Percentage of Misspelled Words.

Trials	Groups					
	Experimental			Control		
	Ability					
	Low	Average	High	Low	Average	High
Posttest \bar{X}	29.75	17.40	9.28	33.67	20.67	11.17
S	6.70	4.43	10.86	15.95	11.42	6.37
Delayed						
Posttest \bar{X}	16.50	11.50	6.57	19.33	15.08	11.50
S	7.14	8.45	6.99	5.77	5.40	8.24

Table 20.

Analysis of Variance and Covariance With Repeated Measures
for Percentage of Misspelled Words.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Trials	798.14	1	798.141	*28.76
Interaction (T x G)	2.42	1	2.42	.09
Interaction (T x A)	355.86	2	177.93	*6.41
Interaction (T x G x A)	11.74	2	5.87	.21
Error	998.99	36	27.75	

Note.

* $p < .01$.

Discussion

One might question why there were not more apparent significant differences in this study. When the first dependent variable--comprehension was considered, no significant differences were found. It is conjectured that the absence of a statistically significant difference was due to limited instructional time. Four weeks of summary writing instruction may have been too minimal to affect some students. Despite the absence of a statistically

significant difference between the experimental and control groups, the mean scores for the experimental group after summary writing instruction were higher than the mean scores for the control group in comprehension (see Table 21). The greatest comprehension gains were made during pre-test to posttest trials or the instructional period (see Table 22). The writing summary instruction, therefore, warrants consideration.

Table 21.

Means and Standard Deviations of Comprehension Test Scores.

Ability		Groups			
		Experimental \bar{n}^a		Control \bar{n}^a	
Low	\bar{X}	15.50	(4)	12.67	(3)
	S	4.12		5.03	
Average	\bar{X}	20.40	(10)	18.58	(12)
	S	3.89		5.21	
High	\bar{X}	23.14	(7)	21.50	(6)
	S	1.68		2.88	

Note. Maximum score = 25.

^aNumbers in parentheses indicate the number of students in that ability group.

Table 22.

Analysis of Variance and Covariance With Repeated Measures
for Comprehension Test Scores by Groups, Ability and Trials

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Trials	290.67	2	145.34	**24.92
Interaction (T x G)	25.42	2	12.71	2.18
Interaction (T x A)	60.34	4	15.09	*2.59
Interaction (T x G x A)	26.10	4	6.53	1.12
Error	419.97	72	5.83	

Note.

* $p < .05$. ** $p < .01$.

Figure 9 illustrates the significant interaction, $F(4, 72) = 2.59$, $p < .05$, between ability groups and trial periods. The low and average ability groups increased in comprehension in a linear fashion between trial periods. The high ability groups made the same progress from pre- to posttest trials. These students made no further progress after the posttest trial, possibly due to a ceiling effect or the failure of the test to detect discernible differences among the high reading ability students.

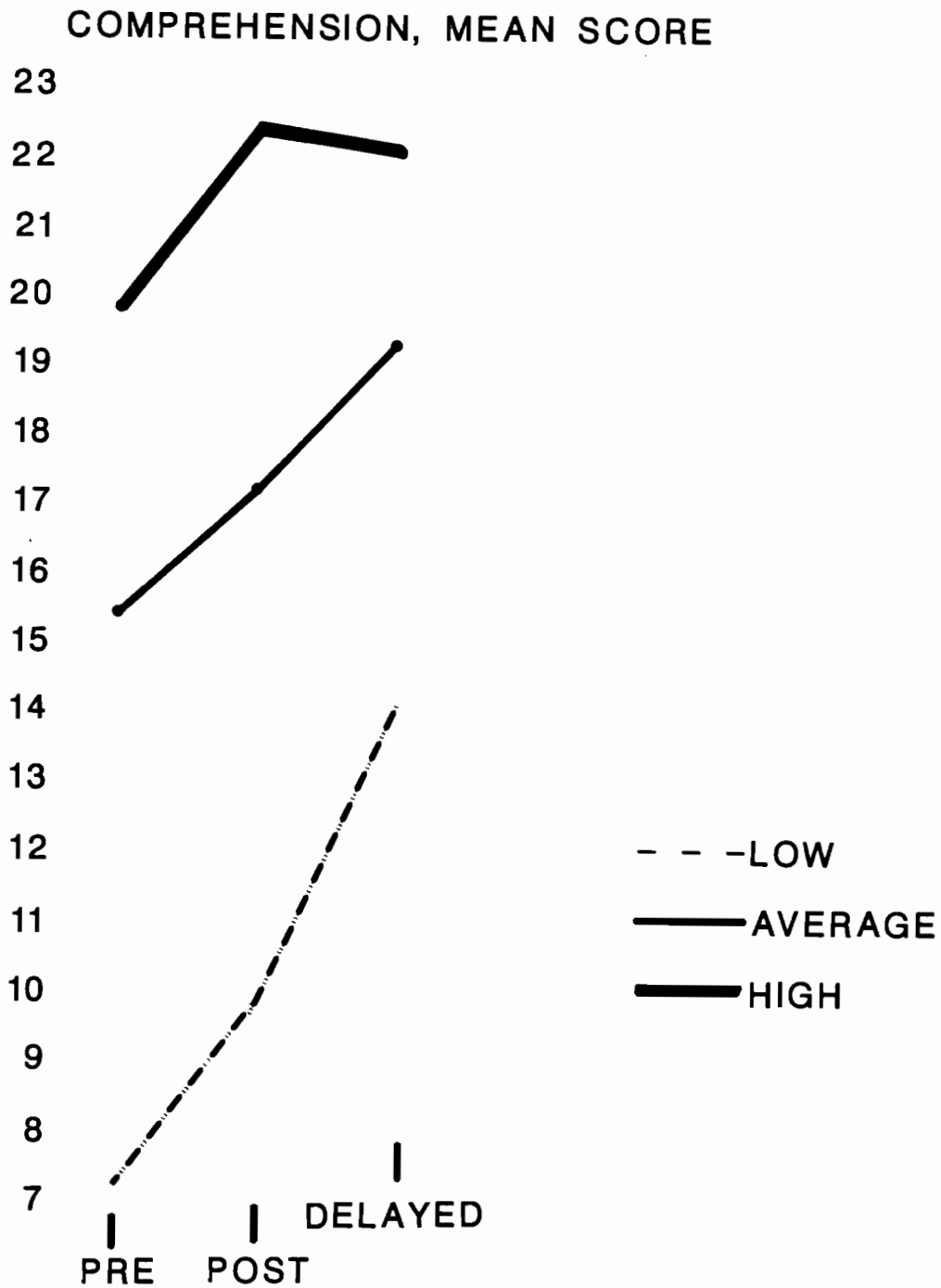


Figure 9. Comprehension mean scores and the interaction between ability groups and trial periods.

Significant differences were found when the second dependent variable--writing, was considered. It might be noted, however, that the writing assessment was greatly affected by the student's ability to construct sentences. Some students demonstrated a lack of basic language mechanics skills, specifically, the use of periods. When punctuation was deleted, the content of the story may have been obscured. Knowledge of both 'sentence construction' and 'language mechanics' were necessary skills for writing well developed stories as assessed by the readers.

The writing stimuli, wordless picture book stories, may have affected the writing performance of the students. It was apparent in Tables 16 and 17, pp. 77 and 78, that students wrote longer stories during the pre-test trial when no instruction had been given. Thus, the student's interest must be considered a factor which may influence the writing performance of students.

Summary

Chapter four has presented the hypotheses of this study as well as the statistical data used in testing those hypotheses. None of the hypotheses was rejected; however, component parts proved significant when the dependent writing variable was considered. A significant difference was found between the experimental and control groups in language mechanics and the number of sentences written, words per sentence written, and T-units per sentence written. All tests of significance were conducted at the $p < .05$ level.

It might be noted that the mean scores of the students in the experimental groups were higher in all cases than those of the control groups when comprehension, writing skills, and syntactic development means were considered.

Chapter 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS OF THE STUDY

Summary of the Study

Statement of the Problem

The problem of this study was to investigate the influence of writing instruction on the reading comprehension and the syntactic writing development of second-grade students. Research has shown that instruction in writing summaries can increase reading comprehension and improve writing skills significantly. Thus, this study attempted to determine the effect of writing instruction on reading comprehension and syntactic writing development.

Statement of the Procedures

This study employed two second-grade classrooms. Classrooms were randomly assigned to experimental or control groups. Within each group, subjects were divided into low, average, and high reading ability subgroups. Reading ability was determined according to scores received in the Comprehensive Tests of Basic Skills (CTBS) which was administered prior to treatment. The experimental treatment consisted of instruction in writing basal story summaries while the control treatment consisted of writing short answers to questions provided in the basal reading workbook.

All students received four weeks of writing instruction, prior to the posttest, which required them to write a story and answer multiple choice items in reading comprehension, language mechanics, and language expression. An analysis of variance and covariance with repeated measures was used to compare mean scores of the experimental and control groups of low, average, and high reading ability students.

Hypotheses

Twelve hypotheses were developed to: (1) compare the scores of the experimental and control groups on reading comprehension, writing skills, and syntactic writing development; and (2) to compare the scores of low, average, and high reading ability students in the experimental and control groups on the above dependent measures.

Conclusions

No significant differences were found when the dependent variable--reading comprehension was considered. However, statistically significant differences were found between the experimental and control group's post- and delayed posttest writing scores. Specifically, there were significant differences found in language mechanic scores, the number of sentences written, the number of words per sentence, and the number of T-units per sentence.

It was noted in the previous chapter that the significant difference found in the number of words per sentence and the number of T-units per sentence, were in the negative direction, thus, favoring the control treatment.

An examination of the writings of students in the control group revealed their tendency to put a large number of and's between T-units and/or run T-units together without any punctuation between them. It may be conjectured that these students want to form larger constituents but have not acquired the syntactic means to develop mature sentences. Thus, the tendency to write significantly more words per sentence, and more T-units per sentence was manifested in their writing.

Although no additional tests of differences between experimental and control groups post- and delayed posttest scores were found to be statistically significant, it is important to point out that the mean scores of the experimental group tended to be consistently higher than the control group when comprehension, language expression, overall holistic rating, and most of the writing measures for the syntactic development mean were considered. Thus, a tendency was established which indicated the desirable effect of summary writing instruction.

Implications

The implications of this study are three: (1) that writing basal story summaries may be regarded as a viable alternative to the traditional basal workbook which has story review questions and short answer practice exercises, (2) that writing basal story summaries enhance the overall writing performance of students, and (3) that more extensive research in this area is needed.

First, it appears that summary writing instruction warrants consideration as a story review procedure.

Teachers continue to grope for instructional techniques to enhance comprehension and writing performance. Certainly the story map procedure adds variety to writing story summaries and assists students in pre-reading and/or post-reading organization. The story map serves as a prewriting design as well. Students can use their maps as a graphic outline from which to write their first drafts of a story. The appeal of the map for students is that it helps them see how main ideas are related, thus, assisting them in monitoring their own comprehension. While comprehension is improved, writing is also developed.

Second, as evidenced in this study, summary writing enhances the overall writing performance of students. The more experiences afforded to students in writing, the greater the increments in the number of words written and improvement in overall writing performance. Story maps provide the reluctant reader and writer an opportunity to see how ideas are linked together. Once he sees how ideas are organized, then writing may become an easier task. He not only writes lengthier stories, but does so with fewer misspelled words.

Third, this study implied the need for more extensive research into the effect of summary writing instruction on reading comprehension. Specifically, one can conclude that there is a need to provide more than four weeks of treatment

for experimental and control group instruction. Because findings of this study indicated a tendency for the experimental group to obtain higher mean scores in comprehension, in writing skills, and syntactic development, it seems reasonable to predict that a whole semester devoted to such treatment would produce statistically significant results.

Suggestions for Further Research

Several areas for further investigation are suggested by this study. First, a need exists to replicate this study with treatment employed over a longer period of time. The four weeks of instruction used for this research may have been too minimal to affect some students. Greater time allotments may be necessary for children to assimilate the story summary approach successfully.

The novelty of the story map approach to produce story summaries may have interfered or interrupted some children's normal comprehension processes. The degree or magnitude of this interference should be examined. Therefore, one might benefit from more research in this area. Second, a need exists to replicate this study using writing stimuli which prove comparable to children's interests. As evidenced by the number of words written on the pre- and posttest trials, all ability students consistently wrote lengthier stories about 'Tooth Troubles' (pretest) and shorter stories about 'The Birthday Cake' (posttest). Thus, the external variable, interest, may have

influenced test results. Story content should, therefore, be considered prior to replication. Third, a need exists to investigate further the different influences writing instruction has on the reading comprehension of better and poorer readers. This study showed that such instruction affects these groups differently but provided no clear explanation of why that may be the case or what those differences are.

Summary

Chapter five presented a brief summary of the problem and of the procedures employed in the study. It presented the conclusions drawn from the data collected and discussed the implications for teaching basal summary writing.

Some areas for further investigation were suggested. Specifically, the question of the influence of summary writing on reading comprehension was emphasized. The main finding of the study reveals the tendency toward a beneficial effect on reading comprehension and writing performance derived from writing instruction.

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APPENDIXES

APPENDIX A

EXPLANATION OF THE STORY MAP

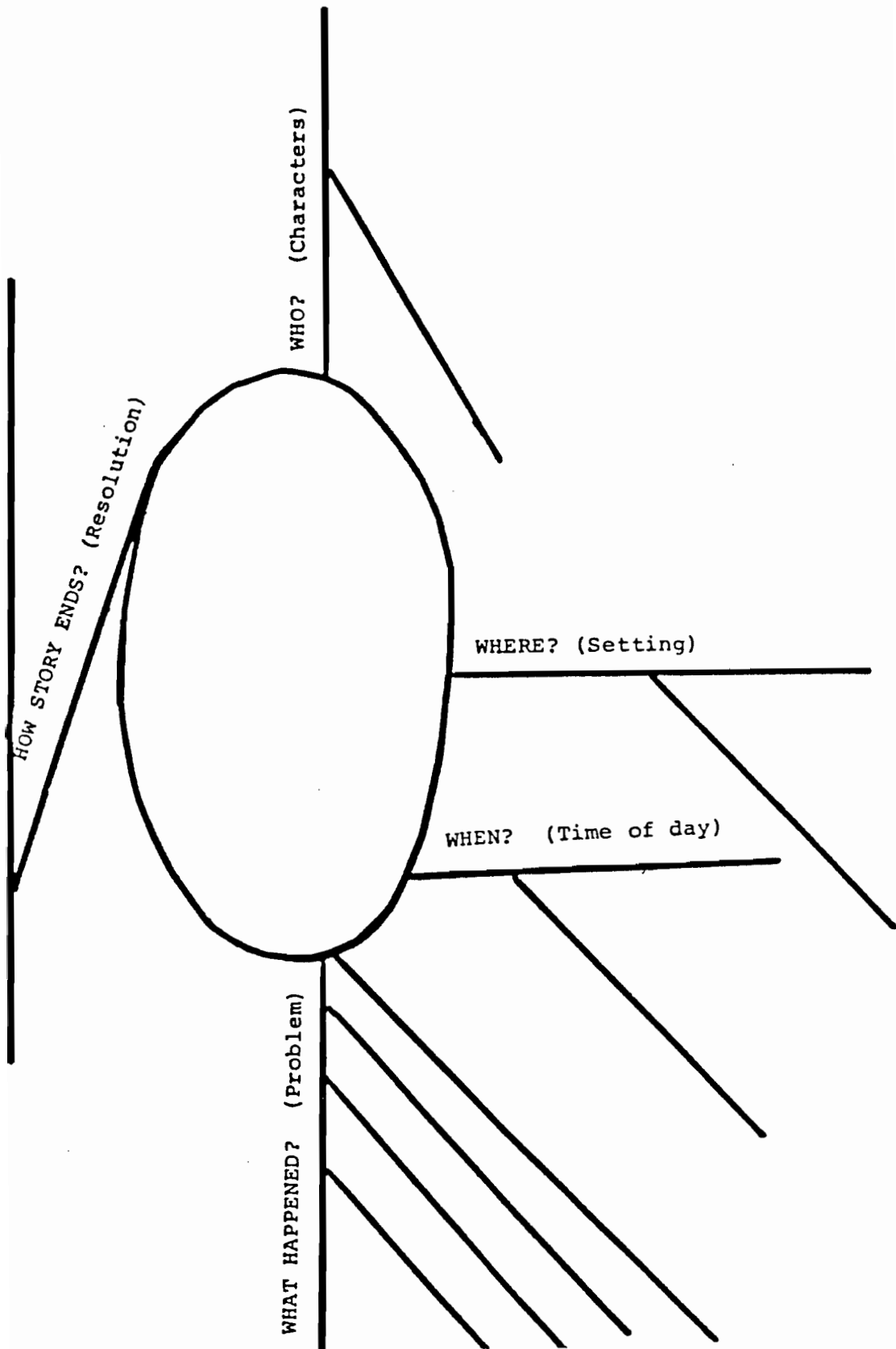
EXPLANATION OF THE STORY MAP

Mapping the story is a way of reprocessing the material read and can increase comprehension. This activity has proven enjoyable for children in elementary classrooms throughout the state of Maryland (Gambrell & McLaughlin, 1985). It allows students to identify common elements in each story (e.g., setting, problems or conflicts, and resolutions).

Simple story maps are developed initially with teacher guidance. After the teacher has provided practice with using story maps, students are encouraged to construct story maps when given blank maps on which they insert the outline of the story they plan to write. Once the map is developed, the child can write a well-planned summary of the story he/she has read.

Simple Directions

The teacher begins by asking students to write the title of the story in the center of the map. The teacher proceeds by asking students to write the appropriate information on the designated branches (e.g., Who are the characters in this story? Who is this story about? Where (setting) does this story take place? When (time) does this story take place? What (problems-conflict) happened in the story? How (resolution) does the story end?



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NAME:

DATE:

STORY SUMMARY

TITLE OF THE STORY.....

APPENDIX B

PRETEST RESULTS: TABLES

Table A.

Means and Standard Deviations of Comprehension Test Scores
by Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	7.25	(4)	7.67	(3)
	S	2.06		1.53	
Average	\bar{X}	15.90	(10)	15.50	(12)
	S	2.02		2.58	
High	\bar{X}	20.14	(7)	20.33	(6)
	S	1.22		1.21	
Total	\bar{X}	15.67	(21)	15.76	(21)
	S	4.91		4.52	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table B.

Analysis of Variance of Comprehension Test Scores.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	.10	1	.10	.004
Within Groups	890.48	40	22.26	

Table C.

Means and Standard Deviations of Language Mechanics Test Scores by Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	8.75	(4)	6.33	(3)
	S	.96		3.21	
Average	\bar{X}	10.40	(10)	11.67	(12)
	S	3.75		3.34	
High	\bar{X}	17.14	(7)	14.00	(6)
	S	2.27		4.38	
Total	\bar{X}	12.33	(21)	11.57	(21)
	S	4.53		4.22	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table D.

Analysis of Variance of Language Mechanics Test Scores.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	6.09	1	6.09	.32
Within Groups	767.81	40	19.20	

Table E.

Means and Standard Deviations of Language Expression Test Scores by Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	16.67	(3) ^b	14.33	(3)
	S	3.03		3.94	
Average	\bar{X}	21.20	(10)	21.08	(12)
	S	1.81		3.26	
High	\bar{X}	23.57	(7)	23.83	(6)
	S	1.27		1.17	
Total	\bar{X}	21.35	(20) ^b	20.90	(21)
	S	3.03		3.93	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

^bOne student in this group was absent.

Table F.

Analysis of Variance of Language Expression Test Scores.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	2.03	1	2.03	.16
Within Groups	484.36	30 ^a	12.42	

Note.

^aOne student was absent.

Table G.

Means and Standard Deviations of Holistic Ratings for
Writing Skills Test by Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	1.50	(4)	2.00	(3)
	S	.58		0.00	
Average	\bar{X}	1.50	(10)	1.92	(12)
	S	.71		.51	
High	\bar{X}	2.14	(7)	2.00	(6)
	S	.89		.63	
Total	\bar{X}	1.71	(21)	1.95	(21)
	S	.78		.63	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table H.

Analysis of Variance of Holistic Ratings for Writing Skills Test.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	.60	1	.60	1.38
Within Groups	17.24	40	.43	

Table I.

Means and Standard Deviations of Total Number of Sentences
Written by Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	1.50	(4)	2.00	(3)
	S	1.00		1.73	
Average	\bar{X}	1.60	(10)	4.08	(12)
	S	1.08		2.43	
High	\bar{X}	4.57	(7)	3.00	(6)
	S	3.15		2.45	
Total	\bar{X}	2.57	(21)	3.48	(21)
	S	2.40		2.38	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table J.

Analysis of Variance of Total Number of Sentences Written.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	8.60	1	8.60	1.51
Within Groups	228.38	40	5.71	

Table K.

Means and Standard Deviations of Words Per Sentence by
Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	24.67	(4)	44.50	(3)
	S	15.95		35.82	
Average	\bar{X}	33.40	(10)	17.15	(12)
	S	15.38		17.97	
High	\bar{X}	17.03	(7)	30.42	(6)
	S	9.98		29.47	
Total	\bar{X}	26.28	(21)	24.85	(21)
	S	15.18		25.01	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table L.

Analysis of Variance of Words Per Sentence.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	21.56	1	21.56	.05
Within Groups	17121.23	40	428.03	

Table M.

Means and Standard Deviations of Words Per Clause by Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	6.78	(4)	5.30	(3)
	S	1.39		.91	
Average	\bar{X}	6.61	(10)	6.39	(12)
	S	2.21		1.34	
High	\bar{X}	5.99	(7)	5.93	(6)
	S	1.33		.85	
Total	\bar{X}	6.44	(21)	6.11	(21)
	S	1.77		1.19	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table N.

Analysis of Variance of Words Per Clause.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	1.15	1	1.15	.51
Within Groups	90.57	40	2.26	

Table O.

Means and Standard Deviations of Words Per T-units by Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	6.78	(4)	6.43	(3)
	S	1.39		.38	
Average	\bar{X}	6.64	(10)	6.45	(12)
	S	2.17		1.31	
High	\bar{X}	6.52	(7)	6.25	(6)
	S	1.69		.66	
Total	\bar{X}	6.63	(21)	6.39	(21)
	S	1.81		1.03	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table P.

Analysis of Variance of Words Per T-unit.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	.61	1	.61	.28
Within Groups	86.82	40	2.17	

Table Q.

Means and Standard Deviations of T-units Per Sentence by
Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	3.50	(4)	6.08	(3)
	S	1.82		4.44	
Average	\bar{X}	5.11	(10)	2.55	(12)
	S	2.16		2.51	
High	\bar{X}	2.77	(7)	4.19	(6)
	S	1.68		3.50	
Total	\bar{X}	4.02	(21)	3.52	(21)
	S	2.15		3.19	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table R.

Analysis of Variance of T-units Per Sentence.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	2.59	1	2.59	.35
Within Groups	296.32	40	7.41	

Table S.

Means and Standard Deviations of Total Words Written by
Groups and Ability.

Ability		Groups			
		Experimental	\bar{n}^a	Control	\bar{n}^a
Low	\bar{X}	36.50	(4)	52.00	(3)
	S	9.47		24.88	
Average	\bar{X}	43.20	(10)	42.33	(12)
	S	13.69		15.76	
High	\bar{X}	55.43	(7)	47.33	(6)
	S	20.65		20.67	
Total	\bar{X}	46.00	(21)	45.14	(21)
	S	16.70		17.84	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table T.

Analysis of Variance of Total Words Written.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	7.71	1	7.71	.03
Within Groups	11944.57	40	298.61	

Table U.

Means and Standard Deviations of Percentage of Misspelled Words.

Ability		Groups			
		Experimental	\underline{n}^a	Control	\underline{n}^a
Low	\bar{X}	32.25	(4)	32.00	(3)
	S	7.41		22.61	
Average	\bar{X}	23.00	(10)	19.67	(12)
	S	7.48		12.06	
High	\bar{X}	11.14	(7)	14.83	(6)
	S	8.97		11.20	
Total	\bar{X}	20.81	(21)	20.05	(21)
	S	10.90		13.86	

Note.

^aNumbers in parentheses indicate the number of students in that ability group.

Table V.

Analysis of Variance of Percentage of Misspelled Words.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	<u>F</u>
Between Groups	6.10	1	6.10	.04
Within Groups	6218.19	40	155.45	

APPENDIX C

LETTER OF PERMISSION TO COPY FLICKS

**HARCOURT BRACE JOVANOVICH, INC.**

ORLANDO, FLORIDA 32887 TELEPHONE: 305-345-2000 TELEX: 568373

September 30, 1986

Ms. Sandra Westbrooks
2001 South 12th Street, Apt. 2
Charleston, IL 61920


Dear Ms. Westbrooks:

This letter is in response to your request of July 14th and your correspondence after that date regarding permission to reproduce three selections from FLICKS by Tomie dePaola for classroom use in connection with research you are doing about wordless picture books.

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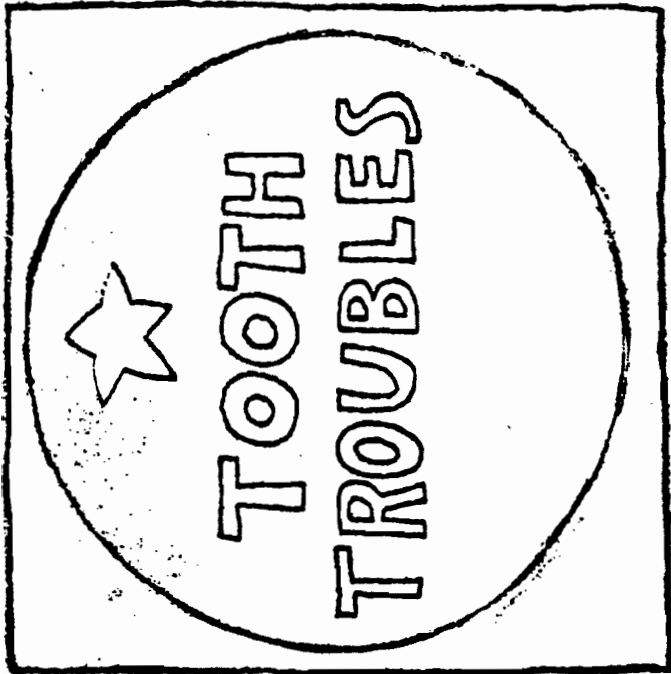
Yours sincerely,


Kathryn Naughton
Manager, Copyrights and
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KN/mr

APPENDIX D

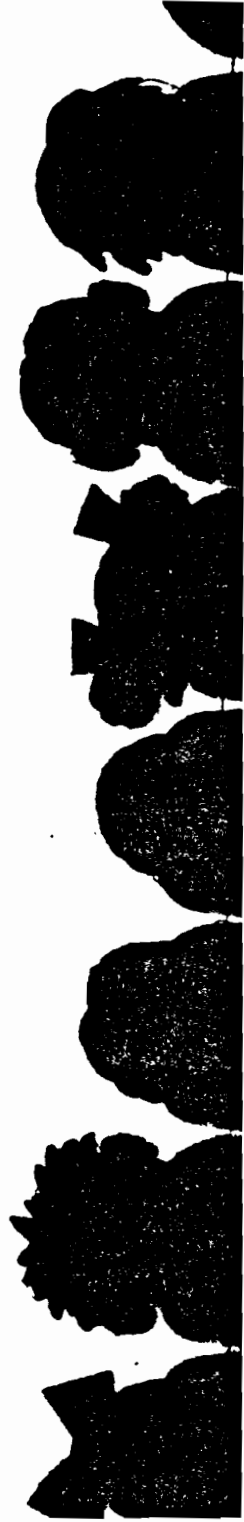
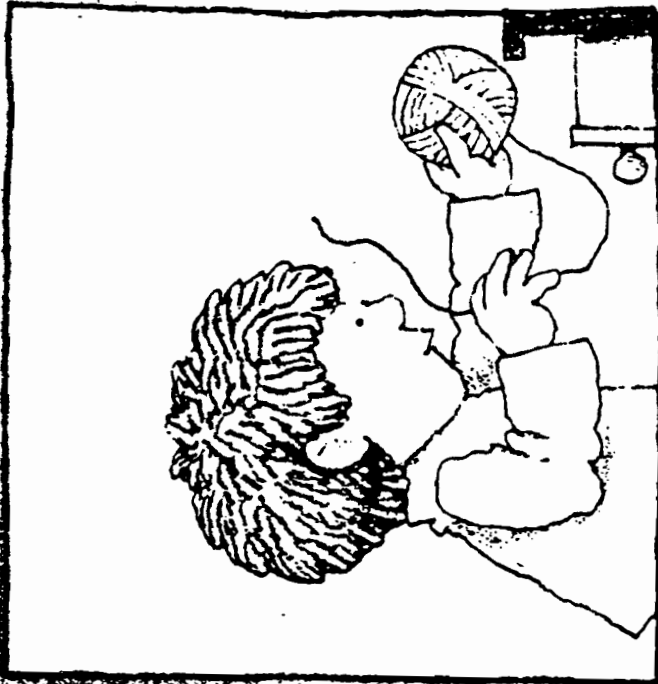
PRETEST: "TOOTH TROUBLES"*

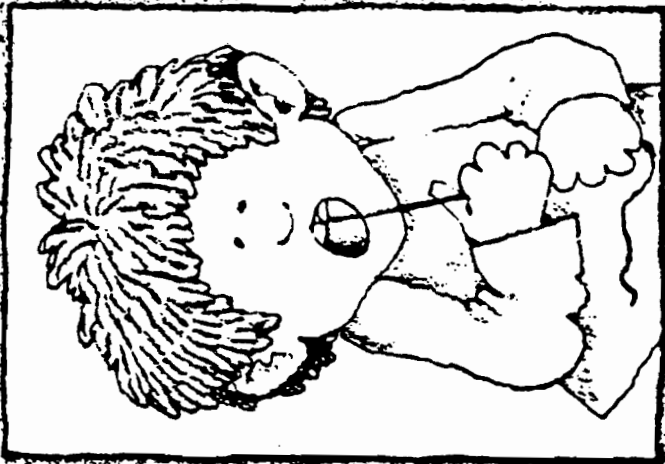
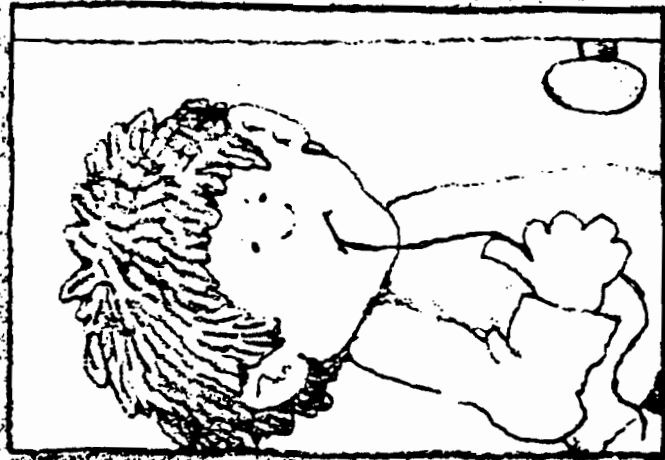
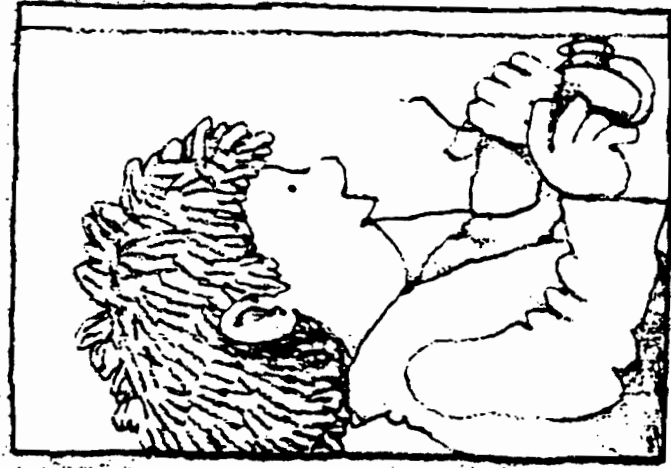


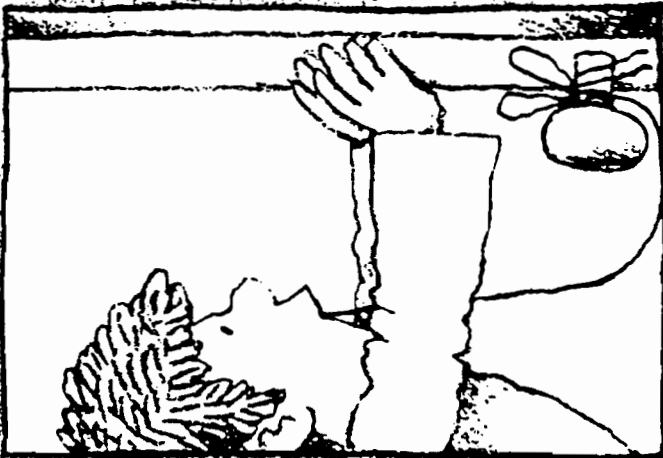
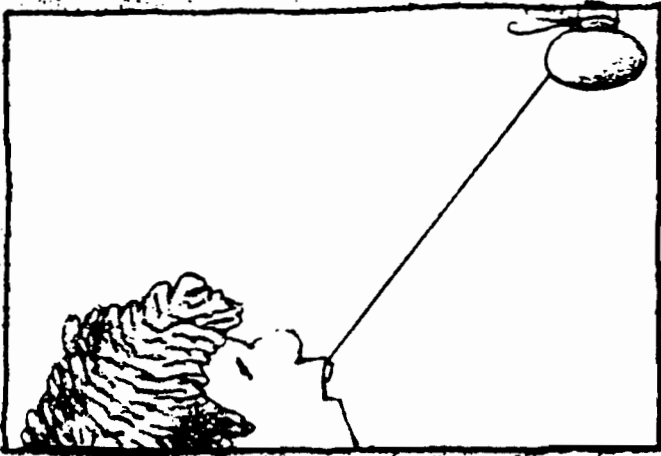
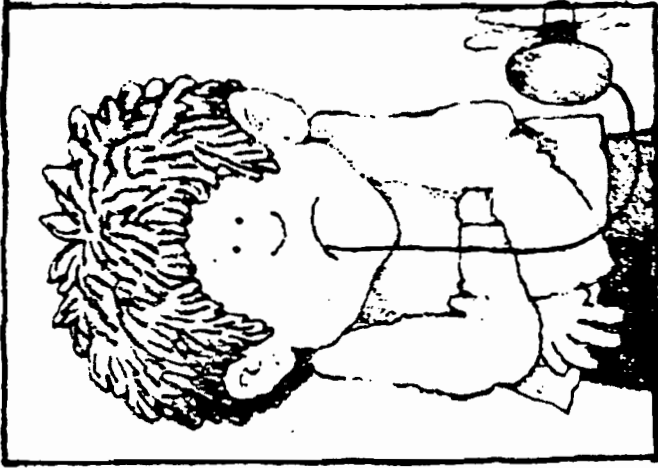
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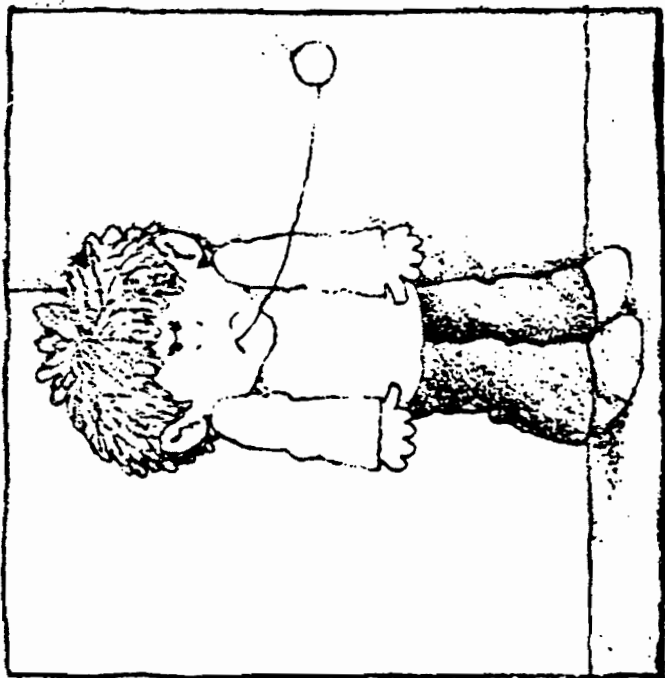
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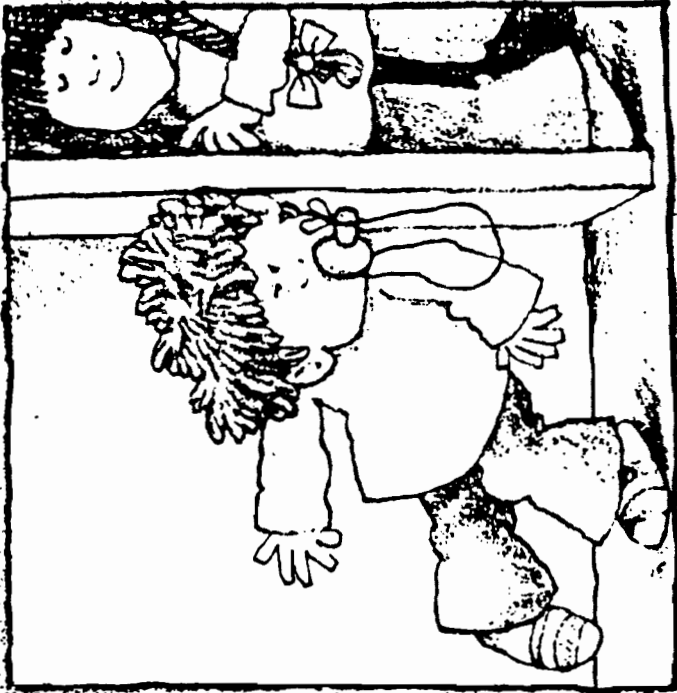








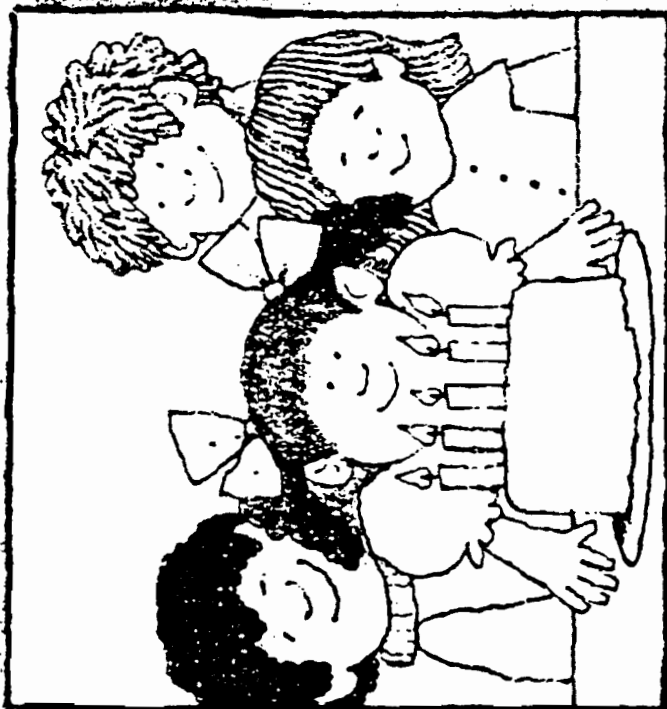




APPENDIX E

POST- AND DELAYED POSTTEST: "THE BIRTHDAY CAKE"*

THE BIRTHDAY CAKE



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