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The Integration of Sentence-Combining and Sentence-Reduction and its Effect on the Writing and Reading Comprehension of Fifth Grade Students

Janice McKain
The College at Brockport

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THE INTEGRATION OF SENTENCE-COMBINING AND SENTENCE-REDUCTION
AND ITS EFFECT ON THE WRITING AND READING COMPREHENSION
OF FIFTH GRADE STUDENTS

THESIS

Submitted to the Graduate Committee of the
Department of Curriculum and Instruction
Faculty of Education
State University College at Brockport
in Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Education

by

Janice McKain

State University College at Brockport

Brockport, New York

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Abstract

This study investigated the effectiveness of a structured sentence-combining/sentence-reduction program used to instruct fifth graders of average to above average reading ability. The primary purpose was to determine whether significant differences occurred between the performances of a treatment and control group on measures of writing maturity and reading comprehension. Writing performances of both groups on a Syntactic Maturity Test were analyzed using t-unit analysis. Three measures of writing maturity: words per t-unit, clauses per t-unit, and words per clause, were compared to determine if the writing maturity of the treatment group on each of these measures was significantly greater than that of the control group. Reading performances on an instructor designed cloze test were compared to determine whether the treatment group improved in their comprehension ability significantly beyond the control.

Thirty-six fifth grade students with average to above average reading ability participated in this study. The treatment and control groups were randomly chosen and found to be comparable in both reading and writing ability prior to beginning treatment. The treatment group received three half-hour instructional sessions a week for six weeks. A program of instruction was devised by the researcher based on exercises from previous research studies and published texts.

Writing and reading performances were compared using a t test for independent means. The data were analyzed at the .05 level of significance. Significant differences were found between treatment and control group

performances on two measures of writing maturity and on the cloze test measure of reading comprehension. No significant differences were found between the two groups in the number of words per clause used in their writing. However significant differences in words per t-unit, clauses per t-unit, and comprehension raw scores on the cloze test indicated gains in writing maturity and reading comprehension.

It was concluded that students instructed in a structured sentence-combining/sentence-reduction program improved both their reading and writing skills. Limitations and suggestions for further research in this area were noted. Suggestions for classroom applications of this program were discussed.

SUBMITTED BY:

Janice McHain

APPROVED BY:

Arthur E. Smith 8/31/81
Thesis Advisor Date

Frances Moroney 8/31/81
Second Faculty Reader Date

Robert B. Ribble 9/1/81
Chair, Date
Graduate Policies Committee

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Chapter I

Statement of the Problem

Purpose

The primary purpose of this study was to examine the effects of an integrated program of sentence-combining and sentence-reduction on the writing and reading comprehension of fifth grade students. Experimental and control group performance on a rewriting assignment was examined using t-unit analysis to determine gains in syntactic maturity. Results from a researcher designed cloze test were compared to determine any significant differences between the experimental and control group.

Background

Within the last two decades, sentence-combining has become an area of psycholinguistic research receiving considerable attention. Based on Chomsky's (1957) theories of transformational-generative grammar, sentence-combining is a technique for combining and/or embedding simple kernel sentences according to specified transformational rules. This technique originated with the research studies of Bateman and Zidonis (1966) and Mellon (1969) and has been simplified (O'Hare, 1971) and varied (Perron, 1974) in subsequent studies.

What is most notable is that sentence-combining has been shown to be successful as indicated by reported results across all grade levels (Callaghan, 1977; Combs, 1977; Daiker, 1978; Hunt & O'Donnell, 1970;

Miller & Ney, 1968; Perron, 1974; Straw, 1978). Sentence-combining has been found to improve the "maturity" of student writing as described by Hunt (1965) in his normative study of syntactic structures used in the writing of students at different grade levels. More recent studies (Callaghan, 1977; Combs, 1977; Pederson, 1979; Straw, 1978) have revealed gains in syntactic and semantic fluency and overall quality following sentence-combining instruction. Though not all studies of sentence-combining have indicated gains in all areas of writing, substantial support exists for the use of sentence-combining activities in the teaching of writing at all grade levels when the goals are to improve students' writing maturity, fluency, and quality.

Since its conception, sentence-combining practice, because it offers students an opportunity to manipulate language structures, has been thought to affect not only students' writing but also their ability to read these same structures more effectively.

Theoretical justification for explicit syntactic manipulation in writing as a means of improving reading comprehension may derive from the possibility that such exercises clarify both the meaning and use of complex structures for children. Complex structural block-building exercises, so to speak may help students better understand syntactic relationships within the sentence. (Stotsky, 1975, pp. 32-33)

Based on Goodman's description of the cue systems utilized in the reading process, some researchers (Combs, 1977; Hughes, 1975; Hunt & O'Donnell, 1970; Fisher, 1973; Sternglass, 1976; Stotsky, 1975; Straw, 1978) have theorized that practice with constructing more complex structures should transfer to the students' abilities to make use of syntactic cues while reading. These theories have led to investigations of the effect of

sentence-combining on reading comprehension. However, results of these investigations have been inconclusive.

Combs (1977) used two comprehension measures to evaluate gains following a sentence-combining program. One of these measures was a standardized reading comprehension test. The other was a cloze test which he designed. Significantly better scores were achieved by the experimental group on the cloze test while scores on the standardized test were non-significant. No researcher investigating the effects of sentence-combining practice on reading has found significant results using a standardized comprehension test measure. However, experimental sentence-combining groups have performed significantly better than control groups on a cloze structure test (Hunt & O'Donnell, 1970), a syntactic miscue analysis test (Hughes, 1975), and instructor designed cloze tests (Fisher, 1973; Straw, 1978). It has been suggested that these instruments are more sensitive to gains in syntactic processing than standardized reading comprehension tests.

A variable which enters into the comparison of results from these studies is the degree to which each researcher bridged the gap from combining sentences, a structured writing activity, to disassembling written text, a reading activity. Hunt and O'Donnell had students disassemble the sentences they constructed in the "early lessons" taught. There is no indication how long this continued. Fisher had students practice a type of sentence disassembly in cloze activities which were given in lessons toward the end of his program of sentence-combining. Straw examined the effects of both sentence-combining and what he termed sentence-reduction using two separate experimental groups

and comparing each of them to a control group. His results suggested that sentence-reduction practice alone could produce some improvement in reading comprehension as measured by a cloze test.

Sentence-combining has been shown to be effective for improving student writing. It may be that this practice also improves reading since it familiarizes students with the syntactic structures they are already capable of producing orally and in their writing. Furthermore, it increases their awareness of how written text is constructed.

Since reading comprehension appears to depend upon the type of syntactic structure of the printed language, it would seem that children would find it easier to understand what they read if they could readily analyze the various structures and understand the relationship of the various lexical items in such structures. (Fagan, 1971, p. 172)

However, sentence-combining alone may not be sufficient for the student to see the relationship of this practice to actual reading process. Practice in both sentence-combining and sentence-reduction allows the student to participate in both writing and reading while noting the relationships between the two processes. Improvement in both areas of communication may result.

Though syntactic processing is only one element of reading, it is a necessary one that interrelates with the semantic and grapho-phonemic elements in acquiring meaning from written text. Gaining proficiency in this one area would be a step toward becoming a better reader.

Need for the Study

Suggestions for the integration of all areas of the language arts into a total communication curriculum have been evident in the reading literature for the last fifty years. Yet, only recently has emphasis on

student writing come into the forefront due to new research developments in this area and public concern for "basics" instruction.

Researchers have sought to discover methods that would improve both reading and writing. Though significant correlations have been found between student writing ability and reading ability (Loban, 1976), research efforts to improve one area by instruction in the other have proven fruitless except in the application of sentence-combining (Belanger, 1978). There are some indications that this activity could produce gains in both productive and receptive written language processing, but research findings are far from conclusive. A convincing rationale has been developed by Fagan (1971), Hughes (1975), Stotsky (1975) and others suggesting that syntactic manipulation could aid syntactic processing.

Sentence-reduction has been found to produce some gains in comprehension, but as yet no structured program of sentence-combining and sentence-reduction has been developed and examined. Hunt (1970) suggested looking at sentence-combining deductively and inductively, but in his study it was not clear how much disassembly experience students received.

Combs (1977), Hughes (1975), and others have suggested the need for further research into the effects of sentence-combining on reading comprehension. With the conviction that greater gains could be realized if sentence-combining were integrated with sentence-reduction, the following study was conducted.

Questions to be Answered

1. Will there be a significant difference in the posttreatment mean number of words per t-unit as measured by a t-unit analysis between fifth graders trained in sentence-combining/sentence-reduction and a control group?

2. Will there be a significant difference in the posttreatment mean number of clauses per t-unit, as measured by a t-unit analysis, between fifth graders trained in sentence-combining/sentence-reduction and a control group?

3. Will there be a significant difference in the posttreatment mean number of words per clause, as measured by a t-unit analysis, between fifth graders trained in sentence-combining/sentence-reduction and a control group?

4. Will there be a significant difference in the posttreatment mean raw scores, as measured by a cloze test of reading comprehension between fifth graders trained in sentence-combining/sentence-reduction and a control group?

Definition of Terms

Sentence-combining - A process of joining simple kernel sentences in the formation of structurally more complex sentences using operational signals designed to facilitate the production of these grammatical structures (O'Hare, 1971).

Sentence-reduction - A reverse process from sentence-combining in which a complex sentence is separated into kernel sentences.

Kernel sentence - A simple sentence free from subordination or embeddings that usually contains a subject, a predicate and possibly some modifiers.

Complex sentence - A sentence constructed from two or more kernel sentences.

Examples: Kernel sentences: The man is my brother.

The man is painting the house. (who)

Complex sentence: The man who is painting the house
is my brother.

In sentence-combining, the student is given kernel sentences and led to construct the complex sentence.

In sentence-reduction, the student is given a complex sentence and led to derive the kernel sentences.

T-unit - One main clause plus any subordinate clause which is attached to it or embedded in it (O'Hare, 1971). Hunt (1965) and O'Hare (1971) refer to the t-unit as "minimal terminable unit."

Examples: Simple sentence: It is foggy tonight. (1 t-unit)
4 words/t-unit

Complex sentence: It is true that the world is round.
(1 t-unit)
8 words/t-unit

Compound sentence: The party was over and the girls
went home. (2 t-units)
4 words/t-unit

Syntactic maturity - Syntactic manipulative ability resulting in an increase in the number of embeddings in each sentence. Syntactic maturity is evidenced by the number of words per t-unit, the number of words per clause, and the number of clauses per t-unit. Hunt found the best index of maturity is t-unit length (O'Hare, 1971, p. 21).

Rewrite task - A writing task where students are given a paragraph of short kernel sentences and told to rewrite the paragraph in a better way.

Free writing - Writing produced by a student on a chosen topic in which the student is free of structural directives.

T-unit analysis - An analysis of a writing sample where the text is broken down into t-units.

Mean t-unit length - The number of words in a passage are divided by the number of t-units in the passage. This method has been used as an index of syntactic complexity or syntactic fluency.

Cloze test for comprehension - A reading passage of approximately 250 words with the introductory and closing sentences remaining intact. In this study, a standard cloze was used where every fifth word was deleted in the remaining passage. Students were instructed to fill in the blanks with the word that best fits the context.

Above average readers - Those students designated as above average readers by their teachers based on their standardized reading test scores and IQ scores. These scores were correlated with results from a comprehension cloze measure administered before beginning treatment.

Average readers - Those students designated as average readers by their teachers based on their standardized reading test scores and IQ scores. These scores correlated with results from a comprehension cloze measure administered before beginning treatment.

Summary

Sentence-combining has been found to produce significant gains in students' writing maturity, fluency, and overall quality. There is sufficient rationale from research to suggest that sentence-combining could improve one element of reading--syntactic processing. Sentence-reduction has been included in some sentence-combining programs where significant results have been noted on tests of student comprehension. Results from these studies have suggested that the integration of sentence-combining and sentence-reduction could produce improvement in writing and reading. A program which could improve both of these areas may be considered a useful addition to a language arts curriculum.

Chapter II

Review of the Research

Purpose

The purpose of this study was to investigate the effects of a structured sentence-combining/sentence-reduction program of instruction on the reading and writing performances of fifth grade students. In this chapter, the review of the literature will include the following areas: research on the relationship between reading and writing, the effects of psycholinguistic research in each of these areas, the significance of the syntactic component in reading comprehension, research into sentence-combining and sentence reduction, and the validity of the cloze test as a measure of reading comprehension.

The Integration of Reading and Writing in a Language Arts Program

For at least a half-century, research in language arts has included examinations of the interrelationships among the four language modes. In an analysis of the aspects of three of these modes: writing, reading, and speaking, Hatfield (1935) emphasized the unity among these areas and encouraged more thorough evaluation of their relationships. Twenty years later, the National Conference on Research in English published a summary of the research in this area reporting the high correlations found among the language skills. The authors of this report concluded that "the language arts program should be modified in the direction of a language

program rather than a skills program in a given content area" (Artley, 1954, p. 13). In his description of a curriculum approach in a 1965 journal article, Hatfield again emphasized the need for integrating language arts areas. He stated: "Children must learn to read about facts and ideas with comprehension and judgment and speak and write clearly and accurately" (p. 675).

Reading and Writing--Correlational Studies

Most theorists agree that there are interrelationships among the language arts, though there are disagreements concerning the strength of these relationships. Among the strongest in support of this theory is Loban (1963, 1966, 1967). In his study of language development, he observed 211 pupils from kindergarten through twelfth grade, continuously gathering data regarding their language development. The sample group was divided into three subsamples consisting of 35 students rated high in oral skills, 35 rated low, and a random sample of 35. Loban hypothesized that there would be a strong positive correlation among speech, reading and writing skills. This theory was verified by the data which included strong positive correlations among the four areas. Students with low oral language had low reading ability and low writing ability. "They had disorganized writing, and were painful decipherers rather than fluent readers" (Loban, 1976, p. 84). He also stated that "children who had superior oral language skills tended to excel in reading and writing" (p. 85). Loban's study was a definitive one which combined with other studies, led researchers to look more closely at the implications of his data and conclusions.

In another study by Tovatt and Miller (1967), high correlations were reported among STEP reading, writing and listening tests, and high correlations between these tests and written composition. In Ney's (1975) study of miscues, high correlations were noted between the phonological/pronunciation miscues in reading and spelling miscues in writing. Ney suggested that at this level the processes may be similar. He concluded that reading and writing should not be kept apart in instruction (p. 13). He further contended that students should be instructed in the difference between the two processes, so that their skills would be enhanced.

Though not all studies have indicated positive correlations between reading and writing ability (Bebensee, 1977; Thomas, 1976), most researchers and educators would agree that all language arts should be incorporated into a total language curriculum. Recent research in writing may advance this proposition. This study sought to examine one such area of writing research, sentence-combining, to determine its effects on both writing and reading.

Psycholinguistic Research and Reading

Before 1950, language investigations were largely of the association type where words and sounds were studied in stimulus-response situations (de Beugrande, 1979). However, during the fifties, psycholinguistics, an interdisciplinary approach to the study of language, emerged as a new science. Goodman described psycholinguistics as the intersection of the two sciences of linguistics and psychology. Its value lay in its contributions to the understanding of the reading process and reading acquisition. Noam Chomsky influenced the psycholinguistic movement with

his introduction of a more accurate method of describing the language which he called transformational-generative grammar. In his publication Syntactic Structures (1957), Chomsky discussed "ordered operations" which transform kernel sentences into complex sentences. Later (Chomsky, 1965), the now familiar concepts of "surface structures" and "deep structures" were introduced. Smith stated that one consequence of the Chomskian influence was a reemphasis on the distinction between two language levels.

The physical aspect of a sentence or utterance . . . is derived from what was labelled the "surface structure," and the information conveyed by the utterance--its meaning--was derived from a "deep" or "underlying structure." Grammar or syntax--the set of rules that determine how words are organized in sentences--was defined as the bridge between the surface and deep levels of language. (Smith, 1973, p. 3)

Based on the developments in psycholinguistics, Goodman (1965) devised a descriptive model of the reading process consisting of three cue systems which the reader uses simultaneously and interdependently. These are the grapho-phonetic, syntactic, and semantic information systems. Goodman described reading as a "psycholinguistic process" which involves the "active reconstruction of a message from written language" (Goodman, 1965, p. 639). In a discussion of oral reading miscues, he stated, "Reading is a process in which the reader picks and chooses from the available information only enough to select and predict a language structure which is decodable" (Goodman, 1969, p. 17).

Research (Fusaro, 1978; Goodman, 1969) has suggested that fluent readers make minimal use of graphic cues and greater use of syntactic and semantic cues. Goodman also noted that the proficient reader is one who makes minimal use of all the available information. Psycholinguistic

theories have led to studies examining the relative importance of the syntactic and semantic component in reading comprehension. That research examining the importance of syntactical processing in comprehension has relevance to this study.

The Syntactic Component in Reading Comprehension

Recently, research literature has revealed a number of studies examining the importance of the syntactic component in the total reading process (Bormuth, 1969; Galcher, 1976; Guthrie, 1976; Holmes, 1977; O'Donnell, 1976; Pearson & Johnson, 1978; Simons, 1970).

O'Donnell investigated the relationship between syntax processing and reading to determine if improvement of students' "deep structure recovery" skills would improve their reading comprehension. He based this study on the theory that the "ability to comprehend syntactic structure is positively correlated with the ability to comprehend meaning" (p. 1). O'Donnell reported that Simons (1970) found a correlation of .73 between scores on a "deep structure recovery" test and scores on a cloze test. O'Donnell used Simon's instrument with seventh graders reading below grade level. Following treatment to improve students' deep structure recovery, the posttest results revealed no significant improvement in either recovery skills or reading comprehension skills. Following revisions of the test instrument and additional testing of eighth and ninth grade students, O'Donnell concluded that there are times when a reader can decode an underlying structure without attending to all structure cues. However this is not to say that structural cues are unimportant.

Apparently semantic cues are frequently sufficient for recovery of meaning, but when they are not, we fall back on syntactic cues . . . the function of syntactic cues is that of supporting and clarifying cues of semantic structure. (p. 8)

Finally O'Donnell suggests that sensitivity to syntactic cues while correlating highly with comprehension measures would not correlate as highly as measures of semantic information processing.

The studies of O'Donnell and Simons support the value of syntactic processing despite the apparently greater need for semantic knowledge. It becomes apparent that it is the interaction of many variables which effect the difficulty of a comprehension passage. Marcus (1971), cited in Galcher (1976), stated that "with so many variables present [increasingly complex structure, greater vocabulary and concept load, sentence complexity and length], a student's score on a reading test may reflect a combination of factors that are difficult to isolate" (p. 89). Guthrie (1976) found poor readers were inferior in using semantic as well as syntactic cues to select words in a written multiple-choice cloze (maze) test.

The previously mentioned studies support the importance of using both semantic and syntactic cueing systems suggested from psycholinguistic literature. However the question of whether improvement in syntactic processing would improve reading comprehension has not been conclusively resolved.

Takahashi (1975) and others found comprehension of syntax to be a factor in poor reading comprehension. Strickland (1962), Ruddell (1965) and Tatham (1970) found children obtain higher comprehension scores on material with language patterns similar to their own. Pearson and

Johnson (1978) found middle to high average readers could handle more complex structures and preferred them. Takahashi (1975) and Smith (1970) noted that knowledge of syntactic structures increased over the grades.

Holmes (1977) examined the comprehension process and stated the following conclusion, "The evidence I have presented amply demonstrates that any model of sentence comprehension that minimizes the importance of syntax is misguided" (p. 243). She described three major stages of comprehension:

First, there must be a stage at which a single surface structure is constructed for the sentence while the words are being identified Clause boundaries would be located on the basis of the presence of relative pronouns, complementizers, and conjunctions (Fodor & Garrett, 1967) and from syntactic information contained in the verb (Fodor et al., 1968) . . . a stage of semantic analysis must follow the superficial syntactic processing In the next stage, people check the accuracy of their preliminary hypothesis about the deep-structure relations, by integrating the word meanings and the results of the surface structure analysis. (p. 244)

Holmes points out that there are many kinds of additional processing that could subsequently be carried out. This theoretical description of the processing stages of comprehension supports the view that syntactic processing is an important and necessary activity in the reading process. Improvement in syntactic processing should improve total reading ability because of the interdependence of both the semantic and syntactic system. The present research study is based on the theory that if a method could be found that improves writing and at the same time aids the student in syntact processing, reading gains might also be realized.

Psycholinguistics and Writing Research

Prior to the 1950's, writing research was limited due to inadequacies of evaluation instruments. However, many studies had attempted to investigate the value of grammar instruction in improving student writing. Braddock, in a research update in 1963, noted that neither instruction in traditional or structural grammar had been found to significantly improve student writing. Language studies based on psycholinguistic theories, however, presented a new opportunity for research in this area.

Chomsky's newly developed transformational-generative grammar gave researchers a new grammar to evaluate. Language studies by Hunt (1965) and Loban (1963, 1976) examined transformations used by students in their writing at different grade levels. Hunt defined a language unit also used by Loban which opened the way for more accurate evaluation of the maturity of student compositions. This "minimal terminable unit" later termed simply "t-unit" has been used in many successive studies utilizing the writing evaluation procedure of t-unit analysis.

Based on the description of deep structure "kernels," a procedure was developed that would help students learn to write more "mature" sentences and compositions. This procedure became the structured activity known as sentence-combining. Using this technique, students practiced syntactical manipulation or application of certain transformations to basic kernel sentences to produce more complex and hence more mature syntactical constructions in their writing.

Sentence-Combining Research

Sentence-combining research developed as an outgrowth of the transformational-generative grammar theories of Chomsky and Miller. These research theories proposed that normal human beings possess "an inner core of language capacity which is the basis for their communication powers" (Perron, 1976, p. 653). Language studies have revealed that by the time they enter school, most children are capable of producing nearly all of the common grammatical forms and constructions of the language (Carroll, 1960). However, studies by Loban (1963), Menyuk (1969), O'Donnell (1967), Strickland (1962), and others have indicated that the degree to which children produce these structures in their speech and writing may depend on a variety of factors. Sentence-combining practice has been found to be an effective instructional method for encouraging children to produce in their writing the grammatical structures that they already know.

Sentence-combining is a process of joining simple "kernel" sentences into structurally more complex sentences using operational signals and the student's own innate knowledge of syntax. This method has been referred to as transformational sentence-combining since it was derived from the theory of transformational-generative grammar developed by Chomsky (1957) and relies on the students' abilities to transform or rearrange structures in their grammar. Early studies of sentence-combining (Bateman & Zidonis, 1966; Mellon, 1969) required students to learn the elements (rules) to simple sentences in their writing. Criticisms were leveled at these studies (O'Hare, 1971) because of their dependence on the learning of numerous rules. These studies were, however, precursors

of the successful ones that followed which did not rely on formal grammar instruction. The major significance of Mellon's study was the technique he used to evaluate his students' writing, namely t-unit analysis.

Prior to Mellon's study, Hunt (1965) performed an investigation examining the grammatical structures written by students at grades 4, 8, and 12. Two terms defined by Hunt and later used by Mellon and successive writing researchers are "maturity" of writing and "t-unit." The t-unit was devised to describe what Hunt identifies as the "concept of the 'minimal terminable unit,' which includes one main clause plus all the subordinate clauses attached to it or embedded within it" (p. 141). He determined maturity of writing by the length of the t-units and consolidation of grammatical structures within the t-unit. After applying t-unit analysis to the students' writing samples, Hunt (1965) concluded that as students get older they tend to write longer t-units, longer clauses, and more clauses per t-unit, and that the best index of syntactic maturity is t-unit length (O'Hare, 1971). Mellon evaluated his seventh graders' writing adapting the t-unit analysis for twelve factors of syntactic fluency and found all these factors showed significant gains.

O'Hare completed a study of sentence-combining in 1971 that included no direct grammar instruction or terms. O'Hare theorized that grammar labels could be eliminated and students led to combine "kernel sentences" with the help of word signals indicating phrases and clauses. Hunt (1965) had previously suggested that a sentence building program could "widen the students' span of grammatical attention and

concern . . . and work up to structures of considerable depth and complexity" (1965, p. 157). O'Hare found that his experimental group wrote significantly more mature and higher quality compositions suggesting that exercises in sentence-combining alone without formal grammar instruction could improve student writing.

Successive studies of sentence-combining and its effect on students' writing have been conducted at the elementary (Fisher, 1973; Hunt & O'Donnell, 1970; Perron, 1974; Straw, 1978), junior high (Combs, 1975; Hughes, 1975; Pederson, 1979; Phelps, 1978), senior high (Bivens, 1974; Callaghan, 1977; Howie, 1979) and college (Daiker, 1978) levels. Gains have been realized in syntactic maturity (Hunt & O'Donnell, Fisher, Howie), syntactic fluency (Bivens, Pederson, Straw), semantic fluency (Pederson), and overall quality (Combs, O'Hare, Pederson) of student writing as measured by free writing (Combs, Perron, O'Hare), structured writing (Howie, Mellon, Pederson) and rewriting (Fisher, Hunt & O'Donnell, Straw). Growth in writing, based on Hunt's normative data has varied from as much as five years' growth (short term), to one to two years retained growth (Combs, Pederson).

Studies have varied in length and method of instruction. Fisher's students received 12 lessons in sentence combining over five weeks and showed improvement in writing maturity, while Hunt and O'Donnell provided 29 sentence-combining lessons over a year with resultant writing gains. Other studies varied according to instructional approaches. While some studies followed the structured guidelines of O'Hare, others such as Perron's developed less structured activities such as games to provide for more variety in instruction. Reports of positive attitudes of

students toward sentence-combining instruction by Daiker, Perron and others suggests that students prefer this method to other methods of teaching writing skills.

Though some studies (Green, 1972; Phelps, 1978) have found no significant changes in student writing, based on the quantity of research in this area, it appears that Hunt's suggestions for sentence building when effectively implemented have resulted in positive gains in students' writing skills.

Sentence-Combining and Reading Comprehension

Rationale

Since practice in sentence-combining equips students to apply mature strategies in manipulating syntax, and their familiarity with syntactic patterns helps them to predict and understand written language, some researchers have suggested that success in sentence-combining might bring about some improvement in reading comprehension. Both Hunt and O'Hare have raised questions concerning the effect sentence-combining might have on reading. Hunt suggested that the student "might or might not break down complicated structures into simple clauses, though the whole process has both deductive and inductive aspects" (1965, p. 157). O'Hare proposed that further research examine this effect.

Hughes (1978) stated that some studies suggested a close relationship between writing and success in reading, particularly in the ability to bring implicit knowledge of syntax to bear while reading. Hughes commented "that improving slow readers' syntactic maturity may be one way of helping them to greater reading fluency" (p. 7). Both Sternglass

(1976) and Stotsky (1975) have proposed that students' overall syntactic competence could be affected by improving syntactic maturity. Heil (1976) stated that ". . . primary children who are better able to manipulate syntactic structures under investigation are those who do better in reading comprehension" (p. 8).

Borgh (1965) defended the importance of grammatical analysis as a classroom instructional technique for teaching reading. She suggested the use of expansions and transformations to show the students the control they have over their language and how language structures affect word meaning. She stated: "The increasing control of structure may then enable him to use the vocabulary he has gained in his reading experience" (p. 34).

Since the syntactic component is a significant commonality in both the reading and writing process, it would seem conceivable that students' increased knowledge of the possible syntactic structures and practice in constructing them would heighten their awareness of these constructions. Subsequently, they may become more capable of identifying and comprehending subordinations in the process of chunking complex reading material. As was previously mentioned, Holmes' description of the first stage of comprehension consisted of the reader constructing the surface structure, locating the clause boundaries, and identifying syntactic information while identifying the words. Sentence-combining practice should enable readers to perform at least this stage of the reading process more effectively. The following studies have been investigations in the effects of sentence-combining practice on reading comprehension.

Research

The first study to examine the effects of sentence-combining practice on reading was conducted by Hunt and O'Donnell (1970). Hunt had previously suggested that this procedure could prove valuable to reading as well as writing. The stated purpose of this study was to determine if materials created for 180 fourth graders could increase their normal syntactic development. Sentence-combining materials were devised using no grammatical terms and consisting of a dozen transformations. An additional procedure referred to as sentence "disassembly" was also included.

The early lessons also required that the students break sentences back down into what might be called (somewhat inaccurately) the underlying deep structures. That is, once the students had built up a dozen sentences . . . they then disassembled them. (p. 8)

It was thought that this activity would aid in reading and listening.

The writing pre and posttests consisted of both a free writing and rewriting assignment devised by the researchers. The instruments measuring comprehension were the Nelson Reading Test and Stedman's Reading Structure Test. The experimental students were found to be significantly more adept at assigning syntactic structure, however results on the standardized reading test were non-significant. As a result of their findings, the researchers suggested that the instructional methods used in this study should be made a part of the curriculum, since the exercises helped improve reading and writing. Without further research however, these suggestions were premature.

Later investigations examined the effects of sentence-combining with students at other grade levels and different instruments were used

to measure comprehension. Combs (1975) developed sentence-combining exercises for a seventh grade experimental group and used both a standardized instrument and a cloze comprehension test which he devised to compare reading results between groups. Combs stated that:

The treatment did not differentially affect comprehension scores on the Gates MacGinitie test. A t-test comparison of the posttest group means on the comprehension test of the specially constructed reading measure showed that the experimental group scored significantly higher than the control group. (p. 1266-A)

In addition Combs reaffirmed the contention of other researchers that "standardized reading measures may not be sensitive to specific gains in reading comprehension" (p. 1266-A).

Hughes (1975) taught sentence-combining to 24 seventh graders. Three reading tests were administered following the treatment. A cloze test developed from a literature passage and a standardized test (Gates MacGinitie) rate and accuracy subtests were given. Analysis of the data revealed no significant differences between experimental and control groups. The third instrument administered was Goodman and Burke's Reading Miscue Inventory. Results from the grammatical strength section, an integration of corrections, grammatical acceptability and semantic acceptability revealed significant differences, indicating that the experimental group made significantly greater use of syntactic and semantic cues (Hughes, 1975). Among Hughes' conclusions from this study were that the cloze and standardized measures may not have been sensitive to gains in syntactic processing, or that the miscue inventory may not really measure comprehension gains. However the fact that some gain was noted led other researchers to further examine this phenomenon.

In 1973, another study was conducted by Fisher with fifth, seventh, and ninth grade students to determine if sentence-combining would increase the normal rate of growth in syntactic maturity and increase the level of comprehension. The experimental group received five weeks of sentence-combining practice including 12 transformation lessons. Students were asked to work board examples through oral discussion and were then given individual problems to complete in class. Some problems were assigned outside of class and discussed during the next class. Fisher intended to show that the students in this study could improve not only their use of syntactic structures in their writing but also their reading comprehension. To achieve this goal, he included additional instruction which involved a reading activity that was the reverse of sentence-combining. He based this instruction on the following assumption:

If writers can be taught to combine several kernel sentences into more mature complex sentences, then readers can be taught to reverse the process by separating mature complex sentences into kernel sentences of which they are composed.
(p. 42)

Near the end of the treatment, students were instructed in this activity using cloze passages. The reasoning behind using this procedure was stated in the premise that if readers were able to separate the complex sentences into kernel sentences, they might be able to identify more than one "key word" or cue that would signal the meaning of the sentence. Therefore, they would most likely make the correct word choice.

Fisher examined the comprehension ability of his students from results on the Stanford Paragraph Meaning Test, which he administered before and after treatment, and pre-post cloze paragraphs. These paragraphs were constructed with average t-unit lengths common to fourth,

eighth, and twelfth graders as identified by Hunt's data. Results of this study were as follows:

1. All experimental groups wrote more maturely as measured by t-unit.
2. The course was equally helpful to all grade levels.
3. The experimental groups read the Stanford Paragraph Meaning Test and the fourth grade syntactic maturity cloze test better than the control groups.
4. The experimental groups did not read the eighth and twelfth grade syntactic maturity cloze reading tests better than the control groups.

Fisher concluded from this study that the sentence-combining course taught in the present form "would not enable students to read better" (p. 85).

Phelps (1978) integrated two techniques, sentence-combining and reading instruction with eighth grade students to determine if both reading and writing could be improved. Pre and posttest writing samples were compared using t-unit analysis and a pre-posttest standard cloze passage was administered to assess gains in reading. No significant differences were noted between treatment groups on any of the variables.

A study of sentence-combining by Straw (1978) reported significant differences favoring the experimental group in writing and on one measure of reading comprehension. For five weeks approximately 40 students received instruction in sentence-combining while a similar group received instruction in written composition from a published text. Topics presented to the control group included prefixes, suffixes,

punctuation, and verb forms. On four measures of writing fluency, results of a t-unit analysis revealed that the experimental students' performances were significantly better than those of the control group. Furthermore, experimental and control groups' posttest scores on the standardized Nelson Reading Test and a researcher-designed cloze comprehension were compared. Results from the standardized instrument indicated no significant differences between groups. However, on the cloze instrument, the students who received sentence-combining instruction scored significantly higher than the control group. Sentence-combining instruction also had a significant effect over the textbook approach on a measure of listening comprehension. Straw defended the lack of significant differences on the standardized test with the claim that the instrument may not be as sensitive to gains as the cloze measure. Combs (1975) and Hughes (1975) made similar suggestions about the inadequacy of standardized instruments to reflect syntactic processing gains.

Callaghan (1977), Candal (1979), Howie (1979) and Sullivan (1977) all conducted investigations into the effects of sentence-combining practice on writing and reading. Sullivan's and Callaghan's investigations were primarily concerned with short and long term effects of sentence-combining on the syntactic and semantic fluency of compositions written by high school students. In addition, they tested for possible significant effects on reading scores as measured by pre and posttest standardized reading tests. Similar results were reported by both researchers indicating no significant gains in reading despite positive writing gains.

Both Candal and Howie investigated the effects of sentence-combining practice with ninth grade students. Candal constructed literature related sentence-combining activities for use with students over six weeks and compared posttest results of experimental and control groups on Form B of the Stanford Diagnostic Reading Test Level III and on a standard cloze test. No significant effects were noted.

Howie administered pre and post experimental writing tests and reading tests to 91 ninth graders instructed in sentence-combining over 15 weeks for 20 minutes a day. Lessons were taken from published sentence-combining texts. Compositions were assigned in two modes, descriptive and expository. Two compositions in each mode were assigned before and after treatment. A cloze instrument was constructed "on six passages graded five through fourteen" on the Gray Oral Reading Test passages, Form A and B. Two Likert attitude scales were given to determine attitudes toward writing and reading. The results were as follows:

1. A significant difference was found between groups in descriptive composition.
2. No significant difference was found in expository composition.
3. No significant reading differences were noted.
4. No significant differences were noted in attitudes between the groups.

Howie suggests that "the transfer of combining skills in writing to de-combining skills in reading should be studied further" (p. 1980-A).

Sentence-Reduction

Two research studies on sentence-combining, Hunt (1970) and Fisher (1973), reported improvement in reading as measured by a cloze test of comprehension. These investigations included a reverse sentence-combining procedure that involved separating text into grammatical chunks or kernel sentences. Hunt referred to this activity as sentence disassembly. Fisher instructed his students to analyze sentences within cloze passages by breaking the sentences down into kernels, though he gave no name to this procedure. Ney (1976) instructed college students in a similar activity which he referred to as "sentence-reduction." He found this method to be effective in improving the syntactic fluency of student compositions. Though based on similar theories, these three studies included different approaches to instruction. Hunt and Fisher devoted only part of the total instructional time to "sentence-reduction." Yet, it is possible that their positive results with regard to reading comprehension may have been a consequence of practice in sentence-decombining.

Sternglass (1976) projected that sentence-combining activities should be utilized for improvement in reading as well as writing. She theorized that as students became more familiar with constructions of more advanced sentence types than they were using, that their knowledge of the types would transfer to their reading. In order to facilitate this transfer, she suggested that sentence-combining for writing and sentence-decombining for reading be taught together. These inductive and deductive processes of sentence-combining had previously been suggested by Hunt. Research into the value of syntactic familiarity

in both reading and writing has shown it to be a necessary element for success in both language processes.

Fagan (1971) found that students had more difficulty understanding sentences and passages containing certain deletion and embedded transformations. He concluded from his research that if students could readily analyze structures and the relationships of the lexical items within the structures, that they would improve their understanding of written text. He suggested combining kernel sentences to compare with the author's material and breaking down complex sentences into component parts in an effort to increase students' facility with printed language structure (p. 170).

Sternglass claimed that "sentence types students are least likely to produce in writing are those most likely to present difficulty in reading comprehension" (p. 8). She developed a case for a structured program of integrated sentence-combining and sentence-reduction in a language arts curriculum. She proposed:

While they [teachers] are teaching students the process of the formation of more complex sentences [sentence-combining], that they take advantage of the opportunity to provide students with the techniques to read increasingly more complex sentences as well . . . the instructor can reinforce [reading and writing] skills for the students by letting them consciously work from one direction to the other: from analysis in reading [sentence-reduction] to production in writing [sentence-combining]. (p. 2, 10)

The implications of such a program as Sternglass suggested would be the potential for improvement in both language skills. Students could not only gain the capabilities for writing in a more syntactically mature style, but might also be better able to decipher more complex syntactical

structures that often decrease reading rate, fluency, and subsequently comprehension.

Straw (1978) examined the effects of sentence-combining and sentence-reduction as two separate manipulation activities using two experimental groups. Both groups were compared to a control group receiving instruction in written composition. Sentence reduction lessons were developed from the same sentences used in sentence-combining lessons. Sentences were introduced and students were asked to break them into separate kernel sentences. The initial lessons for both experimental groups were the same, where students were led to identify sentence parts. The writing instruments used were a syntactic maturity rewrite using two separate paragraphs--The Chicken developed by Hunt, and Cotton developed by Fisher. Two instruments were administered to measure comprehension. A cloze test of reading comprehension consisted of three passages at three levels of difficulty determined by t-unit length. A word choice list was given from which students could choose a response. A standardized reading measure, the Nelson Reading Test, was administered to all groups.

Sentence-combining had a significant effect over the textbook approach on a measure of listening comprehension and the cloze test of reading comprehension. Sentence-reduction also had a significant effect over the textbook approach on the cloze test. "Analysis of posttest scores on the standardized comprehension measure did not indicate a significant effect for any treatment" (Straw, 1978, p. 720-A). An attempt was made to control for semantic difficulties in the cloze test passages, however, since as Straw pointed out, vocabulary and other variables in standardized reading comprehension tests may prevent them from being good indices of students' increased syntactic processing abilities.

Research on the Cloze Test as a Measure
of Reading Comprehension

A cloze test consists of a reading passage in which words have been deleted. Subjects are usually instructed to write in the words that would best fit in the blanks. Responses are scored correct when they exactly match the deleted words. A maze is a cloze passage containing multiple choice selections for each blank. Though many kinds of cloze tests have been devised for a variety of purposes, the standard cloze has received recognition as a legitimate instrument for measuring comprehension. The standard cloze is constructed from a 250 word reading passage. The first and last sentences remain intact, while beginning with the second sentence, every fifth word is deleted and replaced by blanks of a standard length. Subjects are required to write the appropriate words in the blanks. The number of correct choices made determines the degree of comprehension.

The cloze test was originally conceived by Taylor in 1953. This test requires the student to use many of his reading skills and especially his syntactic knowledge to determine the passage meaning, attend to cues and select the most appropriate word choice. Research on the cloze procedure has included investigations of its use as a teaching tool, a determiner of readability, and a reading comprehension measure.

The investigations of Bormuth (1962, 1965), Fletcher (1955) and MacGinitie (1961) have established the cloze as a valid measure of reading comprehension (Bormuth, 1966, p. 83). Bormuth stated that the standard cloze test "measures skills closely related or identical to multiple choice reading comprehension tests" (1969, p. 364).

Examinations of the effect sentence-combining might have on reading comprehension have analyzed results from both standardized reading tests and cloze tests. Results from standardized measures have revealed no significant differences between students receiving sentence-combining treatment and the control groups. However, analyses of results from syntactic maturity cloze tests have indicated that sentence-combining may have a significantly positive effect on comprehension. Combs, (1975), Fisher (1973), and Straw (1978) found significant differences between groups when measuring comprehension with a specially constructed cloze instrument.

Since research has established the cloze as a legitimate comprehension measure, then it might be assumed that a variable such as syntactic processing ability is more detectable when measured by a cloze instrument. Both Combs and Straw have suggested that cloze tests might be more sensitive to syntactic gains.

In the following study it was decided that a standard cloze comprehension passage would be constructed and scored according to Bormuth's suggestions to measure the reading comprehension of the subjects, since research studies have identified the standard cloze as a valid measure of comprehension.

Summary

The need for integrating the language arts into a total language curriculum has been recognized by researchers and educators for many years. However, except for language experience programs, the integration of reading and writing has not been fully achieved. Correlational studies have suggested relationships between these language processes

and psycholinguistic research has led to the development and acceptance of Goodman's model of the reading process. This identification of the three information cueing systems, the graphophonic, syntactic, and semantic systems, has spurred investigations into the operation of these systems, their interrelatedness, and contributions to the total process of comprehension.

The importance of syntactic processing in the reading act is presently being more thoroughly examined. Theories supported by significant research studies lend strength to the proposition that syntactic processing is a relevant and necessary part of comprehension. Structures familiar to the reader have been found easier to comprehend and understanding of grammatical structures in texts has been found to contribute to greater reading fluency and comprehension.

Another contribution of psycholinguistic research has been the development and refinement of sentence-combining, a technique which has had the effect of improving student writing in numerous research studies. Although prior studies of other grammar instruction had offered no conclusive evidence that this instruction improved the maturity of student writing, sentence-combining utilizing the elements of transformational grammar succeeded in producing students who were able to write in a more mature and efficient manner.

Sentence-combining is recognized as a significant and beneficial activity which along with rhetorical instruction has made a viable contribution to the writing curriculum. Some researchers in this area have suggested that this practice involving the manipulation of syntactic structures might transfer to the students' abilities to process

these same grammatical structures while reading. Their studies have attempted to discover what effects sentence-combining might have on reading. Though teachers have had students manipulate grammatical structures for many years, this method has not been identified and researched until recently.

Results of these studies have not indicated conclusively whether transfer of sentence-combining skills to syntactic processing skills can be effectively implemented. Suggestions have been made by researchers that perhaps the sentence-combining activities should include sentence de-combining activities in an effort to relate the syntactic element to both language processes. Most recently "sentence reduction" has been found to improve writing and reading in separate studies. Results from these studies suggest a need for further research on the effects of this activity.

Since sentence-combining practice has improved student writing, and sentence-reduction practice has had a positive effect on both writing and reading, the integration of these two activities because of their interrelatedness could provide students with a greater understanding of both language processes and subsequently produce observable improvement in both reading and writing. The following research study has examined the effects of an integrated sentence-combining/sentence-reduction program on the writing maturity and reading comprehension of fifth grade students.

Chapter III

Design of the Study

Purpose

The purpose of this study was to investigate the effects of a structured sentence-combining/sentence-reduction program of instruction on the reading and writing performances of fifth grade students identified as average to above average in reading ability.

Hypotheses

Four null hypotheses were formulated to test the effectiveness of the sentence-combining/sentence-reduction program.

1. There is no significant difference between the mean post-treatment scores of the treatment and control groups on a measure of words per t-unit.

2. There is no significant difference between the mean post-treatment scores of the treatment and control groups on a measure of clauses per t-unit.

3. There is no significant difference between the mean post-treatment scores of the treatment and control groups on a measure of words per clause. The writing measure used to determine the first three hypotheses was t-unit analysis of student writing on a Syntactic Maturity Test.

4. There is no significant difference between the mean post-treatment raw scores of the treatment and control groups on a standard cloze test designed by the researcher.

Methodology

Subjects

The subjects consisted of 36 fifth-grade students from a middle class suburban elementary school. These students were identified as average to above average readers by their teachers and by a comprehension cloze test administered prior to treatment. The sentence-combining/sentence-reduction treatment group, which will be referred to as the s-c/s-r group, consisted of 18 students--seven boys and eleven girls. The control group was composed of an equal number of students with eight boys and ten girls.

Students were selected for each group on the basis of cloze test results. Students from three fifth grade homerooms were given a standard cloze comprehension test with a seventh grade readability according to the Fry readability formula. Their scores were ranked from 0-22 with one score of 30. The student with the high score was eliminated from the study because there was such a large difference between that score and the other scores. Students scoring below twelve were also eliminated since the majority of these students were classified as remedial readers. For this reason, the cut-off score was designated as twelve.

It was further observed that about half the students scored between 12 and 16. The majority of those students were identified by their teachers as average readers. The majority of readers scoring between 17 and 22 were identified as being above average in reading. Therefore, the students scoring between 12 and 22 were considered average to above average readers.

Once this average to above average group was identified, 18 students from this group were randomly chosen to receive s-c/s-r treatment. An equal number of students were randomly chosen for a control group. The treatment and control groups were composed of an equal number of students with reading abilities ranging from average to above average.

Results from a Syntactic Maturity Test (Hunt, 1977), administered before treatment was begun, established that these groups were not significantly different in their writing maturity at the start of the experiment. This test was also used as a posttreatment measure of writing maturity.

Instruments

The following tests were given to compare posttreatment achievement levels for the experimental and control groups.

1. The Syntactic Maturity Test was given in order to rate the writing maturity of the subjects following treatment. The paragraph chosen was "The Chicken" which was developed by Hunt (1977) for use with elementary students and later used by Straw (1978). This paragraph, similar to the commonly used "Aluminum" passage developed by Hunt and O'Donnell (1970), consists of short, choppy kernel sentences. Students were instructed to rewrite the paragraph in a better way without changing the meaning. Treatment and control group results were then compared on three factors of syntactic maturity as outlined by Hunt (1965) in his description of t-unit analysis.

2. A standard cloze test was developed by this investigator for use as a posttreatment comparison of the reading comprehension of experimental and control groups. A passage of approximately 250 words was constructed based on a published fictional narrative, A Horse Came Running (1975). This selection was chosen because of its more complex syntactical constructions and familiar vocabulary, as well as for its subject matter and interest. Revisions in syntactical constructions were made in some cases to allow for a gradual increase in syntactic difficulty. Two factors determining the difficulty of the sentence constructions were t-unit length and clauses per t-unit. The average number of words per t-unit for the entire passage was 10, although sentences ranged from 4 to 27 words per t-unit. Constructions included in the passage were: (a) adjective, adverb, participle, gerund, and infinitive phrases, (b) compound subjects and predicates, (c) the inverse transformation, (d) adjective and adverbial clauses.

The cloze test was untimed and students were encouraged to guess if necessary to fill in all of the blanks. Only exact responses were scored correct except for some blanks where alternate choices were accepted. These alternate responses were determined before issuance of the test. Student scores were compared according to the number of correct responses given.

Procedure

As was previously mentioned, the selection procedure resulted in two groups of 18 fifth-grade students identified as average to above average readers. The treatment and control groups were determined to

be equal in both reading and writing ability. Results from the writing test and cloze test revealed no significant differences between these groups in either skill.

Students receiving sentence-combining/sentence-reduction treatment were instructed in a separate classroom during their normally scheduled language arts period. These instructional sessions lasted approximately one-half hour three times a week for six weeks approximating nine total hours of instruction. Testing took place before and after this instructional period.

The large group of 18 treatment subjects was divided into groups of nine students which met at different times due to scheduling convenience. The control group remained in the regular classroom. Language arts tasks were required equally of both the treatment and control students, although the control students were given more time to complete the tasks and more individual attention in their reading while the treatment groups were absent. The treatment group continued to receive the same lessons as the control group. Extra time was allotted during the day for completing these tasks. The following topics were covered by their language arts class during the six weeks of s-c/s-r treatment.

1. Comprehension
2. Vocabulary
3. Oral Reading
4. Writing Letters
5. Verb Patterns and Forms
6. Prepositions and Prepositional Phrases
7. Outlining
8. Pronoun Forms
9. Commas
10. Research Skills
11. Creative Writing--one story per week

Both groups received similar instruction in the above topics from one of two teachers. In addition the treatment group received instruction and practice in both sentence-combining/sentence-reduction.

No sentence manipulation activities were given to either group during their regular language arts instruction over these weeks.

The structured program of sentence-combining/sentence-reduction was developed and taught by this researcher. Lessons were modeled after the exercises used by Straw (1978) and Perron (1974). An attempt was made to choose sentences of interest to the students. Sentences were also taken from a social studies reference text that these fifth graders were using. At times, sentences were chosen to coincide with the topic being covered. Student-composed sentences were also used in some exercises.

In the first lessons, students were introduced to sentences, non-sentences, and sentence parts. They were led to combine sentence parts as well as separate them. Succeeding lessons were divided into two sections. In the first section, students were asked to combine or transform sentences and in the second, they were asked to reverse the procedure. Different sentences were given in the two sections so that the method of attack would not be too obvious. The following is an example of both kinds of exercises in the same lesson.

Part I Directions: Add the underlined words from the second (and third) sentences to the first sentence to make it longer.

The bird flew out the window.

The bird was blue

The window was open.

Answer: The blue bird flew out the open window.

Part II Directions: Separate the following sentences into two or more sentences including the underlined words.

A strong wind blew the sleek sailboat through the rough water.

Answer: A wind was strong.

The sailboat was sleek.

The water was rough.

The previous exercises came from the lesson on adjective embedding. Altogether, there were 16 lessons covering 12 transformations. Oral and written exercises were alternated. Students discussed options at the beginning of each part of the lesson. They were then instructed to work the rest through quietly before discussing possible answers. No additional assignments were given. In an attempt to cover as many transformations as possible, lessons moved along quickly with little time for review. Most of the work was written on worksheets which were kept in the students' individual folders. Sample lessons are included in Appendix A.

Some additional activities were included to add variety and to provide reinforcement. Students were given cards with sentences to combine or reduce. They worked in groups of two or three in competition with each other to complete the most cards. Scrambled sentence words were given to the students in plastic bags and numbered. Students chose a bag and attempted to piece the sentences together. Many of these referred to popular TV shows. Students seemed to enjoy the challenge of this activity.

Journals were constructed for each student and periodically they were asked to write about something they did or observed. They often volunteered to share their writing which usually totalled no more than two or three sentences.

Daily work was corrected in class with student discussion of possible answers. All students worked together on the same worksheets every day. Though the high average reading treatment group sometimes completed lessons more quickly, toward the end of the treatment, the average group began to have less difficulty and finished the treatment only one lesson behind the higher level group.

Signals similar to those used by O'Hare (1971) were used throughout the sentence-combining part of the program. When combining sentences, students were encouraged to utilize signal words in their constructions. Students used their basic language knowledge and understanding of the sentence in deciding on their structural organization. When they were given a sentence to separate into kernels, they were instructed to cue into punctuation such as commas, as well as the signal words they had already used. In this way, they gained experience in cueing into phrase and clause chunks within the sentence.

Upon completion of the six-week instructional period, students in both treatment and control groups were tested with a writing maturity test and a specially designed standard cloze test.

Statistical Analyses

Results from both measures were analyzed using t tests to determine the significance at .05 level. The posttreatment writing scores on

three factors of syntactic maturity were analyzed using a t test for independent means. The scores of the standard cloze measure were compared using a t test for independent means.

Summary

This study was conducted to assess whether or not a structured sentence-combining/sentence-reduction program could have a positive effect on the writing and reading skills of fifth grade students. Procedures were developed with the intent of relating the activities of combining sentences in writing to decombining sentences in reading. Sentence-reduction was included as an integral part of the program. These activities gave students practice in language production and reception while manipulating syntactical structures. It has been asserted by researchers that syntactic maturity in writing and reading is an important component for success in each area. This program of instruction was devised to improve the syntactic maturity of the treatment subjects both in writing and reading. Analysis of reading and writing test scores were conducted using t tests for independent means to determine if this was accomplished.

Chapter IV

Analysis of the Data

Purpose

The purpose of this study was to investigate the effects of a structured sentence-combining/sentence-reduction program on the writing and reading comprehension of fifth grade students.

Findings and Interpretations

This study was designed to test the effectiveness of teaching a structured sentence-combining/sentence-reduction program to fifth graders with average to above average reading ability. Assessment of student performance in these areas was accomplished using a syntactic maturity rewrite instrument and a researcher designed standard cloze comprehension test of reading comprehension. Two null hypotheses were formulated to test the results of instruction with this program.

Writing--Syntactic Maturity

The first three hypotheses were to determine whether the treatment group, as a result of sentence-combining/sentence-reduction instruction, attained significantly higher mean scores on three measures of syntactic writing maturity. Analyses were applied to the students' writing after they were given a paragraph rewriting task. These analyses were performed according to the guidelines established by Hunt (1965). Three factors of syntactic maturity were examined. The three hypotheses were as follows:

1. There is no significant difference in the posttreatment mean number of words per t-unit between the fifth grade treatment group and the fifth grade control group.
2. There is no significant difference in the posttreatment mean number of words per clause between the fifth grade treatment group and the fifth grade control group.
3. There is no significant difference in the posttreatment mean number of clauses per t-unit between the treatment group and the control group.

A t test for independent means was used to analyze the data for the fifth grade treatment and control groups. Tables 1, 2, and 3 show the data for these groups for each of three factors of syntactic writing maturity.

Table 1
Posttreatment Mean Raw Scores
Words/t-unit

Group	Mean Raw Score	Standard Deviation
Treatment	7.53	1.61
Control	5.85	1.28
<u>t</u> value	3.5*	
<u>t</u> crit (34)	2.03	

*p < .05

The difference between the mean raw scores for both groups in words/t-unit was significant at the .05 level of significance.

Table 2
 Posttreatment Mean Raw Scores
 Clauses/t-unit

Group	Mean Raw Score	Standard Deviation
Treatment	1.14	.085
Control	.985	.070
<u>t</u> value	7.04*	
<u>t</u> crit ⁽³⁴⁾	2.03	

* $p < .05$

The difference between the mean raw scores of both groups in clauses/t-unit was significant at the .05 level of significance.

Table 3
 Posttreatment Mean Raw Scores
 Words/Clause

Group	Mean Raw Score	Standard Deviation
Treatment	6.67	1.35
Control	6.32	.97
<u>t</u> value	.895	
<u>t</u> crit ⁽³⁴⁾	2.03	

$p > .05$

The difference between the mean raw scores of the treatment and control groups in words/clause was not great enough for significance. Though no significant difference occurred between the groups in words/

clause, significant differences were found in the first two factors of writing maturity.

Reading Comprehension

The final hypothesis was to determine whether the treatment group, as a result of sentence-combining/sentence-reduction instruction, attained significantly higher mean scores on a researcher designed standard cloze measure of reading comprehension. Student raw scores from this test were compared based on the following null hypothesis:

4. There is no significant difference in the posttreatment mean raw scores of the fifth grade treatment group and the fifth grade control group on a specially designed cloze test of comprehension.

A t test for independent means was used to analyze the data for the fifth grade treatment and control groups. Table 4 shows the data for the mean raw scores of the two groups.

Table 4
Comprehension Cloze Raw Scores

Group	Mean Raw Score	Standard Deviation
Treatment	27.55	4.88
Control	22.39	5.32
<u>t</u> value	3.03*	
<u>t</u> crit (34)	2.03	

*p < .05

The difference between the mean raw scores of the treatment and control groups was significant at the .05 level of significance. The second null hypothesis was rejected. Significant differences were found between the treatment and control groups on the cloze measure of comprehension.

Summary

In this study, four null hypotheses were formulated and tested at the .05 level of significance. Three of these hypotheses referred to posttreatment writing performance and the fourth hypothesis referred to posttreatment reading performance. Analysis of the data using t tests for independent means revealed that instruction in sentence-combining/sentence-reduction had an observable positive effect on two factors of writing maturity and reading comprehension as measured by a cloze test of comprehension.

Three of the four null hypotheses were rejected. The fifth grade treatment group wrote significantly more words per t-unit and clauses per t-unit than the control group. The fifth grade treatment group scored significantly higher on the comprehension cloze test. No significant difference was noted between the posttreatment scores of both groups on the number of words per clause.

Results of this analysis indicate that sentence-combining/sentence-reduction instruction did have a positive effect on both the writing and reading comprehension of the average to above average fifth graders in this study.

Chapter V

Conclusions and Implications

Purpose

The primary purpose of this study was to examine the effects of an integrated program of sentence-combining and sentence-reduction on the writing and reading comprehension of fifth grade students. Experimental and control group performance on a rewriting assignment was examined using t-unit analysis to determine gains in syntactic maturity. Results from a researcher designed cloze test were compared to determine any significant differences between the experimental and control group.

Conclusions

Results of this study have led to the following conclusions:

1. Instruction and practice in a sentence-combining/sentence-reduction program apparently encouraged fifth grade students to write longer t-units and more clauses than their counterparts who did not receive such instruction.
2. Instruction and practice in a sentence-combining/sentence-reduction program did not seem to be effective in significantly increasing the number of words per clause in the writing of the treatment subjects.

Results of studies by Hunt (1965) and O'Donnell (1967) have suggested that the best index of syntactic maturity is t-unit length. In calculating words per clause, a larger number of clauses produces

a smaller ratio. When comparing two groups rather than measuring one group's gains, it would appear to be an advantage to write fewer clauses. It is suggested that in a study designed to compare posttreatment results of two different groups, this may not be a relevant index at the fifth grade level.

3. Instruction and practice in a sentence-combining/sentence-reduction program apparently enabled fifth grade students with average to above average reading ability to score significantly higher on a cloze test of comprehension than the control students of similar ability.

4. A program incorporating both writing and reading instruction resulted in improvement in both areas.

Limitations

There are some limitations of this study which must be considered when interpreting the results. In order to avoid interruption of the teachers' instructional program, the researcher conducted the treatment and administered the posttreatment tests. As a result, the students were not instructed in their regular classroom environment. The treatment groups were composed of ten students compared to most classes of 20 to 30 students. This allowed for individual assistance and greater participation than might occur in a larger group. The results of this study are applicable only to average and above average readers in fifth grade and do not necessarily apply to students in higher or lower grades or students of below average reading ability.

Implications for Research

The results of this research suggest that further examination of sentence-combining, sentence-reduction, or an integration of the two procedures and their effects on reading comprehension is warranted.

Further research might examine the sentence-combining/sentence-reduction program as taught by the students' teachers as a part of the curriculum with larger groups of students.

Examination of the integrated program could be conducted with below average fifth grade readers and all readers of other grade levels.

A comparison of three treatment groups with each other and with a control group could be conducted. Treatment groups could consist of one receiving sentence-combining, another receiving sentence-reduction similar to Straw's (1978) study, and a third treatment group receiving integrated instruction. Writing and reading performances of the four groups could be compared to determine which treatment, if any, would produce greater gains.

A need appears to exist for comparisons of the cloze test of comprehension and standard reading test scores, to determine whether cloze tests are more sensitive to syntactic maturity gains in reading as suggested by Combs (1976) and others. Standardized tests could be analyzed to determine the emphasis placed on syntactic and semantic understanding. Paragraphs could also be analyzed using t-unit analysis to determine whether increased comprehension of longer t-units and clauses within the t-units could positively affect standardized test scores.

Investigations into these areas may reveal more about the comprehension process as well as the ongoing research into the syntactic and semantic components of reading comprehension. More information may be obtained about the evaluation measures of this process. Results of these analyses may indicate to what degree improvement in syntactic reading maturity could effect standardized test scores.

Studies of greater length involving more than one instructor may provide further support for the use of a structured sentence-combining/sentence-reduction program.

Implications for Classroom Practice

A structured sentence-combining/sentence-reduction program appears to be an effective method for improving both writing and reading skills for average and above average readers at the fifth grade level.

Sentence-combining has been verified by numerous research studies as an effective method for improving the maturity of student writing at all levels. This method is especially useful at a time when students are beginning to read longer and more complex sentence structures at the intermediate level. Since students are capable of producing most structures in their writing but often fail to do so, a sentence-combining program could encourage them to use these structures in their writing. With sentence-reduction exercises included, students may see how the sentence structures they are reading could have been constructed.

This method of teaching writing and reading could be related to any given content area by choosing direct sentences from these texts or constructing sentences from content material.

The most useful purpose for sentence-combining appears to be in rewriting compositions. In an effort to get thoughts on paper, students may sacrifice good sentence structures. But assigning them to rewrite their own sentences gives them an opportunity to use their sentence-combining skills.

With the inclusion of sentence-reduction in a sentence-combining program, students may acquire a more thorough understanding of all the language processes. It could be a step forward in making students total communicators.

As O'Hare (1971) has cautioned, sentence-combining is a useful supplement to a rhetorical writing program. Its value may be increased with the inclusion of sentence-reduction since students may also continue to strengthen their reading skills.

Summary

It was concluded that instruction and practice in sentence-combining and sentence-reduction enabled fifth grade average readers to write more mature sentences and achieve significantly higher comprehension scores than control group students not exposed to the treatment program. Treatment group subjects wrote a significantly greater number of words per t-unit and clauses per t-unit. The treatment group's mean number of words per clause was not significantly greater.

Suggestions for further research include the comparisons of the integrated program with those of sentence-combining or sentence-reduction alone. This investigation may suggest which program produces greater gains.

There appears to be a need for further investigation into tests of comprehension including standardized and cloze tests. An examination of the emphasis each of these tests places on syntactic and semantic knowledge may present some explanation of why cloze tests seem to indicate syntactic gains when standard reading tests do not. Also it could be determined to what extent improvement in syntactic reading maturity would be revealed on a standardized test.

Results from this study suggest that an integrated sentence-combining/sentence-reduction program may be valuable in the classroom, since gains may be realized in both writing and reading skills. Further research in this area is warranted.

References

References

- Artley, S. A., Hildreth, G., Townsend, A., Beery, A., & Dawson, M.
Interrelationships among the language arts: A research bulletin
of the National Council of Teachers of English. Urbana, Ill.:
National Council of Teachers of English, 1954.
- Bateman, D., & Zidonis, F. J. The effect of a study of transformational
grammar on the writing of ninth and tenth graders. Urbana, Ill.:
National Council of Teachers of English, 1966.
- Bebensee, E. L. The relationship between inner city fifth graders
reading comprehension and writing achievement. Dissertation Abstracts
International, 1977, 38, No. 8, 4409A-5094A.
- Belanger, J. F. Reading skill as an influence on writing skill. Edmonton,
Alberta: University of Alberta, 1978. (ERIC Document Reproduction
Service No. ED 163 409)
- Bivens, W. P. III, Edwards, A. B. Transformational grammar and writing
improvement. Paper presented at the annual meeting of the Conference
on College Composition and Communication, Anaheim, California, 1974.
(ERIC Document Reproduction Service No. ED 101 361)
- Borgh, E. M. The case for syntax. Elementary English, 1965, 42, 28-35.
- Bormuth, J. R. Cloze tests as a measure of comprehension ability and
readability. (Unpublished doctoral dissertation, Indiana University,
1962). Dissertation Abstracts, 1963, 23, 3569-4806.
- Bormuth, J. R. Comparisons among cloze test scoring methods. In J. A.
Figurel (Ed.), Reading and inquiry. Newark, Delaware: International
Reading Association, 1965.

- Bormuth, J. R. Readability: A new approach. Reading Research Quarterly 1966, 1, No. 3, 79-132.
- Bormuth, J. R. Factor validity of cloze tests as measures of reading comprehension ability. Reading Research Quarterly, 1969, 4, 358-365.
- Braddock, R., Lloyd-Jones, R., & Shoer, L. Research in written composition. National Council of Teachers of English, 1963. (ERIC Document Reproduction Service No. 003 374)
- Callaghan, T. F. The effects of sentence-combining exercises on syntactic maturity, quality of writing, reading ability and attitudes of ninth grade students. (Doctoral dissertation, SUNY Buffalo, N.Y., 1977). Dissertation Abstracts International, 1978, 39, No. 2, 513A-1162A.
- Candal, P. E. T. An investigation of the effects of sentence-combining practice on the reading comprehension of ninth grade students. (Doctoral dissertation, University of South Carolina, 1979). Dissertation Abstracts International, 1979, 40, 6045A-6455A.
- Carroll, J. P. Language development. In C. W. Harris (Ed.), Encyclopedia of educational research. New York: Macmillan, 1960.
- Combs, W. E. Further effects and implications of sentence-combining exercises for the secondary language arts curriculum. (Doctoral dissertation, University of Minnesota, 1975). Dissertation Abstracts International, 1975, 36, 1133A-2458A.
- Combs, W. E. Further effects of sentence-combining practice on writing ability. Research in the Teaching of English, 1976, 10(2), 137-149.
- Combs, W. E. Sentence combining practice aids reading comprehension. Journal of Reading, 1977, 21, 18-24.

- Chomsky, N. Syntactic structures. The Hague, Netherlands: Mouton Publishers, 1957.
- Daiker, D., Derek, A., & Morenberg, M. Sentence-combining and syntactic maturity in freshman English. College Composition and Communication, 1978, 29, 36-41.
- de Beugrande, R. The psychology of language and the teaching of English. Paper presented at the annual conference on College Composition and Communication, Minneapolis, Minnesota, 1979. (ERIC Document Reproduction Service No. ED 162 300)
- Fagan, W. T. Transformation and comprehension. The Reading Teacher, 1971, 25, 169-172.
- Fisher, K. D. An investigation to determine if selected exercises in sentence-combining can improve reading and writing. (Doctoral dissertation, Indiana University, 1973). Dissertation Abstracts International, 1974, 34, 4479A-6169A.
- Fletcher, J. E. A study of the relationships between ability to use context as an aid in reading and other verbal abilities. (Doctoral dissertation, University of Washington, 1955). Dissertation Abstracts, 1955, 15, 1691-2609.
- Fusaro, J. A. More support for the value of context in reading without vowels. Journal of Reading, 1978, 21, 317-320.
- Galcher, M. The effects of syntactic training upon reading performances of junior high school students. New Brunswick, New Jersey: Rutgers University, 1976. (ERIC Document Reproduction Service No. ED 123 625)
- Goodman, K. S. A linguistic study of cues and miscues in reading. Elementary English, 1965, 42, 639-643.

- Goodman, K. S. Analysis of oral reading miscues: Applied psycholinguistics. Reading Research Quarterly, 1969, 2, 9-30.
- Goodman, K. S. Decoding: From code to what? Journal of Reading, 1971, 14, 455-62.
- Green, E. An experimental study of sentence-combining to improve written syntactic fluency in fifth grade children. (Doctoral dissertation, Northern Illinois University, 1972). Dissertation Abstracts International, 1972, 33, 3276A-4117A.
- Guthrie, J. T., & Tyler, S. J. Psycholinguistic processing in reading and listening among good and poor readers. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, Calif., 1976. (ERIC Document Reproduction Service No. ED 120 689)
- Hatfield, W. W. An experience curriculum in English. Chicago: The National Council of Teachers of English, 1935.
- Hatfield, W. W. Humanizing the language arts. Elementary English, 1965, 42, 673-678.
- Heil, H. F. The development of selected language variables in two modes of writing and their relationship modes of writing and their relationship to reading comprehension in the primary grades. (Doctoral dissertation, Hofstra University, 1976). Dissertation Abstracts International, 1976, 38, No. 1, 1-519.
- Holmes, M. F. Syntactic processing. In M. A. Just & P. A. Carpenter (Eds.), Cognitive processes and comprehension. Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1977.

- Howie, S. M. A study: The effects of sentence-combining practice on the writing ability and reading level of ninth grade students. (Doctoral dissertation, University of Colorado, 1979). Dissertation Abstracts International, 1979, 40, 1723A-2306A.
- Hughes, T. O. Sentence combining: A means of increasing reading comprehension. Michigan: Western Michigan University, 1975. (ERIC Document Reproduction Service No. 112 421)
- Hughes, T. O. Syntactic maturity in children's writing: A cross cultural study. Kalamazoo, Michigan: Western Michigan University 1978. (ERIC Document Reproduction Service No. 163 478)
- Hunt, K. W. Early blooming and late blooming syntactic structures. In C. R. Cooper & L. Odell (Eds.), Evaluating writing: Describing measuring, judging. Urbana, Illinois: National Council of Teachers of English, 1977.
- Hunt, K. W. Grammatical structures written at three grade levels. Urbana, Illinois: National Council of Teachers of English, 1965.
- Hunt, K. W., & O'Donnell, R. An elementary school curriculum to develop better writing skills. Tallahassee, Florida: Florida State University, 1970. (ERIC Document Reproduction Service No. ED 150 108)
- Loban, W. Language ability: Grades seven, eight, and nine. Washington: U.S. Government Printing Office, 1966.
- Loban, W. Language ability: Grades ten, eleven, and twelve. Washington: U. S. Government Printing Office, 1967.
- Loban, W. Language development: Kindergarten through grade twelve. Urbana, Illinois: National Council of Teachers of English, 1976.

- Loban, W. D. The language of elementary school children. Urbana, Illinois: National Council of Teachers of English, 1963.
- MacGinitie, W. H. Contextual constraints in English prose paragraphs. Journal of Psychology, 1961, 51, 121-130.
- Mellon, J. C. Transformational sentence combining: A method for enhancing the development of syntactic fluency in English composition. Urbana, Illinois: National Council of Teachers of English, 1969.
- Menyuk, P. Sentences children use. (Research Monograph No. 52). Cambridge, Mass.: The MIT Press, 1969.
- Miller, B. D., & Ney, J. W. The effect of systematic oral exercises on the writing of fourth grade students. Research in the teaching of English, 1968, 2, 44-61.
- Ney, J. W. A comparison of reading miscues and writing miscues. Tempe, Arizona: Arizona State University, 1975. (ERIC Document Reproduction Service No. 161 009)
- Ney, J. W. The hazards of the course: Sentence-combining in freshman English. The English Record, 1976, 27, 70-77.
- O'Donnell, R. C. On linguistic structure and reading comprehension. Paper presented at the annual meeting of the National Conference on Language Arts in the Elementary School, Atlanta, 1976. (ERIC Document Reproduction Service No. ED 123 592)
- O'Donnell, R. C., Griffin, W. J., & Norris, R. C. Syntax of kindergarten and elementary school children: A transformational analysis. Research report No. 8. Champaign, Ill.: National Council of Teachers of English, 1967.

- O'Hare, E. Sentence-combining--Improving student writing without formal grammar instruction. Urbana, Ill.: National Council of Teachers of English, 1971.
- Pearson, P. D., & Johnson, D. D. Teaching reading comprehension. New York: Holt, Rinehart and Winston, 1978.
- Pederson, E. L. Frontiers of sentence-combining research. Ogden, Utah: Weber State College, 1979. (ERIC Document Reproduction Service No. ED 178 909)
- Perron, J. D. Beginning writing: It's all in the mind. Language Arts, 1976, 53(6), 652-657.
- Perron, J. D. An exploratory approach to extending the syntactic development of fourth grade students through the use of sentence combining methods. (Doctoral dissertation, Indiana University, 1974). Dissertation Abstracts International, 1975, 35, No. 7, 3941A-4750A. (University Microfilms No. 75-1744)
- Phelps, S. F. The effects of integrating sentence-combining activities and guided reading procedures on the reading and writing performances of eighth grade students. (Doctoral dissertation, Syracuse University, 1978). Dissertation Abstracts International, 1978, 40, 1A-503A.
- Ruddell, B. The effect of oral and written patterns of language structure on reading composition. The Reading Teacher, 1965, 18, 270-275.
- Simons, H. D. Linguistic skills and reading comprehension (DHEW Bureau No. BR-9-A-078, Grant OEG-1-70-004) (509) Washington, D.C. Office of Education, Bureau of Research, 1970. (ERIC Document Reproduction Service No. ED 047 927)
- Smith, F. Psycholinguistics and reading. New York: Holt, Rinehart and Winston, 1973.

Smith, W. L. The effects of transformed syntactic structures on reading.

University of Georgia, 1970. (ERIC Document Reproduction Service No. ED 044 277)

Sternglass, M. S. Composition teacher as reading teacher: Linguistics

is the bridge. Paper presented at the annual meeting of the conference on College Composition and Communication, Philadelphia, Pa., 1976. (ERIC Document Reproduction Service No. ED 120 782)

Stotsky, S. Sentence combining as a curricular activity: Its effect on written language development and reading comprehension. Research in the Teaching of English, 1975, 9, 30-71.

Straw, S. B. An investigation of the effect of sentence combining and sentence reduction instruction on measures of syntactic fluency, listening comprehension and reading comprehension of fourth grade students. (Doctoral dissertation, University of Minnesota, 1978). Dissertation Abstracts International, 1979, 40, No. 2, 505A-1120A. (University Microfilms No. 79-18398)

Strickland, R. G. The language of elementary school children: Its relationship to the language of reading textbooks and quality of reading of selected children. (Bulletin of The School of Education). Bloomington, Indiana: Indiana University, 1962.

Sullivan, M. The effects of sentence combining exercises on syntactic maturity, quality of writing, reading ability, and attitude of students in grade eleven. (Doctoral dissertation, SUNY Buffalo, N.Y., 1977). Dissertation Abstracts International, 1978, 39, No. 3, 1163A-1884A.

- Takahashi, B. L. Comprehension of written syntactic structures by good readers and slow readers. New Brunswick, New Jersey: Rutgers University, 1975. (ERIC Document Reproduction Service No. ED 117 655)
- Tatham, S. M. Reading comprehension of materials written with select oral language patterns: A study at grades two and four. Reading Research Quarterly, 1970, 3, 402-426.
- Taylor, W. L. Cloze procedure: A new tool for measuring readability. Journalism Quarterly, 1953, 30, 415-533.
- Thomas, F. L. The extent of the relationship between reading achievement and writing achievement among college freshmen. (Doctoral dissertation, University of South Carolina, 1976). Dissertation Abstracts International, 1976, 37, No. 10, 6111A-6806A.
- Tovatt, A. L., & Miller, E. L. Oral-aural visual stimuli approach to teaching written composition to ninth grade students. Report No. BR-5-0398, Muncie, Indiana: Burriss Laboratory School, Ball State University, 1967. (ERIC Document Reproduction Service No. ED 163 409)

Appendix A
Sample Lessons

Appendix A

Sample Lessons

1. _____ shoe on top S
 2. _____ I can't go skating NS
 3. _____ when she comes home SP
 4. _____ tree over see the
 5. _____ plan ahead
 6. _____ safe is boy there
 7. _____ will stay home
 8. _____ the boy with his hood up
 9. _____ watch out
 10. _____ the plan overhead
-
-
-
-
-
-
-
-
-
-
-

In the following exercises, there are six sentence parts that can be matched up to make three complete sentences. Match up the sentence parts and write the complete sentences on the lines below each exercise. The first one has been done for you.

1. my mother has midgets and fat ladies the circus
 that snow does not know I did it is two feet high
- a) My mother does not know I did it
 b) The circus
 c) _____
2. flew on by Janie stomped into the puddle the gas station
 the principal is closed on Sunday the frisbie
- a) _____
 b) _____
 c) _____
3. the boys the helicopter everything
 flew over the house ran up the street to Ken's house was easy
- a) _____
 b) _____
 c) _____

Break up the three following sentences into their sentence parts.

4. a) The parachute opened in time.
 b) John stepped out the door.
 c) The tires hit the bump in the road.

Read the following groups of words. In front of each group place NS if the group of words is a complete sentence.
SP if the group of words is a non-sentence.

1. _____ book to dip spring fuzzy and wool
2. _____ the policeman pulled me over
3. _____ the policeman in front of the school
4. _____ was watching the television again
5. _____ go ahead and ride
6. _____ the stranger became very friendly
7. _____ away most of the day
8. _____ most of the children dropped out of school early
9. _____ stopped at the snack shop on the way home
10. _____ for some cake you come in will
11. _____ a few small lizards are found in Hawaii
12. _____ the heart pump that beats
13. _____ try this test
14. _____ the cars sped by so fast
15. _____ something even more terrible happened
16. _____ what a basketball player
17. _____ George Washington, our first president
18. _____ many flowers seem to wilt early
19. _____ entered the art contest at school
20. _____ against a tree and turned over

Change the following sentences to mean the opposite by adding "not" or "n't"

1. You have thrown out that junk.

2. I did do the homework.

3. The neighbors have seen the dog.

4. A girl was crossing the lake in a canoe.

5. Do set the barn on fire.

Change the following sentences to mean the opposite by removing "not" or "n't"

1. It wasn't cold outside.

2. My cold is not worse today.

3. I couldn't find my homework.

4. I didn't sleep very well.

5. My foot did not fall in the mud.

Write a sentence with "not" or "n't". Then change the sentence to mean the opposite by removing "not" or "n't".

Change each of the following sentences into a question. Be sure to look at the end of the sentence to find out which question marker to use.

1. Someone was hiding in the bushes. (Who - Q)

2. He put the paint cans somewhere. (Where - Q)

3. They carried the piano in somehow. (How - Q)

4. The castaways will climb to the top of the mountain somehow. (How - Q)

5. Something made that loud noise. (What - Q)

6. Someone almost killed my dog. (Who - Q)

The following are questions. Change each one to a statement using someone, somewhere, somehow, or something.

1. Who stayed after school for basketball practice?

2. Where did you find the bat?

3. How will he deliver those papers?

4. When did the cat come into the house?

5. What made him afraid of the dark?

Add the underlined words from the second (or third) sentences to the first sentence to make it longer.

1. Amy slowly walked her puppy home.

The puppy was happy.

2. Jeremy and I made a cake for Mom's birthday.

The cake was chocolate.

3. He and Sammy ate the peach on the counter.

The peach was sour-tasting.

4. Gordon broke his pencil in two places.

The pencil was his favorite.

5. The bird flew out the window.

The bird was blue.

The window was open.

Separate the following sentences into two or more sentences including the underlined words.

1. The shiny red, ten-speed bicycle was for sale.
-
-
-
-

2. A strong wind blew the sleek sailboat through the rough water.
-
-
-
-

On the lines at the right, tell how many things (events) happened in the sentences. (How many basic sentences can you find?)

1. She was eating breakfast and began to feel sick. _____
2. The teacher announced the quiz and handed out the papers. _____
3. The slaves rebelled, overthrew their masters, and ran away to freedom. _____
4. The candles lighted the table with a soft glow. _____
5. Fonzie turned off his motorcycle, walked into the house, saw the family eating dinner, and pulled up a chair. _____
6. The missionaries taught the Indians how to plow their fields and irrigate (water) their crops. _____
7. The car skidded, turned over and landed in a ditch. _____
8. The old abandoned building burned down. _____
9. The burglars carried the television out of the house, lifted into their van, returned to the house and carried out the stereo. _____
10. Laverne heard the noise, raced through the door, saw the burglar, slipped on the throw rug, and slid down the stairs. _____

Combine the following sentences. Note the signal at the end of each sentence.

1. During the summer, the janitors moved the desks.

They swept the floor. (,)

They painted the room. (,AND)

2. Last week, a storm blew in.

It dumped rain. (,)

It threw down hail for hours. (,AND)

3. When we got home, we played ball.

We went swimming. (,)

We finally did our homework. (,AND)

4. The doctor checked my throat.

He gave me a shot. (,)

He presented the bill to my mother. (,AND)

Change the following into basic sentences. Hint: Look for commas, and and's.

1. The children smiled and waved at us.

2. In the spinning room, the machine spins yarn and winds it on bobbins.

3. The young Indian spotted the horse, turned around quickly and raced up the path.

Combine the following sentences

1. Karen drove home in the convertible.
Ricky drove home in the convertible. (AND)

-
2. The boy scouts enjoyed the picnic.
The girl scouts enjoyed the picnic. (,)
Their parents enjoyed the picnic. (,AND)

-
3. Bats were found in the old abandoned shack in the woods.
Rats were found in the old abandoned shack in the woods. (,)
Snakes were found in the old abandoned shack in the woods. (,AND)

Change the following into basic sentences.

1. Mork and Mindy found the treasure map in the old pop can.

-
2. R2D2, Chewbacca, and Hans Solo guarded the spaceship and kept watch for the aliens.
-
-
-
-
-

Combine the following sentences.

1. Karen said SOMETHING.

She wasn't going to the game Friday. (JUST JOIN)

2. I know SOMETHING.

Sharks have strong jaws. (JUST JOIN)

3. Carrie will surely tell Mark SOMETHING.

I like someone else better. (JUST JOIN)

Separate the following sentences into two basic sentences.

Hint: Use the word something.

1. Peggy should know she will fall if she does not hold on.

2. Tommy should admit he was wrong.

Finish the following:

My best friend told me _____.

My mother warned me _____.

The weatherman said _____.

Combine the following sentences using who.

1. Many of the people dress in the style of colonial times.
The people live and work in Williamsburg today. (WHO)

2. That man*is my brother.
That man is painting the house. (WHO)

3. The man*is a thief.
The man broke into Lavern and Shirley's apartment. (WHO)

Combine the following sentences using which or that.

4. The bird was a cardinal.
The bird flew in the window. (THAT)

5. The math home work*was too hard.
Our teacher gave us the math homework. (THAT)

6. The explosives*were left in the playground.
The explosives were dangerous. (WHICH)

Combine these groups of sentences on a separate sheet of paper.

1. The show was about cops.
The cops were chasing the foxy crooks.
2. The crooks were smugglers.
The smugglers stole precious jewels.
3. The crooks were caught.
The crooks had to go to jail.
4. I went to bed.
I was very tired.
5. I wanted school to be over.
I would have a vacation day tomorrow.
6. He saw a UFO.
The UFO came down and gave him a suit.
The suit had instructions.
The suit was funny.
7. Three people live together.
They have a landlord.
He's the apartment manager.
His name is Mr. Farley.
8. He could fly.
He couldn't get killed by a bullet.
9. He taught children in a school.
The children were teenagers.
He liked it.
10. I saw the movie. The movie was "The Gambler."
Brady Higgs was the gambler.
The gambler was betting a lot.
12. The train stopped for water.
Joe left the train.
Joe went to the casino.
The casino was for gambling.
13. John Davidson asked for something.
Would she recite that part.
That part was from Romeo and Juliet.
14. The day was here.
It was the big gambler's game today.

Separate the following sentences into as many sentences as you can.

After Joe had won all there money, he said he had to get back to the train, but the men started to try to kill him.

after	if	when, whenever
although	since	where, wherever
as, as if	so that	which, whichever
because	that	who, whoever
before	unless	while
even, even though	until	

I missed the final exam _____ I forgot the time.
 _____ Cindy was eating breakfast, she began to feel sick.
 I checked my money _____ I walked into the movie.
 _____ Mike lost his temper, he also lost his job.
 _____ I practiced for three months, I failed my
 driving test.

Use the words from the list above to combine the following sentences.

1. She was late.

We decided to leave without her.

2. The teacher announced the test.

The class groaned.

3. The basketball team scored the winning points.

The buzzer rang.

4. Fresh tobacco had to be dried.

It could be packed in barrels.

5. In colonial Virginia, men wore wigs.

The men were members of the House of Burgesses.

Separate the following sentences into two or more simple sentences.
Look for words from your list.

1. Tim, who was Benjamin's black African slave, spoke English very well.

2. Behind the house were cabins where the slaves lives.

3. Since dinner was nearly ready, he did not take time to change.

4. I saw the movie that was called "The Gambler," where Brady Higgs was the gambler who was betting a lot.

5. By this time they were getting near Eeyore's Gloomy Place, which was where he lived, and as it was still very snowy behind Piglet's ears, and he was getting tired of it, they turned into a little pine wood, and sat down on the gate which led into it.

6. By the time it _____ to the edge of _____ forest the stream had _____ up, so that it _____ almost a river and, _____ grown-up, it did not _____ and jump and sparkle _____ as it used to _____ when it was younger, _____ moved more slowly. For _____ knew now where it _____ going, and it said _____ itself, "There is no _____. We shall get there _____ day." But all the _____ streams higher up in _____ forest went this way _____ that, quickly, eagerly, having _____ much to find out _____ it was too late.

but	the	was	
being	before	run	to
came	so	do	the
some	and	was	hurry
little	grown	along	it

On a separate sheet, choose five of these words and make word groups, beginning with the word you chose. Write 5 sentences using these word groups.

about	before	by	in	on	through
above	behind	during	inside	onto	to
across	below	except	into	out	toward
among	beneath	for	of	over	under
around	beside	from	off	past	with
at	between				

Combine the following sentences into one sentence by omitting repeated words. Choose a word group that begins with one of the words from the above list. Begin your sentence with this group. Place any other word groups in the sentence where they sound right.

Example: A fire started

A fire started at 5 A.M.

It started inside the garage.

At 5 A.M., a fire started inside the garage.

1. We played basketball.

We did this in the church gym.

We did this during the winter.

We did this on many evenings.

2. The car skidded.

It did this on an oil slick.

It did this on a sharp curve.

It did this during the race.

3. Separate the following sentence into separate sentences like those in #1 and #2.

During rush hour, without slowing down, the teenage driver raced his car through the busy intersection in the heart of town.

Combine the following sentences using an -ing word and omitting repeated words.

1. The boy took the test.

He hoped for a good grade. (ING)

Hoping for a good grade, the boy took the test.

2. Debbie refused to get out of bed.

Debbie pulled the blanket over her head. (ING)

3. Joe burst through the line.

Joe forced the quarterback to eat the ball on the fourth down. (ING)

4. The slave cried out for mercy.

The slave threw himself at his master's feet.

Separate the following into two sentences:

1. Gasping for air, the boy tried to yell for help.

2. Waking up suddenly, Gina thought she saw a burglar in her room.

Write a sentence beginning with the following

Running from the _____

Combine the following sentences into one sentence by using an -ed word and omitting repeated words.

- 1. Julie fell asleep on the rug.

Julie was exhausted from soccer practice. (ED)

Exhausted from soccer practice, Julie fell asleep on the rug.

- 2. Luke could not defend himself.

Luke was injured from laser fire. (ED)

.....

- 3. The governor demanded that all gatherings of black slaves be broken up. The governor was worried that the slaves would escape.

.....

* * * * *

Choose some action words that will go with "to" such as "to feed," "to skate" etc. Add some other words to make a word group sentence part and write them in the blanks below.

to _____
to _____
to _____

Combine the following sentences using a "to" word group.

- 1. Something was his dream.

He wanted to win an Olympic medal in swimming (TO WIN)

.....

Write a similar sentence substituting an "ing" word group. (WINNING)

.....

- 2. He tried something.

He avoided hitting the tree. (TO)

.....

Appendix B
Posttreatment Tests

Appendix B

Posttreatment Tests

THE CHICKEN

Directions: Read the story all the way through. You will see that it is not very well written. Study the story, and then write it over again in a better way. You will want to change many of the sentences, but try not to leave out any important parts of the story.

A man lives in a farmhouse. He was old. He lived alone. The house was small. The house was on a mountain. The mountain was high. The house was on the top. He grew vegetables. He grew grain. He ate the vegetables. He ate the grain. One day he was pulling weeds. He saw something. A chicken was eating his grain. The grain was new. He caught the chicken. He put her in a pan. The pan was under his window. He planned something. He would eat the chicken for breakfast. The next morning came. It was early. A sound woke the man. He looked out the window. He saw the chicken. He saw an egg. The chicken cackled. The man thought something. He would eat the egg for breakfast. He fed the chicken a cup of his grain. The chicken talked to him. He talked to the chicken. Time passed. He thought something. He could feed the chicken more. He could feed her two cups of grain. He could feed her in the morning. He could feed her at night. Maybe she would lay two eggs every morning. He fed the chicken more grain. She got fat. She got lazy. She slept all the time. She laid no eggs. The man got angry. He blamed the chicken. He killed her. He ate her for breakfast. He had no chicken. He had no eggs. He talked to no one. No one talked to him.

NAME _____

Directions: The following is a reading passage with every fifth word missing. Read the whole passage through once. Then read it a second time and fill in each blank with the word that best fits. Some words may be discovered by reading further in the passage. Please PRINT your answers clearly. Do the best you can. You have _____ minutes.

It was early evening. Two horses were standing _____ their pasture fence. The _____ waited. The young _____ stood by. The old _____ seemed to be looking _____ the big white house _____ the end of the _____. He was really looking _____ the hill. The evening _____ would be coming around _____ hill. Stamping his feet _____ switching his long tail, _____ was very impatient to _____ his daily game of _____ the train the whole _____ of the pasture. The _____ horse was also anxious _____ race the loud rumbling _____.

Then there came a _____ that sounded like a _____ rushing trains. But no _____ came. Instead, over the _____ of a distant hill, _____ a black, whipping, funnel-_____ cloud tearing about like _____ giant, angry, black horse _____ up the countryside.

In _____, the horses raced in _____ of it. As it _____ toward them, the horses _____ only dash around madly _____ and forth as they _____ to escape. The old _____ whinnied and tried to _____ through the fence until _____ heavy wire threw him _____ and he fell to _____ ground dead. The new _____ turned and ran terrified, _____ the tornado sucked the _____ horse up into it.

_____ raced ahead of the _____, which was being torn _____ in sections and wildly _____ into the air. Suddenly _____ feet were not on _____ ground. She too was _____ the air with her _____ pawing. Then, _____ her back to the _____, the tornado turned toward _____ trees.

The young horse, landing on all four legs, stood dazed as the tornado turned over trees and finally dropped the old horse. Like the trees, the old horse lay upside down and horribly still.

In at least two sentences, tell what you think happened next.
