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The Effect of Sentence-Combining Practice on the Syntactic Maturity Level of Writing and on Reading Comprehension

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THE EFFECT OF SENTENCE-COMBINING PRACTICE ON
THE SYNTACTIC MATURITY LEVEL OF WRITING
AND ON READING COMPREHENSION

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

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Abstract

The purpose of this study was to determine the influence of sentence-combining practice on the syntactic maturity level of the writing and on the level of reading comprehension of ninth grade students enrolled in a compensatory-level English class. The indicators of syntactic maturity used in the study were structured writing and free writing.

During the six-week, sentence-combining treatment period, the experimental group focused attention on various syntactic sentence structures by writing the exercises and by class discussion of these exercises.

The treatment program was evaluated by comparing the treatment group to the control group on the structured writing, free writing, and reading comprehension measures which had been used to equate the groups prior to the treatment period. The data were analyzed by means of the t test for independent means.

The result of the analysis of the data of the three areas investigated showed that the experimental group had a significantly higher mean T-unit length for the structured writing than did the control group. A trend existed in favor of the experimental group with a mean T-unit length of the free writing higher than that of the control group, but not at a significant level. There was no significant difference between the two groups in the scores of the reading comprehension test.

Based on analysis of the data, the conclusion can be drawn that sentence-combining practice does lead to an increased level of syntactic maturity in writing as measured by the repeated completion of a piece of structured writing, which is really an exercise in sentence-combining. The increased level of syntactic maturity did not carry over to the free writing at a significant level. This may be due to student emphasis on the generation of ideas rather than on the condensation and revision of sentence structure.

The premise was investigated that as the student becomes aware of syntactic structures in his writing, he may also recognize and comprehend them in his reading. This premise was not substantiated in the study. This may be due to the instrument's inability to measure the knowledge and use of syntax in the reading situation.

Interest in writing maturity and the interrelatedness of writing and reading skills opens numerous areas which need further research and gives support for the use of sentence-combining exercises in the classroom.

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Chapter I

Statement of the Problem

Purpose

This investigation sought to determine the influence of sentence-combining activities on the syntactic maturity level of the writing and the level of reading comprehension of ninth-grade students enrolled in a compensatory-level English class. The indicators of syntactic-maturity used in the study were structured writing and free writing.

Need for the Study

Listening, speaking, reading, and writing are all language oriented activities which have an assumed interrelationship. It has been theorized that growth in one area brings about growth in the other areas. Artley et al. (1954) states that "research has shown parallel growth curves among these language arts. Learning in one area reinforces the learnings in other areas" (p. 33).

Stotsky (1975) states:

A half century of phenomenological studies by Piaget has produced an enormous oeuvre testifying to the changes in intellectual structures in children's thinking from infancy through adolescence. Formal schooling, in terms of both structure and curriculum, has always been founded implicitly, if not explicitly, on the developmental shift in children's thinking from more concrete modes of operation to the abstract modes of hypothetico-deductive thinking required in secondary school subject matter. (p. 44)

Thus it is credible that as children mature to a higher level of intellectual development, particularly during adolescence, the

relationships among the language arts areas may also evolve and form new relationships. Kagan (1971) asserts that a new cognitive competency emerges during adolescence. This qualitative evolution in cognition enables a child to correct language deficiencies which may have persisted to the threshold of childhood. Furthermore, Loban (1976), in analyzing written language samples, found that random and low-level language-ability groups did not begin to use complex language functions in their written language until they reached junior-high-school age. One reason, therefore, that ninth-grade competency-level students were chosen for this study was that they should, by that age, have reached the higher level of cognitive competence and language usage described by both Kagan and Loban.

During the last two decades there has developed a renewed interest in the writing of school children. This interest is in part a result of Hunt's (1965) research and his development of the T-unit, a consistent, objective measure of oral and written communication which evaluates and compares the syntactic maturity of these expressions through the analysis of sentences.

Another reason for the renewed interest in writing, at least in New York State, is the increased focus on the basic writing abilities of students, as measured by the New York State Regents' Writing Competency Test. Passing this test has become a requirement for high school graduation in that state and has led to increased attention toward the techniques used to teach the basic writing skills. Sentence-combining activities have been suggested, in the instructor's manual for that test, as a remedial technique for students who are deficient

in basic writing skills. Another reason for choosing ninth-grade students for this study was, therefore, that once they are in high school they must develop skills necessary for passing the writing competency test, and hence they would benefit from instruction in and practice of the sentence-combining technique.

Recent experimental research suggests that using the sentence-combining technique as part of the curriculum in English leads to significant and sustained increases in syntactic maturity and fluency and improved overall writing quality (Combs, 1976; Daider, Kerek, & Morenberg, 1978; Mellon, 1969; O'Hare, 1973).

Furthermore, scholars and educators imply that sentence-combining activities are beneficial because of the similarity of the syntactic knowledge needed to perform both writing and reading activities. O'Hare (1973) suggests that the question of whether sentence-combining practice might improve reading ability should be further investigated. The Regents' Reading Competency Test, the passing of which is required for high school graduation in New York State, has also generated increased attention to techniques which might improve reading ability.

This study investigated the hypothesis that a program of sentence-combining practice would produce a higher level of syntactic maturity in ninth-grade compensatory English students, as measured by the analysis of both free and structured writing products than in a control group. In addition, the investigation of the reading comprehension level of these students following the treatment period was undertaken.

Questions to be Answered

The following questions were investigated:

1. Is there a significant difference in the syntactic maturity level of structured writing between a group having received instruction using sentence-combining exercises and a control group?
2. Is there a significant difference in the syntactic maturity level of free writing between a group having received instruction using sentence-combining exercises and a control group?
3. Is there a significant difference in the reading comprehension level between a group having received instruction using sentence-combining exercises and a control group?

Definition of Terms

Sentence-Combining. A process by which two or more simple, or kernel, sentences are combined to form a complex sentence that reflects the interrelationship between the ideas contained within the kernel sentences and which has a higher level of syntactic maturity than any of the individual kernel sentences.

Kernel Sentence. A simple or basic sentence free of embeddings or subordinations.

Syntactic Maturity. The designation of the observed characteristics of writers in a higher grade-level compared to writers in a lower grade-level. Syntactic maturity is measured by the average number of words per T-unit of a writing sample. However, the average use of more words in a T-unit does not necessarily imply that the "style is better." Almost all possible syntactic structures are used naturally by young

children in their speech. It is, however, the combination of those structures within a single oral or written sentence that indicates the relative level of syntactic maturity of that sentence.

T-unit. The "Minimal Terminable Unit" of syntactic structure as identified by Hunt (1965), consisting of one main clause with all the subordinate clauses attached to it or embedded within it. Thus the T-unit can be a simple or complex sentence, but not a compound sentence. Example 1: Two kernel sentences, each a single T-unit--"The dark clouds rolled by." and "The sun shone brightly again."--may be combined into a single complex sentence of one T-unit--"When the dark clouds rolled by, the sun shone brightly again." Example 2: Two kernel sentences formed into a compound sentence will still be two T-units--"The dark clouds rolled by/* and the sun shone brightly again."/* (*--A / indicates the end of a T-unit.)

Free Writing. A writing exercise in which a student develops an essay on a single topic with no instructional assistance.

Structured Writing. A writing exercise in which a student develops an essay or paragraph given a list of kernel sentences on a single topic. It embodies the relationships among the ideas contained within the kernel sentences and has a higher average level of syntactic maturity than the average level of the kernel sentences.

Limitations of the Study

Since the sample used in this study was limited to twenty-one students in a treatment group and fifteen students in a control group, neither group being randomly selected, the conclusions drawn from this study can not

generally apply to all ninth grade students, nor even to all compensatory-level ninth-grade students. They can be said to pertain only to this group or a matched group.

The Reading Comprehension section of the Iowa Silent Reading Test, the reading comprehension test authorized by the school that the students participating in this study attended, may not be an adequate or appropriate evaluative measure of the syntactic knowledge needed to perform the reading comprehension activities that correspond with the syntactic knowledge exhibited by the writing activities. The effects of the sentence-combining practice on the reading comprehension of the students may not be evident based on the test used.

Summary

The justification for this study is predicated on the increased concern for the improvement of student writing and reading skills as manifested by such State Education Department requirements as the passing of the New York State Regents' Competency Tests in writing and reading. The introduction of an objective measure, the T-unit, for the evaluation of writing competency and growth in the form of syntactic maturity enables the conscientious researcher to monitor student writing abilities over time, and to compare student writing abilities in both structured and free writing modes. Furthermore, researchers have established that sentence-combining activities increase the syntactic maturity level of student writing in many varied writing activities. Also, assuming the interrelationship of the language skills of writing and reading, based on the similarity of the syntactic knowledge needed

to perform both, this study of writing ability also investigated reading ability.

The ninth grade students were selected as the subjects of this study because it was assumed that the cognitive growth expected at this stage of development would permit those students to benefit from additional instruction in writing skills.

The theoretical and historical antecedents for the design and implementation of this study are discussed in further detail in the following chapter.

Chapter II

Review of the Literature

Purpose

The purpose of this phase of the study was to investigate several areas of research in the language arts to determine the interrelationships between the application of sentence-combining techniques and increase in the syntactic maturity level of student writers. A second area of inquiry addressed the question of the degree to which students' increased knowledge of syntax affected their reading comprehension.

Language Development

As children mature chronologically and mentally, the sentences they use in oral and written communication become longer and more complex. In detailed reviews of language development studies, Carroll (1960), Heider and Heider (1940), and McCarthy (1954) summarized research of both spoken and written language. Regardless of the measure of language development--mean sentence length, percentage of inventories of parts of speech and major sentence types, or ratios of subordinate to total clauses--all research studies reviewed reported evidence of continuous growth from year to year.

In a 13-year longitudinal study, Loban (1963, 1966, 1976) investigated some aspects of language arts activities in an effort to compare language development in children and adolescents with the velocity of

their yearly growth. He collected and analyzed the oral and written language samples of 211 children as they progressed from kindergarten through the twelfth grade. Loban found a significant interrelationship among all the language arts studied among children in the upper grades, but no significant relationships in the earlier grades. He found also that writing samples of upper elementary grade students correlated highly with socioeconomic status and reading achievement.

For purposes of analysis, the students in his study were categorically divided into three groups labelled high, random, and low, according to indices which included intellectual ability, sex, ethnic background, and socioeconomic status. The students in the high category performed better as a group than students in the other two groups in all areas of language development observed. The high group demonstrated more control of ideas in both oral and written modes than the other groups, who rambled without purpose and did not focus on relationships among ideas nor subordinate ideas as well. Students in the high group tended to use more subordination, and therefore to combine "communication units" into complex sentences, than students in the low category. As familiarity with more complex sentences was developed, the students in the high category tended to incorporate a greater number of ideas into their sentences, thereby exceeding students in the low category in the number of "communication units," which Loban defined as an independent clause with all its modifiers. Finally, even though all the subjects knew and used all the basic patterns of English sentence structure, the high group demonstrated greater flexibility and repertoire within the pattern of a sentence than did the other groups.

In Loban's study, comparisons were made between the average number of oral and written words per communication unit. He found that from grades one through seven the oral language ability of the subjects were slightly higher than the written; in grades seven through nine, there was a close comparison between the oral and written abilities; and then in grades ten through twelve, the longer communication units occurred in writing. Most important, however, was the observation that there was a developmental advance in language ability, in which both the oral and written average for communication units increased at about the same rate of growth, within each of the groups respectively within any given year. In comparing the use of transformations in language, at the high school level Loban found ~~that~~ students in the high group produced twice as many multi-base deletion transformations on the average as students in the low group, and that low group students did not use as many transformations of this type in high school as high group students had used in grades one to three.

Another facet of Loban's study was the comparison of oral and written language in the area of elaboration. The high group, except in grades eleven, demonstrated a higher level of elaboration in written language than oral language. The random group duplicated this pattern, but more slowly. The low group, however, used more elaboration in oral language than written, during grades four through seven, then changed to a pattern of using more elaboration in written language similar to that of students in the high group. Presumably, the repertoire of syntactic strategies developed more slowly in those lacking language

proficiency. Much oral practice was needed before the complex syntactic structures could be used in writing.

Loban's research in this study indicates that as a child matures, he tends to embed more complex syntactic structures within his sentences. Perhaps these increases can be attributed to cognitive development or perhaps they are a result of imitation of more mature language styles that are encountered in reading and conversation in school. Whatever the reason, Loban concludes that there is clearly a developmental trend. Therefore, since the use of complex sentence structures tends to increase with age, and is indicative of a developing linguistic maturity, the syntactic characteristics identified by Loban's study of language development appear to be appropriate criteria for describing syntactic maturity, which is discussed in the next section.

Syntactic Maturity

English teachers have long been aware that the writings of older students are generally better or more mature than those of students of a younger age. This judgment has been based on such factors as ideas, organization, vocabulary, spelling, and style, which teachers encounter in their evaluation of student writing. The more mature writer generally writes in longer sentences having more complexity and subordination. Mature writing as Hunt (1965) has pointed out is typically far more grammatically complex than mature spontaneous speech. The deliberate, extensive embedding of modifying phrases or clauses in the sentences of mature writers is a linguistic phenomenon that has only recently received systematic attention from researchers.

The term "syntactic maturity" has been used as a descriptor to distinguish between the writings of the younger and older writer, and also to index the normal language developmental stages of student writing. However, use of the term to describe comparative differences between the writings of individual students was inadequate because it was too general and often influenced by subjective judgment. What was needed was an objective measure that could be used to evaluate the writings by identifying specific features which varied consistently with what could be defined as "syntactic maturity." If syntactic maturity could be quantified, then the various stages of syntactic development could be identified and compared within and between students' writings.

The advantages of an objective measure are many. Comparisons could be made to evaluate student growth. Those students lagging behind the "normal" developmental level could be identified and given remedial instruction. Students making normal progress could be given extra attention to speed their growth. As already reviewed, normal language developmental patterns have been identified.

O'Donnell, Griffin, and Norris (1967) report that in the introduction of the Heider and Heider (1940) study of the sentence structures in compositions of deaf and hearing children, an extensive account of the earlier applications of objective measures of syntactic characteristics of children's writings is given. Most pre-1960 studies were concerned with total length of responses, lengths of sentences or tabulations of frequencies of various syntactic elements and parts of speech. Therefore, issues such as the refinement of procedures for the description and evaluation of children's language growth were not usually addressed.

Language development, or syntactic maturity, has usually been indexed by observing the length of sentences and the use of subordination within a sentence. Recent studies have supplied normative data which identify specific syntactic characteristics that distinguish the more mature from the less mature writer. Three of the more important studies of language development were conducted by Hunt (1965), Mellon (1969), and O'Donnell et al. (1967). Although Mellon identified twenty language variables, most of which proved to be significant, many of those variables seemed to be redundant. The studies of Hunt and O'Donnell suggest a more efficient and reliable means of syntactic measurement without much of the redundancy.

Hunt (1965) conducted a study of the grammatical structures written by average students in grades four, eight, and twelve. He analyzed 1000 words of writing by nine boys and nine girls respectively at each of the three grade levels and based on his data, was able to establish norms for three categories of syntactic maturity. Later he also analyzed expository fiction written for Harper's and Atlantic magazines and categorized the writers of these pieces as superior adults, thus adding a fourth category to his syntactic maturity matrix.

Until the 1960's the length of sentences was used as a comparative measure of writing development. A sentence was defined as what a student wrote between an initial capital letter and some terminal mark of punctuation. However, the improper use of punctuation by students often invalidated this measure, as did the use of the word "and" to join two independent clauses, a common practice of immature writers that expands sentence length.

After investigating clause length and subordination, Hunt concluded that the minimal terminable unit, the T-unit which is defined as one main clause with all the subordinate clauses attached to it or embedded in it, would be the test index of syntactic maturity. He found that younger students wrote a larger number of short T-units than older students wrote, while the older writers produced a larger number of long T-units. Longer T-units were produced by older writers because they tended to use proportionately more subordinate clauses in their writing. He found that an increase in T-unit length was an indicator of an increase in syntactic maturity as the writer became older and more experienced. Although Hunt considered this 1965 research as little more than a pilot study, his results have served as the basis for objective analysis of student writing since that time.

O'Donnell et al. (1967) investigated oral language samples of 30 children at each of the grades kindergarten, first, second, third, fifth, and seventh, along with writing samples of students in grades three, five, and seven. After viewing two eight-minute films, with the sound turned off so the narrator's language would not influence their language production, the children were asked to tell the stories of each film in private to an interviewer and to answer certain questions related to their narrative. Those students in grades three, five, and seven were also asked to write the stories and to write the answers to the same questions. O'Donnell used Hunt's T-units to analyze his data and found that the average length of the T-unit increased at every grade level as well as the total length of the responses. The number of clauses per T-unit also tended to increase with the ages of the children tested.

Comparing the analysis of speech of elementary children in the Loban and O'Donnell studies and writing in the Hunt and O'Donnell studies, it is noteworthy that the developmental trends are generally parallel. The comparisons between speech and writing in the O'Donnell study indicate that advances in the control of syntax in grades five and seven were accelerated in writing far beyond those in speech. These observations support Hunt's conclusion that the average length of T-units can be accepted as a simple, objective, and valid indicator of syntactic development in language use.

A later investigation by Hunt and O'Donnell (1970) was designed to determine whether students of differing age and maturity levels would display different levels of syntactic maturity when confronted with the same subject matter. In this case the stimulus variable, consisting of a set of extremely simple sentences, was held constant with all writing groups tested, regardless of their age or maturity level, to control the possible inference that older, more mature students tend to use more complex sentence structures because they are apt to deal with more complex ideas.

Using the Syntactic Maturity Test designed by O'Donnell, Hunt directed his subjects to combine these "kernel" sentences in ways that used all the information contained therein but added no additional information. Over 1000 students selected from grades four, six, eight, ten, and twelve in Tallahassee's public schools, almost all of them white, participated in the project. In addition, 50 students were identified at each grade level to ascertain the normal distribution of academic ability. Each student in the experiment was presented with a

written passage containing 32 kernel sentences and asked to rewrite the passage in "a better way" (see Appendix A for complete test). Using the T-unit as an instrument to measure syntactic maturity, the written passages were scored and averages were computed for high, middle, and low-ability students at each grade level.

The results clearly showed that the older students displayed superior syntactic manipulative ability to younger writers, although all participants were given the same directions. Older students used a wider variety of transformations, longer clauses and longer T-units. The trends indicated in Hunt's (1970) study are the same as those shown in the Hunt (1965) and O'Donnell, Griffin and Norris (1967) studies of free writing.

Grammar and Writing

Early studies of the relationship between formal teaching of grammar and writing indicated that formal instruction in grammar had no effect on the improvement of writing and may have resulted in some harmful side-effects. But in 1957, Noam Chomsky proposed a "generative-transformational" theory of grammar as an efficient method of formulating a system of explicit rules capable of characterizing all grammatically well-formed sentences. His theory was later refined by Lees (1960, 1961) and also by Chomsky himself (1965). However, the complexity of the rules, which are frequently close to the language of mathematics, make the understanding of the theory difficult for teachers of grammar and other non-technically-oriented people, so Chomsky's theory has not received much practical acceptance.

The main purpose of learning language-usage rules was to achieve correctness in written expression. Thus students' writings were evaluated based on the number and kinds of errors in sentence structures. Two studies in this area, by Harris (1962) and Milligan (1939), suggest that growth of sentence structure was retarded or constrained by error-oriented pedagogy.

A subsequent study by Bateman and Zidonis (1966) investigated the question of whether the study of transformational-generative grammar improved a student's ability to write mature sentences, in addition to reducing syntactic errors. In their study, which spanned a two-year period, ninth-grade students were randomly assigned to a control and experimental group respectively. The control group followed the normal curriculum in writing, while the experimental group followed the same curriculum with the addition of study in generative grammar. Six pretest and six posttest compositions were submitted by each student and were analyzed for grammatical errors. In addition, mean "structural complexity" scores were calculated, using the raw number of grammatical transformations plus "1" to define the structural complexity of each sentence. Forty-six "rules" of transformational grammar were used to evaluate each sentence of each composition.

Bateman and Zidonis claimed, in light of their results, that a knowledge of generative grammar enabled students in the experimental group to significantly increase the proportion of well-formed sentences they wrote compared with the control group, and furthermore, to increase the complexity of their sentences without sacrificing grammatic structure.

In addition, students in the experimental group reduced the number of grammatical errors in their writing during the period of the investigation.

In a review of the study, Mellon (1969) took issue with Bateman and Zidonis and claimed that their results were in error. He maintained that the hypothesis of the entire experiment was based upon a premise which was difficult to accept rationally, namely, that pupils must be taught a system that accounts for well-formed sentences before they can be expected to produce more of such sentences themselves. He also maintained that the statistical method used to tabulate and determine structural complexity of sentences was inappropriate. Other research had indicated that young children had already mastered a large number of English sentence structures prior to starting school and quickly learned to use the remaining structures once they had entered elementary school (Carroll, 1960).

Despite the controversy over methodology and premise, the Bateman and Zidonis study is significant in its results which show that students who studied transformational grammar wrote sentences with fewer errors and with more syntactic maturity at the conclusion of the experimental period than students who did not. However, O'Hare (1973) has suggested that perhaps it was practice in sentence manipulation, not the knowledge of grammar, which led to those results. This practice of sentence-manipulation, later called sentence-combining, is discussed in the next section.

Sentence-Combining

With the effect of sentence manipulation on syntactic maturity being questioned, a new trend in writing research and instruction developed called sentence-combining. Hunt (1965) drew attention to this concept in his "Implications for the Curriculum."

Although the average child in the fourth grade produces virtually all the grammatical structures ever described in a course in school grammar, he does not produce as many at the same time--as many inside each other, or on top of each other--as older students do It is what the older student does 'in extremis' that especially distinguishes him.

This study suggests a kind of sentence-building program (sentence-combining) that probably has never been produced, or at least not systematically and fully. The aim would be to widen the student's span of grammatical attention and concern. The method would be for him to reduce independent clauses to subordinate clauses and nonclauses, consolidating them with adjoining clauses and T-units. He could work up to structures of considerable depth and complexity comparable to those exhibited by twelfth graders and superior adults.

If proficiency in this process is the most significant factor of growth in sentence maturity, then a teacher is certainly tempted to try to hasten that growth. Perhaps the student with a broad repertoire of equivalent structures has the same advantage as a student with a high vocabulary.

Of course, forced growth is not always firm growth. Perhaps the older students' proficiency comes only as a result of years of psychological and experimental maturing. It may come only with the development of all thought processes. In that event, attempts to force the growth will be futile. It is even possible that injudicious forcing is worse than futile. . . . More than one child has been debilitated by excessive self-consciousness. Nonetheless, some extensive experiments need to be made. (Hunt, 1965, pp. 156-158)

One of the first researchers to investigate this idea of sentence-combining was Mellon (1969) who conducted a study to investigate whether grammar practice would enhance the growth of syntactic fluency, the range of sentence types observed in representative samples of a student's

writing. Mellon assumed that growth in the use of sentence structures was a result of experience and cognitive growth which could be enhanced by grammar practice in the form of transformational sentence-combining. The treatment consisted of exercises in which sets of kernel sentences were to be combined into a single complex sentence following transformational rules given alongside the sentences. The student was to rehearse the full sentence while forming it and appraise the grammatical correctness. Then, he would retain the fully formed sentence in his memory while writing it.

The subjects were 247 seventh grade students assigned to three treatment groups--experimental, control, and placebo--for the year of study. The experimental group received practice in sentence-combining problems as one third of their English course work. The control group received practice in traditional parsing exercises, and the placebo group received no grammar instruction, but extra instruction in literature and composition. All subjects were given the STEP writing test and all wrote nine compositions. The first 10 T-units of each composition were selected and analyzed for 12 factors of syntactic fluency.

The experimental group experienced significant posttest growth on all 12 factors. The posttest growth was from 2.1 to 3.5 years growth based on Hunt's established norms. As anticipated, growth in the control and placebo groups was slight. This supports Hunt's findings that normal growth over a nine month academic year under typical classroom conditions would not be of statistically significant magnitude.

Mellon's study was criticized by other researchers on the grounds that although the experimental students were taught transformational

grammar rules, these were neither practiced per se nor tested. Furthermore, the transformational rules given to the students were written in language and style beyond that of most seventh grade students' understanding, and in some cases, the rules and examples were felt by some critics to be in conflict with each other. The critics concluded that it was the sentence-combining practice based on the models presented and not the use of the transformational grammar rules which caused the significant growth in syntactic fluency in the writings of the experimental group.

Using Mellon's study as a basis for his own study, O'Hare (1973) theorized that the grammatical signals were unnecessary since language had already mastered the concepts underlying the grammatical structures used. He also attempted to eliminate the possible adverse effects of grammar study on students who could not understand the theoretical constructs underlying sentence formation. O'Hare's study modified Mellon's methodology by changing the format of the exercises so that the written cue words for the sentence-combining transformations had no grammatical terminology, and using exemplary models to aid in solving the new sentence-combining problems.

The purpose of O'Hare's study was to give sentence-combining practice while freeing the student from the distraction of finding meaningful context himself. The sentence-combining practice gave the subject systematic and controlled experience in the production of sentences which were generally more mature than he would produce himself. He then gave his undivided attention to the actual process of transforming without concern for grammatical theory.

O'Hare's study involved 41 seventh grade students in the experimental group who practiced cued sentence-combining exercises as a part of their English curriculum for eight months. The control group consisted of 42 seventh graders who were instructed using the standard English curriculum. Pre- and post-treatment situations were analyzed. The syntactic maturity level of each piece of writing was calculated based on the average number of words per T-unit.

In addition, the post-treatment compositions were evaluated for general writing quality. To simplify this procedure, 30 matched pairs of essays were chosen for forced choice evaluation. The essays were matched by IQ and sex of the student, one from each group.

The study showed that the experimental group had statistically significant gains in six factors of syntactic maturity as compared to the control group which showed no significant gains. An interesting note is that the words per T-unit yielded the highest gains, further confirming what Hunt (1965) and O'Donnell et al. (1967) had demonstrated, that words per T-unit were the most reliable single index of syntactic maturity.

A comparison of the results of O'Hare's study with that of Hunt's normative data shows that on all six syntactic factors, O'Hare's experimental post-treatment scores reached an average grade-level of above twelfth grade whereas the control group's post-treatment scores had an average grade-level below the eighth grade level as indexed by Hunt's data.

The second hypothesis was also confirmed. The experimental group's essays were judged significantly better in overall quality than those written by the control group.

O'Hare advocates the inclusion of sentence-combining practice as part of the language arts program by saying:

The case for the efficacy of sentence-combining practice becomes even more attractive when the results of research in composition are reviewed. Neither Braddock (1963) nor Merkel (1963) uncovered a single study reporting a statistically significant composition treatment effect. Since the present study did discover a significant composition treatment effect, its sentence-combining system, which enables students to build sentences and manipulate syntax with greater facility, this should surely be utilized in our schools. (O'Hare, 1973, p. 70)

O'Hare also concluded that knowing "what" to say isn't enough for a writer; he has to know "how" to say it. The sentence-combining process makes the writer more aware of the possible choices available to him during the composing process. Also, sentence-combining exercises which explore a wide range of syntactic alternatives allowed by English grammar could be used at the prewriting and rewriting stage to improve the written product. This technique when used effectively could build the student's confidence and a positive attitude toward sentence production.

Oral Sentence Manipulation

Another group of researchers who sought to alter the syntactic level of the writing of their subjects used the oral drill technique as their treatment. Three experiments using similar methodology were by Ney (1966), Raub (1966), and Miller and Ney (1968) who followed the model of the pilot project with seventh grade students which was reported in the English Journal by Ney (1966). In all three studies the experimental

students practiced orally the manipulation of sentences using specific syntactic structures. Then written exercises associated with the oral drill were practiced to effect transfer of training from speech to writing. Progress was measured by having the students write about a film they had viewed. The compositions were then evaluated according to techniques devised by Hunt (1965) to determine whether the structures practiced occurred more frequently in the posttest than in the pretest. The improvement was measurable although not always statistically significant. Thus the researchers concluded that there was some change in student writing behavior as a result of oral drill on certain syntactic structures.

Miller and Ney (1968) compared fourth grade students in an experimental group exposed for one year to oral practice in manipulating syntactic structures to a control group which had regular reading and composition lessons. The experimental treatment was, as above, the manipulation of sentences orally in response to teacher given cues, then written practice of the correctly manipulated sentences. The results of the study showed that the experimental group increased its use of the structures practiced at a significant level, wrote more words, and used more complex sentences embedding multiple clauses than the control group used.

Sentence-Combining in the 1970's

As writing research progressed into the 1970's, more studies were undertaken to examine the effect of the use of the sentence-combining technique.

Fisher (1973) conducted a study with 94 students in grades five, seven, and nine to determine the effect of sentence-combining exercises on syntactic maturity as measured by T-unit length, clause length, and clauses per T-unit. He also tested the effects of sentence-combining exercises on reading comprehension by means of cloze tests and a standardized reading test administered to one group at each grade level.

Sentence-combining exercises involving twelve different transformations were completed by the students. In the latter part of the study, the reverse of the sentence-combining process, separating complex sentences into kernel sentences was practiced.

Fisher analyzed six writing factors and four reading factors and found that sentence-combining exercises enabled students in all three grades to write at a higher level of syntactic maturity at all ability levels, but did not improve students' reading comprehension in any significant way.

Perron (1974) conducted a six month study with 32 fourth grade students. Sentence-combining methods were used with the experimental group in lessons and games. Free writing samples in the four modes of argument, description, exposition, and narration were collected before and after treatment from both the experimental and control groups.

The data were analyzed for T-unit length and six factors of syntactic development. Also matched pairs of writings were evaluated for quality gains. The experimental group made significant gains in five of the six factors while the control group made significant gains in only two. Although the t test showed no significant differences between the groups, the percentage of gain of the experimental group was consistently higher

than the control group. Also post-treatment writings were judged better for the experimental group than for the control group indicating writing quality gains, although not at a significant level.

Perron concluded that in addition to increasing the syntactic maturity level of writing, sentence-combining practice seemed to be self motivating as other writing techniques had not been. Students enjoyed the sentence-combining activities.

In a study by Combs (1975) 100 seventh-grade students were given sentence-combining practice for three months as part of their language arts program. Pre-, post- and delayed post-treatment compositions from the experimental and control groups were statistically analyzed by T-unit length and mean number of words per clause. The experimental group's posttest compositions were significantly more syntactically mature than either the control group's posttest compositions or their own pretest compositions. In the delayed posttest analysis, the control group made a very small gain while the experimental group showed considerable syntactic erosion only eight weeks after the sentence-combining instruction was discontinued. However, the experimental group was still syntactically more mature than the control group.

In an examination of the quality of the writings by matched pair design, in which one composition in each pair was judged "better," the experimental group's posttest compositions were not significantly different from their own pretests. There was no significant difference between the control group's pretest and posttest compositions.

The effect of the sentence-combining practice on reading rate and comprehension was also investigated. No differential effect on either

reading rate or comprehension was found on one reading measure, but the experimental group scored significantly higher than the control group on the comprehension posttest of a second measure. Combs concluded that the reading measures used may have been insensitive to the specific gains in reading rate and comprehension achieved through sentence-combining practice.

Combs concluded that sentence-combining practice does indeed bolster syntactic maturity and quality of writing but could draw no conclusion as to its effect on reading.

Callaghan (1977) and Sullivan (1977) conducted coordinated studies on the effects of sentence-combining practice on the growth of syntactic maturity, quality of writing, reading ability, and attitude of students in the ninth grade and eleventh grade respectively. Both researchers used several hundred students in many different schools with several different teachers. The study covered a whole school year during which time either 30 or 15 sentence-combining lessons were taught. Thus the sentence-combining exercises were widely spaced throughout the year.

The results of the two studies were very similar. Sentence-combining practice significantly increased the growth of syntactic maturity of students' writing. Both researchers concluded that 15 to 20 exercises were as effective as 30 in order to significantly increase syntactic maturity. The addition of oral practice did not produce significant results. There was no significant effect on reading ability or quality of student writing. However, there were some developmental patterns in syntactic maturity. In addition, student attitude toward sentence-combining exercises and writing revision improved.

Schuster (1977) reported that at his school the seventh, eighth, and ninth grades experimented with sentence-combining over a three year period using O'Hare's Sentencecraft (1975). In a study of low ability seventh grade students, the following benefits of the sentence-combining program were noted: the quality and length of student compositions improved; the students enjoyed the program and felt successful in it; and student handwriting, mechanical skills, and grammar improved in many cases. Schuster maintained that when students were taught sentence-combining, they also learned reading comprehension and thinking processes and were better able to expand their thoughts in their writing.

Pedersen (1978b), in a study of the effects of sentence-combining training on 113 seventh-grade students over a period of ~~one~~ school year, assumed that significant gains in syntactic maturity would be achieved. Therefore his major emphasis was on whether these gains would be sustained as measured by a delayed posttest. His findings confirmed that the experimental students scored significantly higher than the control students in achieving and sustaining growth in syntactic fluency.

Pedersen concluded that the findings suggest a strong relationship between one's linguistic ability to express ideas, feelings and experiences--syntactic fluency--and one's mental ability to conceptualize and express integrated meaningful content--semantic fluency. He also concluded that sentence-combining practice can increase semantic knowledge essential for appropriate subordination called "chunking," which will be explained in a later section.

Pedersen used two new terms to explain other findings in his study, conceptual and logical fluency. Conceptual fluency is the competent formulation and expression of ideas and generalizations. Logical fluency is the use of appropriate words and sentences to define the relationships between and among words and sentences. He used a semantic differential test to show that students having sentence-combining practice exhibited significant growth in logical fluency.

Sentence-Combining at the College Level

At the college level, Maimon and Nodine (1978) conducted a nine week study using sentence-combining practice with 14 college freshmen. They found that the students' syntactic maturity level, as measured by the mean number of words per T-unit, increased significantly in both the areas of free writing and structured writing. Also the students wrote 40% longer T-units in their free writing than in their structured writing.

The study also investigated the patterns of syntactic errors that develop when students are given sentence-combining practice. There were insufficient data to draw definite conclusions. However, it appeared that errors increased when students increased their embeddings past their capacity to do so correctly, thus their natural syntactic maturity level.

In another study of college freshmen, Morenberg, Daiker, and Kerek (1978) investigated the effect of sentence-combining practice on syntactic maturity, writing quality, and reading ability.

In this larger study, nearly 300 students were taught non-signalled or open sentence-combining based on Strong's (1973) Sentence-Combining--A Composing Book as part of a 15 week English course. In open sentence-

combining the students are given a set of kernel sentences and instructed to form longer sentences without the aid of cued suggestions for the use of certain syntactic structures.

The results showed a significant increase in the experimental group over the reference group in syntactic maturity and writing quality but no significant effect on reading ability, although the experimental group showed slightly higher gains.

Stewart (1978) also studied college freshmen during an intensive six week period using sentence-combining exercises based on Strong's (1973) Sentence-Combining--A Composing Book and Christensen's (1967, 1976) models. The test instruments used were the Syntactic Maturity Test (Hunt, 1970) and a 300 word free essay.

Stewart's emphasis was to evaluate student writing on two factors of syntactic maturity--pre- and post-treatment words per T-unit and words per clause--and to assess writing quality. The treatment group showed significant gains over the reference group on both the words per T-unit and words per clause in both the controlled and free writing. An example of writing quality differences indicated that the modest gain of the treatment group was greater than the minimal gain of the reference group. This writing quality gain by the treatment group was unexpected in light of the fact that both groups had received writing instruction. Stewart's findings were comparable to the results of Combs (1976), Daiker, Kerek, and Morenberg (1978), Hunt (1970), and O'Hare (1973).

Tomlinson (1980) conducted a 12 hour total study over a six week period with 87 college freshmen of an ethnic minority background who were attending a summer program for disadvantaged students. Her two

treatment groups each completed sentence-combining exercises. However, one group's exercises stressed replication of sentence patterns while the other group's exercises focused on the various options available to combine the ideas.

Tomlinson used as test instruments the Syntactic Maturity Test (Hunt, 1970), two free essays and the Metropolitan Achievement Test. She found that several trends favored the sentence-combining groups over the control group and suggested that the effects of the different sentence-combinings treatments on reading should be investigated.

Another researcher, Cooper (1973) concluded that the sentence-combining language experience repeatedly has been demonstrated to be the single most beneficial tool currently available to improve student writing. This partial review of the many research studies has also shown sentence-combining practice to be an effective technique for improving students' writing by increasing the syntactic maturity level of their written products.

Chunking

Harrell (1957) discovered that younger children write shorter sentences than those they speak. He suggested that older children are better than younger children at learning to keep sentences of increasing length in their memories while writing them out on paper. Support for this contention can be found in the theory of "chunking" developed by Miller (1956) who suggested that as the mind matures, it develops a more sophisticated ability to organize complex information. Hunt (1970) agreed stating that this developing ability would explain why children as they mature produce and understand more complex sentences.

According to the research of O'Donnell et al. (1967), the oral language of kindergarteners in the United States contains all of the syntactic structures used by seventh grade students. However, they show only a few of these structures in their written language until fifth grade or later.

The linguistic revolution of the 1960's and 1970's revealed that language is more patterned than had been realized under traditional descriptions. Psycholinguistics has provided additional recognition that patterned or chunked material is easier to comprehend and retain than unpatterned material and occupies less space accordingly in the short term memory. Miller (1956) discovered that the magic number of 7, ± 2 , is the capacity of short term memory. By increasing the size of a chunk, more material could be covered and remembered more easily.

Mellon (1969) assumed that students chunked sentences when he expected them to orally or mentally rehearse the full sentence while at the same time forming it and appraising its grammatical correctness. Then the student would retain the fully formed sentence in his memory while writing it.

Since the number of units of information, rather than the size of the unit, is the determining factor in how much information can be stored in the short term memory, this is an aid to comprehension. One way to increase linguistic pattern chunks is by embedding elementary or kernel sentences into other sentences. The ability to use or recognize such embeddings would be one way the more efficient writer or reader would differ from the less efficient one. The more efficient writer would be more syntactically mature and would be able to say more in

fewer words in writing, embedding more kernel sentences into each other to pack ideas more tightly together in a sentence. As embedding capacity increases, so does the capacity to recognize chunks rather than isolated words, thus producing a more efficient reader as well as writer.

Writing Competency Testing

Since the claim that students are unable to write well, as reported by Chew (1979), educators have been bombarded from every possible source with questions concerning this issue. Thus the move to competency testing has been suggested as one way to show that students graduating from high school do know how to write, at least at a minimum level of competency. Many states, including New York State, now have the requirement that students must demonstrate a certain level of competency on the given test or pass a Regents examination in English to fulfill the high school diploma requirements.

This writing competency test consists of three required pieces of writing; a business letter, a report based on given facts, and an example of persuasive discourse. Each task has a designated purpose and audience. Students must write, proofread, edit, and rewrite a final copy to adequately complete these tasks. These elements of the writing test are consistent with current discourse theory. Also the test has validity in its attempt to assess student writing.

A feature of this testing project is early identification of students who may have deficiencies in writing skills. The Preliminary Competency Test (PCT) is given in New York State at grade eight with

the first opportunity to take the Regents Competency Test being in the eleventh grade. Through evaluation and diagnosis of each student's writing problems at the eighth grade level, a program can be developed in the high school to help the student achieve competency in writing by the time he takes the RCT in eleventh grade.

The instruction must focus on both aspects of composing, the process and product. The process must be analyzed in light of the student's history as a writer, the writing practice he has had, pre-writing experiences, and the student's ability to attend to the demands of the writing task. The product must be analyzed in light of the rhetorical task, the relation of parts to unified whole, word choice, sentence syntax and mechanics.

Chew also reported that in one study of 700 papers written for the PCT, one reviewer of the business letter found a wealth of information about student writing:

64% of the papers had major or minor errors in acceptable business letter form

40% of the papers were grossly deficient in punctuation and capitalization

35% of the papers had severe syntax problems

25% of the papers had severe spelling problems

40% of the papers used inappropriate or offensive tone

30% of the students failed to follow directions.

With the business letter being considered the easiest of the three tasks, there is good reason to propose a strong writing program for schools. The New York State competency test guidelines indicate that

knowledge of current theory and research must underlie these programs. The fact that 35% of the business letters had severe syntax problems gives support for the use of sentence-combining exercises as part of the writing remediation program.

Reading Comprehension and Writing

As summarized by Ruddell (1965a), educators have long sought to control reading difficulty level. Adjusting reading material to the reader's level of competence has been of primary concern. Readability research has made important contributions, furthering the understanding of factors affecting reading comprehension.

Readability research has focused on the factors of: simple or complex measures of vocabulary, sentence length, and number of prepositional phrases, pronouns, affixes, and syllables per hundred words. Vocabulary has been identified as an important factor as indicated by the fact that it is part of every readability formula and by the high correlation between vocabulary knowledge and reading comprehension.

The only sentence structure factors used in predicting readability are number of simple sentences, number of prepositions or prepositional phrases, and sentence length. The consistent use of average sentence length in combination with a vocabulary measure has produced the highest reported prediction of readability of written material up to 1965, when Hunt introduced his T-unit as a measure of syntactic maturity.

Although some language structure factors have been identified, Strickland (1962), along with other researchers, has emphasized the need for more precise consideration of the organization of language

structure in the control of comprehension difficulty of reading material. Although in Strickland's own study she found no significant correlations between the complexity of sentence patterns in children's oral language and reading achievement in the primary grades, she further recommended that the effect on reading difficulty of the structural similarity in children's oral language patterns and written material encompassing these language patterns should be investigated.

Some educators concluded that one might improve children's reading comprehension not only by controlling more carefully the syntactic complexity of their reading material, but also by helping children acquire more explicit knowledge of basic syntactic units. Several experimental reading programs, such as Ruddell's (1965b), explored this hypothesis.

Ruddell (1965a) investigated the effect of the similarity of oral and written patterns of language structure on reading comprehension of fourth-grade children. He concluded that reading comprehension is a function of the similarity of patterns of language structure in the reading material to oral patterns of language structure used by children. Also, reading comprehension scores on materials that utilize high frequency patterns of oral language structure are significantly greater than reading comprehension scores on material that utilize low frequency patterns of oral language structure.

Smith (1970) studied the effects of transformed syntactic structures on reading of 120 students from grades four through twelve. The students performed the cloze procedure task on four passages at four levels of syntactic complexity. He found that elementary students in

grades four through six showed comprehension through appropriate completion of the cloze passages at the fourth grade level better than more difficult material, and secondary students in grades eight through twelve comprehended eighth grade material better than more difficult material. He concluded that the syntactic level at which the student writes influences or is influenced by the syntactic level at which he reads.

This supports Hunt's (1965 and 1970) findings on the developmental stages of written syntactic growth. If students have difficulty understanding syntactic structures in their reading that are more mature than they can produce in their own writings, then children's written productions are potent indicators of the structures in reading that they can comprehend easily. Therefore, the change in one area may bring about change in the other.

Fagan (1971) studied the question of whether the number and type of transformations in the language of a passage would affect reading comprehension. Using the cloze procedure with 400 fourth, fifth, and sixth-grade subjects, he found that deletions and embeddings tended to make sentences more difficult than the other transformations of conjoining, simple transformation and position shift. He concluded that sentence difficulty was more dependent on the presence and difficulty of transformations than on the difficulty of the passage, based on the complexity of the ideas therein. That was probably due to the redundancy of language within the passage. The number of transformations within a sentence was not found to affect the difficulty of comprehension. This did not agree with results of some previous researchers.

Fagan suggested that 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.

Up to 1971, the studies attempting to assess the relationship between language structure and reading comprehension tested the existing level of ability of the subjects. However, the reliability and validity of the instruments devised by the researchers to isolate and assess the syntactic aspects of language had not been proven. Researchers have suggested that the syntactic structures in reading should be equated to the syntactic structures used in the oral and written communication of students to improve their reading comprehension.

Stotsky (1975), however, maintains that the complexity of educational material should not be controlled by the oral or written language level of the student. Perhaps the structural understanding of the reading material could be enhanced by greater exposure to more complex syntax than the student could produce himself. Perhaps also, opportunities to listen to more complex language of children's literature could enhance comprehension. Finally, perhaps comprehension of more mature language could be stimulated by special writing activities.

Sentence-Combining and Reading Comprehension

Exploring the two related hypotheses that enhanced syntactic knowledge leads to improved reading comprehension and that enhanced syntactic skills gained through writing activities leads to improved

reading comprehension, recent researchers investigating the effectiveness of sentence-combining practice have investigated the added dimension of the effect of sentence-combining practice on reading comprehension. Some researchers (Hunt, 1965, 1970; Mellon, 1969; O'Hare, 1973; Schuster, 1977) have suggested that sentence-combining practice may contribute to increased reading comprehension. Other researchers administered tests for reading comprehension as part of their studies of the effects of sentence-combining practice, but found no significant gains in reading comprehension as a result of the writing treatment. Fisher (1973) administered both the cloze and standardized reading tests but found no significant increase in reading comprehension. Combs (1975) administered two reading measures and found no differential effect on either reading rate or comprehension scores on the Gates-MacGinitie test, but the experimental group scored significantly higher than the control group on the reading comprehension posttest of the other test. He concluded that the reading measures may be insensitive to the specific gains in reading rate and comprehension achieved through sentence-combining practice. Both Callaghan (1977) and Sullivan (1977) found no significant reading comprehension gains using a standardized reading test. Although there was no significant effect on reading ability in the Morenberg, Daiker, and Kerek (1978) study, the experimental group showed slightly higher gains. Tomlinson (1980), using the Metropolitan Achievement Test, found trends favoring the experimental group over the control group.

Takahashi (1975) compared the performance of ninth-grade slow readers with ninth-grade good readers and sixth-grade readers at both

levels on a test of syntactic comprehension. She concluded that the significant difference between the ninth-grade good and slow readers indicates that comprehension of syntax is a factor in the retarded comprehension of the slow readers. She also maintained that the difference between the scores of the ninth-grade slow readers and the sixth-grade readers indicates that they have different reading strategies. Furthermore, comparing ninth and sixth-grade readers shows that there are comprehension increases over grades.

Hughes (1975) conducted a study to determine whether transformational sentence-combining practice would aid students' reading comprehension by giving them a large repertoire of syntactic constructions from which to draw when matching constructions contained in materials they were expected to read. The findings of this study, involving 24 seventh-grade students for 13 weeks, indicated that there was a close link between reading level and syntactic maturity level. The experimental group made significant gains over the control group with the greatest gains in reading comprehension among the lower and middle groups or readers. The experimental group as a whole also made large gains over the control group in writing fluency. A comparison of the results of the reading and writing tests showed nearly a one-to-one correlation between reading level and syntactic maturity level.

Hughes (1978) found, in his study comparing United States and British children in the eight to eleven year old age range in the areas of reading and writing, that British children averaged eight to fourteen hours a week in the composing process, one hour in creative writing as a class, with the balance in self-directed writing. The

U.S. children averaged one half hour a month to two and a half hours per week in free writing. The British children were found to be superior to U.S. children in syntactic maturity as expected from the heavy writing emphasis in England. The British also showed significant gains over the U.S. children on all sentence-combining tests. Furthermore, the quality and quantity of writing produced in each composition was greater for the British children.

In Hughes' study, the reading percentiles obtained from standardized tests in both the U.S. and England correlated highly with the syntactic maturity scores. This is particularly surprising in view of the fact that the British children were not taught reading in a formal way. There were no basals or reading workbooks found in the British schools cooperating in this study as were found in the cooperating U.S. schools. The British children read from children's literature and trade books for pleasure and to find information. The U.S. children in this study averaged six and one half hours per week on reading, much in the formal reading groups.

Since the British children scored significantly higher on syntactic maturity than the U.S. children of the same age, this could suggest that time spent in writing may indeed be more beneficial to reading as well as to writing than so much time spent on reading skills.

Straw (1979), in a five week study with 124 fourth grade students, investigated the effect of sentence-combining and sentence-reduction instruction on measures of syntactic fluency, listening comprehension and reading comprehension. Posttest data indicated that the sentence-combining instruction had a more significant effect than the textbook

approach on the reading cloze test. However, posttest scores on the standardized reading comprehension test were not significant for any treatment. Straw suggests that the standardized reading comprehension instrument was not sensitive to the gains recorded by the other research instruments employed in the study. Finally, the individual reading predicatability affected all measures significantly.

Researchers have maintained that the knowledge of syntactic structures as learned through sentence-combining practice may be the same syntactic knowledge needed for reading comprehension. However, little conclusive evidence has been found in present research. Therefore, researchers should continue to experiment in these areas.

Summary

Research has indicated that students develop language skills as they develop mentally and chronologically. The term syntactic maturity has been used as a descriptor of the stages of oral and written language development. However, this term was considered too subjective to be used to compare various writings. Hunt developed an objective measure, the T-unit, which is considered to be the best index of syntactic maturity.

Language-usage rules have long been taught to students in the attempt to aid them in achieving correctness in their written expression. However, recent research has indicated that practice in forming and manipulating syntactic structures, a process called sentence-combining, has achieved significant growth in the syntactic maturity level of

student writing without the necessity of students knowing and using language usage rules.

Many research studies have shown sentence-combining to be an effective technique for improving student writing by increasing the syntactic maturity level of the written product as measured by Hunt's T-units. The need for an effective way to improve student writing has been heightened by the recent requirement that students show a minimum level of competency in their writing before becoming eligible for high school graduation. Thus sentence-combining has been suggested as one technique to be used where writing remediation is necessary to improve a student's writing to an acceptable level.

Researchers have stated that the syntactic knowledge necessary for reading comprehension is the same as is necessary for comprehensible writing. Therefore increasing a students' syntactic knowledge might increase the syntactic maturity level of his writing and the level of comprehension of his reading. Since sentence-combining practice has been shown to be an effective technique for increasing the syntactic maturity level of student writing, it may also increase the level of reading comprehension. However, this premise has had little research support as yet.

Chapter III

Design of Study

Purpose

The purpose of this study was to investigate the effect of sentence-combining practice on the syntactic maturity level of ninth-graders' free writing and structured writing and on their reading comprehension scores.

Hypotheses

The null hypotheses investigated in this study were as follows:

1. There is no significant difference in the syntactic maturity level of structured writing between a group instructed in sentence-combining and a control group as measured by the evaluation of structured writing following the treatment period.
2. There is no significant difference in the syntactic maturity level of free writing between a group instructed in sentence-combining and a control group as measured by the evaluation of free writing following the treatment period.
3. There is no significant difference in the reading comprehension level between a group instructed in sentence-combining and a control group as measured by the evaluation of reading comprehension following the treatment period.

Methodology

Subjects

The subjects involved in this study were ninth-grade students attending a rural high school in a predominantly middle class school district. Ninth-grade students were chosen based on the assumption that they would benefit from remedial writing assistance at this level.

In a study of ninth-graders, Callaghan (1977) investigated the effects of sentence-combining exercises on the growth of syntactic maturity, quality of writing, reading ability, and attitudes of students. Based on this study, the researcher was further encouraged to investigate ninth-graders' writing and reading ability.

A total of 36 students participated in this study. The 21 experimental students were from one ninth-grade compensatory English class. The 15 control students were from two other ninth-grade English classes taught by a different teacher. Prior to the instructional period, the experimental class and the control class were statistically equated on the basis of IQ, the results of a reading comprehension test, and the syntactic maturity level of structured and free writing samples. The number of control students was reduced from the total population of the two English classes taught by the second teacher due to the inaccessibility of the students to complete the post treatment testing.

Instruments

The three evaluative measures administered at the beginning were also used eight weeks later at the end of the treatment period, which also corresponded with the end of the instructional period for the

school year. The first series of tests was administered to equate the two groups, with the second series administered to measure the difference between the two groups. The tests were administered by the classroom teachers and evaluated by the researcher.

The structured writing test in both situations was the same 32 kernel sentence "Aluminum" passage designed by O'Donnell (Hunt & O'Donnell, 1970), which has been established as a reliable measure of syntactic maturity (see Appendix A for the complete test). The directions for rewriting this passage were: "Read the passage all the way through. You will notice that the sentences are short and choppy. Study the passage and then rewrite it in a better way. You can combine sentences, change the order of words or omit words that are repeated too many times. But try not to leave out any of the information." The structured writing was evaluated in terms of the mean T-unit length of the completed passages of the two groups as described by Hunt (1965).

The free writing in both situations involved the writing of an essay within a 30 minute time period with a suggested length of 300 words. There was no instruction given regarding the format of the writing since the term "essay" was familiar to all the students. The topic for the equative essay was "My Best Vacation." The post-treatment essay topic was "Looking Back on the School Year, the Good and the Bad." The free writing was evaluated in terms of the mean T-unit length of the completed writing as was the structured writing.

The Reading Comprehension section of the Iowa Silent Reading Test was administered to all subjects in both situations. Form E was used to equate the two groups and Form F was used to compare the two groups

following the treatment period. This test consisted of 50 items in a multiple choice format designed to measure the students' ability to comprehend detail, to reason in reading and to evaluate what had been read. The mean number of questions answered correctly by each group was the comparative data for this study.

Procedure

Both groups of students were taught the regular curriculum in English, but by two different teachers. Sentence-combining practice was added to the experimental group's activities to the extent that it did not interfere with the completion of the regular curriculum.

The experimental treatment consisted of 12 sentence-combining exercises completed over a period of six weeks (see Appendix B for the 12 exercises). The exercises were selected by the researcher in a sequence of increasing length from Strong's Sentence-Combining: A Composing Book (1973). Each exercise consisted of sets of kernel sentences listed numerically and grouped by a space between each set of kernel sentences. It was suggested by the author that each set be combined into a single sentence. Further or alternate combinations of the kernel sentences were allowed and encouraged by the teacher.

Fifteen sentence-combining lessons had been planned for this study. Research by Callaghan (1977) and Sullivan (1977) reported that students in their studies who had completed 15 lessons made gains as great or greater than those who had completed 30 lessons. However, the pressure on the teacher of the experimental class to meet the demands of the English curriculum forced the study to be limited to 12 lessons.

The presentation of these exercises was varied as to the teacher's involvement in the completion of the exercises and in the depth to which the exercises were analyzed. The first few exercises were discussed in class with various sentence combinings for each group of kernel sentences into one complex sentence being suggested by the class members. The teacher led the discussion and offered comment and encouragement. Following the oral discussion the students independently wrote out the exercises. In the subsequent lessons, after a limited teacher-led class discussion of various basic syntactic structure alternatives, the students completed the exercises as homework assignments. Class discussion of the assignment was held the day following the completion of each homework exercise. The students volunteered, either orally or by writing on the chalkboard, various sentence combinings for the exercise. Alternate combinings of the same set of sentences were encouraged and compared for varying structures which were semantically similar. The sixth lesson was evaluated by the researcher in terms of the mean T-unit length and the results were rank ordered for the 21 students to give them feedback as to their success in completing the exercise. Comments of praise for understanding the technique and a critique of the syntactic structures and mechanics used by the student were written on each individual paper. Syntactic structures present in the top ranking papers were discussed in class. The other exercises were not formally evaluated. However, the students were encouraged to compare their sentence combinings with the examples given in class and generally assess their own success in completing the combinings.

Analysis of Data

For the structured and free writings, the mean T-unit length was determined for each of the two groups. The t test for independent means was used to analyze the data.

For the reading comprehension test, the mean number of questions answered correctly was compared between the two groups, also using the t test.

Summary

A comparison of the test results was made between two groups of ninth-grade students to equate the groups prior to the treatment period and again to measure the differences between the two groups following the treatment period. This design was used to ascertain the effects of the sentence-combining practice on the syntactic maturity level as measured by the mean T-unit length of the student writings in two formats, structured and free writing. In addition, the possible effects of sentence-combining practice on reading comprehension were also investigated.

The total population of 36 ninth-grade students in the experimental and control groups was equated in terms of IQ and pre-treatment scores.

During the six-week treatment period, the experimental group focused attention on various syntactic sentence structures by writing the exercises and by class discussion of these exercises.

The data were analyzed by means of the t test for independent means.

Chapter IV

Analysis of Data

Purpose

The purpose of this study was to determine the effect of sentence-combining practice on the syntactic maturity level of the writing and the level of reading comprehension of ninth-grade students enrolled in a compensatory level English class. The indicators of syntactic maturity in this study were structured writing and free writing.

Findings and Interpretations

The null hypotheses investigated in this study were as follows:

1. There is no significant difference in the syntactic maturity level of structured writing between a group instructed in sentence-combining and a control group as measured by the evaluation of structured writing following the treatment period.
2. There is no significant difference in the syntactic maturity level of free writing between a group instructed in sentence-combining and a control group as measured by the evaluation of free writing following the treatment period.
3. There is no significant difference in the reading comprehension level between a group instructed in sentence-combining and a control group as measured by the evaluation of reading comprehension following the treatment period.

The experimental and control groups were equated prior to the treatment period on the basis of structured writing level, free writing level, reading comprehension scores and IQ. For the structured and free writings, the mean T-unit length was determined for each writing situation for each group. The t test for independent means was used to analyze the data. For the reading comprehension test, the mean number of questions answered correctly was compared between the two groups, also using the t test for independent means. The IQ scores were obtained from the student's permanent school record. The t test for independent means was again used to compare the mean scores of the two groups. The data used to equate the experimental and control groups are listed in Table 1.

Table 1
Pretreatment Comparison of the Experimental
and Control Groups

	Experimental N = 21	Control N = 15	<u>t</u> -value
Structured Writing	9.32	9.76	.6997 NS
Free Writing	12.42	12.50	.1053 NS
Reading Comprehension	41.71	43.87	1.0996 NS
IQ	108.88	107.93	.2294 NS

$p < .001$ $\underline{t} = 3.551$ $df = 34$

There were no significant differences between the scores of the two groups before the treatment period.

After a series of twelve sentence-combining lessons within six weeks, the experimental and control groups again completed structured and free writing exercises and the reading comprehension test. The t test for independent means with the critical value of 3.551 at the .001 level of significance was used to analyze the data. The data used to determine the effect of the sentence-combining practice are listed on Table 2.

Table 2
Posttreatment Comparison of the Experimental
and Control Groups

	Experimental N = 21	Control N = 15	<u>t</u> -value
Structured Writing	13.15	9.99	3.611 p < .001
Free Writing	13.39	12.33	1.1545 NS
Reading Comprehension	40.29	40.73	.2135 NS

p < .001 t = 3.551 df = 34

The first null hypothesis was rejected. There was a significant difference between the group instructed in sentence-combining and the control group in the post treatment measure of the syntactic maturity level of structured writing.

The data failed to reject the second null hypothesis. There was no significant difference between the group instructed in sentence-combining and the control group in the post treatment measure of the

syntactic maturity level of free writing. There was a trend toward a higher level of syntactic maturity in the free writing of the experimental group over the control group but not at a significant level.

The data failed to reject the third null hypothesis. There was no significant difference between the group instructed in sentence-combining and the control group in the post treatment measure of reading comprehension.

Summary

The result of the analysis of the data of the three areas investigated showed that the experimental group had a significantly higher mean T-unit length for the structured writing than did the control group. A trend existed in favor of the experimental group with a mean T-unit length of the free writing higher than that of the control group, but the difference was not at a significant level. There was no significant difference in the scores of the reading comprehension test between the two groups.

Chapter V

Conclusions and Implications

Purpose

The purpose of this study was to determine the effect of sentence-combining practice on the syntactic maturity level of the writing and the level of reading comprehension of ninth-grade students enrolled in a compensatory level English class. The indicators of syntactic maturity used in this study were structured writing and free writing.

Conclusions

The following conclusions can be drawn from analysis of the data of the subjects studied.

The first null hypothesis was rejected. There was a significant difference between the group instructed in sentence-combining and the control group in the post-treatment measure of the syntactic maturity level of structured writing.

The second null hypothesis was not rejected. There was no significant difference between the group instructed in sentence-combining and the control group in the post-treatment measure of the syntactic maturity level of free writing.

The third null hypothesis was not rejected. There was no significant difference between the group instructed in sentence-combining and the control group in the post-treatment measure of reading comprehension.

The results of the t test analysis revealed that there was a significant difference only in the structured writing. This suggests that sentence-combining practice does indeed increase the students' syntactic maturity level of writing in a structured writing situation. A type of structured writing is the sentence-combining exercise.

The trend of the treatment group to have a higher mean syntactic maturity level in the free writing than the control group may be the result of sentence-combining practice. However, since the free writing was a single draft generation of ideas, with no emphasis on sentence structure imposed by the assignment, the students assumably used the sentence structures which were automatic to their writing, not the alternate or higher level structures that they had been made aware of in the sentence-combining practice, unless these structures had indeed become an automatic part of their sentence structure repertoire. Had there been time or opportunity for the students to revise and condense their essays, the syntactic maturity level may have indeed been higher, since the students would have been aware of the syntax of the essay as well as the semantics.

When compared with the normative data presented by Hunt (1965), the treatment group's writings in both the structured and free writings showed evidence of a level of syntactic maturity well beyond that typical of tenth-graders. The control groups' writings compared with Hunt's seventh-grade level for structured writing and ninth-grade level for free writing. It is interesting to note that, given the semantic knowledge, these students were unable to use their syntactic repertoire to write at as

mature a level as they could when they had to use both their own syntactic and semantic knowledge. It may be possible that their own ideas were dependent on their syntactic ability to generate them.

Perhaps the students' increased ability to "know how to say it" would also increase their ability to "know what to say." The alternative explanation is perhaps also plausible. The students already had ideas or "knew what to say" but were unable to generate syntax to present these ideas. Sentence-combining practice, making them aware of "how to say it," might release them from these syntactic roadblocks.

The sentence-combining process may well have involved semantic as well as syntactic considerations when the students had to consider: How does the sentence sound?, Does it make sense?, Does it include all the information from the kernel sentences?

The reading comprehension levels of both the experimental and control groups were statistically similar after the treatment period as well as when the two groups were equated. Comparing the actual scores of the two groups, both groups scored lower on the reading test after the treatment period than before. This may be due to the lack of interest on the part of the students because it was a repetition of the same test format they had just eight weeks earlier. Also, the test was given during exam week which was an added burden on them at that time. Multiple choice questions are easy to complete by just putting down any letter without seriously reading the material first. This could have been done by the students.

This lack of attention to the assignment is not so easy to accomplish in a writing situation where a product has to be generated. However, this

may have affected the results in all of the post treatment measures. It may have been the students' sense of responsibility to the teacher which influenced the experimental students to perform at a higher level as well as their increase in ability.

A close observation of the reading scores reveals that the experimental group's scores decreased less than the control group's, which may be meaningful. However, there are too little data and too many variables which may have influenced the scores to be able to speculate on the significance of the observation.

Also, the syntactic knowledge of the student as applied to a reading situation may not have been evaluated by this reading comprehension test. Therefore, there may be effects on reading comprehension as a result of sentence-combining practice to which this test was insensitive.

The assumption that the students did not give serious attention to the post treatment tasks may give added strength to the contention that the sentence-combining practice had more effect than obvious by the results of this study. If the syntactic knowledge gained from completing the sentence-combining exercises was not consciously applied in the post treatment exercises, it may have been the internalized knowledge of syntax which showed through.

The results of this study are applicable only to the group studied and can not be generalized to all compensatory ninth-grade students, all ninth-grade students or any students at any grade either higher or lower.

Implications for Further Research

The results of this study suggest the further examination of the effects of sentence-combining practice on structured writing, free writing, and reading comprehension. This research may take the form of this study or explore the effects of sentence-combining practice in a variety of other ways. There is a need for more research with a larger population at various grade and ability levels. The study needs to be varied as to length of the treatment period, time of year when the treatment is given and the intensity of the sentence-combining practice. There is a need to research the correlation between free and structured writing based on the students' syntactic maturity level. Also a longitudinal study should be conducted to determine whether the growth rates are sustained.

The question of the students' attitude toward the sentence-combining exercises needs further investigation. Do the students enjoy the exercises and can this interest be sustained in longer programs?

The question of whether there is a ceiling on the complexity or maturity level a sentence can reach before it becomes incomprehensible needs to be investigated. Also the incidence of "syntax-errors" in applying syntactic structures to material in an inappropriate relationship needs further research.

The list of possible syntactic structures and stylistic variants is unending, so there would conceivably be an unending possibility of appropriate sentences. There is a need to research whether the syntactic structures should be taught in any hierarchy.

The effect on the quality of writing as a result of sentence-combining practice needs further research. Some research has already shown, that in a forced choice situation, the writing of the student who has had sentence-combining practice has been judged significantly better. Also, other possible ways to evaluate the quality of writing needs further investigation.

The question of whether there is any connection between syntactic maturity and cognitive maturity needs to be investigated along with whether an increase in one effects the other. Also the whole area of cognitive processing needs further investigation.

There is a need for further investigation of the various reading comprehension tests and an identification of the skills and abilities that are being tested. The cloze technique as a reading comprehension assessment needs research to determine whether it correlates with the standardized reading comprehension tests and the T-unit syntactic maturity index.

Research may reveal that the analysis of reading passages for the syntactic maturity level can be an added measure of readability. Also the analysis of writing samples for syntactic maturity level may be used as a basis for determining the appropriate level of reading material for instruction. Readability formulae based on T-unit length may prove to be more significant than sentence length.

There is a need for a more detailed analysis of the reading processing the students go through when interpreting what they read. There is a need to know more about the hierarchy of difficulty involved

in both the production and interpretation of various syntactic structures. The results of such research could improve the designing of instructional materials to develop systematically with the students' ability to comprehend the material.

Implications for Classroom Practice

Sufficient research has shown sentence-combining practice to be effective as a writing technique at all levels, although the types of structures to be taught at various levels still need further investigation. The sentence-combining technique should be especially effective at the time when students are expected to develop to a higher level of writing maturity, when writing in high school. Since sentence-combining practice expands to a conscious level, the number of syntactic opinions available to the writer when he is engaged in the composing process, the use of sentence-combining would be especially effective in the revision stage of a composition.

Previous studies have suggested that, in reading, the identification of various syntactic structures and the relationship between ideas which they signify should aid in the comprehension of the reading material especially in the content areas. The teacher could use the technique of giving the students the main ideas and details of a content area topic in kernel sentences and then instructing them to synthesize the material into a paragraph of their own which reflects the interrelatedness of the ideas.

There are a variety of signalled and unsignalled sentence-combining techniques which can be used in a wide variety of ways to teach sentence

structure, writing mode, and subject matter. These techniques might also be incorporated into the activities used to teach English as a second language.

Summary

Based on the analysis of the data, the conclusion can be drawn that sentence-combining practice does lead to an increased level of syntactic maturity in writing as measured by the repeated completion of a piece of structured writing, which in reality is an exercise in sentence-combining.

The increased level of syntactic maturity did not appear to carry over to the free writing at a significant level. This was possibly due to student emphasis on the generation of ideas within the given time period, which did not allow for the revision and condensation of ideas. In the structured writing situation, where the ideas were presented, all the time allowed was spend condensing and revising sentence structure.

As the student becomes consciously aware of the syntactic structures he can use in his writing, he may also recognize these structures in his reading and thus better comprehend the interrelated ideas there expressed. This premise was not substantiated by the present study, possibly because the instrument may not have measured the knowledge and use of syntax in a reading situation.

Interest in writing maturity and the interrelatedness of writing and reading skills open numerous areas which need further research and gives support for the use of sentence-combining exercises in the classroom.

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Appendix A
Syntactic Maturity Test

Syntactic Maturity Test

Aluminum

Directions: Read the passages all the way through. You will notice that the sentences are short and choppy. Study the passage, and then rewrite it in a better way. You may combine sentences, change the order or words, and omit words that are repeated too many times. But try not to leave out any of the information.

Aluminum is a metal. It is abundant. It has many uses. It comes from bauxite. Bauxite is an ore. Bauxite looks like clay. Bauxite contains aluminum. It contains several other substances. Workmen extract these other substances from the bauxite. They grind the bauxite. They put it in tanks. Pressure is in the tanks. The other substances form a mass. They remove the mass. They use filters. A liquid remains. They put it through several other processes. It finally yields a chemical. The chemical is powdery. It is white. The chemical is alumina. It is a mixture. It contains aluminum. It contains oxygen. Workmen separate the aluminum from the oxygen. They use electricity. They finally produce a metal. The metal is light. It has a luster. The luster is bright. The luster is silvery. This metal comes in many forms.

Appendix B

Sentence-Combining Exercises

SENTENCE-COMBINING

LESSON 1

FRENCH FRIES

1. French fries are loaded into a basket.
2. The French fries are white.
3. The basket is wire.

4. Then they are lowered.
5. The lowering is slow.
6. The lowering is into oil.

7. Their bath crackles.
8. Their bath foams.
9. Their bath is hot.

10. The potatoes release a puff.
11. The potatoes are thinly sliced.
12. The puff is steam.

13. They come out crispy brown.
14. They come out streaked with oil.

Suggested Combining for Lesson 1

French Fries

The white French fries are loaded into a wire basket.

Then they are slowly lowered into oil.

Their hot bath crackles and foams.

The thinly sliced potatoes release a puff of steam.

They come out crispy brown and streaked with oil.

The white French fries are loaded into a wire basket which is then slowly lowered into their crackling, foaming, hot oil bath.

The thinly sliced potatoes release a puff of steam before they come out crispy brown and streaked with oil.

Note: Work through the first few combining exercises with the students orally. Then each student is to write out the exercise using the suggestions along with his own ideas for combining the ideas. There is no right or wrong answers. Only, some combining forms are better than others.

SENTENCE-COMBINING

LESSON 2

COFFEE

1. He sips at his coffee cup.
2. The cup is chipped along the rim.
3. The taste is bitter.
4. The taste is acidic.
5. The taste is faintly soapy.
6. There is a film.
7. The film is brown.
8. The film is on the inside of his cup.
9. He takes extra care.
10. The care is so that he doesn't spill any on his clothes.
11. He is afraid.
12. The fear is that it might eat holes in the material.

Suggested Combining for Lesson 2

Coffee

He sips at his coffee cup which is chipped along the rim.

The taste is bitter, acidic, and faintly soapy.

There is a brown film on the inside of his cup.

He takes extra care so that he doesn't spill any on his clothes.

He is afraid that it might eat holes in the material.

He sips at his chipped along the rim coffee cup which tastes bitter, acidic, and faintly soapy from the brown film on the inside of it.

He takes extra care so that he doesn't spill any on his clothes for

he is afraid that it might eat holes in the material.

SENTENCE-COMBINING

LESSON 3

PATROL

1. Harris checks in at 4:00.
2. Jones checks in at 4:00.
3. They have taken care of the reports by 5:00.
4. They have taken care of the forms by 5:00.
5. Then they hustle downstairs.
6. They hustle through the dispatch office.
7. They hustle into the garage.
8. Their car is gassed up.
9. It is ready for the night's patrol.
10. They wheel out of the station.
11. They wheel into the rush-hour traffic.
12. The radio squawks its coded numbers.
13. It squawks its dispatches.
14. It squawks its orders.
15. They nod to the people they know on the street.
16. They wave to the children.
17. But the evening stretches before them.
18. It stretches uneasily.

Extra activity: Write about what happens next in this scene.

Suggested Combining for Lesson 3

Patrol

Harris and Jones check in at 4:00.

They have taken care of the reports and forms by 5:00.

Then they hustle downstairs, through the dispatch office and into the garage.

Their car is gassed up and ready for the night's patrol.

They wheel out of the station and into the rush-hour traffic.

The radio squawks its coded numbers, dispatches and orders.

They nod to the people and wave to the children they know on the street, but the evening stretches uneasily before them.

Having checked in at 4:00, Harris and Jones have taken care of the reports and forms by 5:00 when they hustle downstairs, through the dispatch office and into the garage where their car is gassed up and ready for the night's patrol.

They wheel out of the station into the rush-hour traffic while the radio squawks its coded numbers, dispatches and orders.

They nod to the people and wave to the children they know on the street, but the evening stretches uneasily before them.

SENTENCE-COMBINING

LESSON 4

JUST BEFORE THE RAIN FALLS

1. The wind comes up.
2. It bends the trees.
3. The bending is in a rhythm.
4. The rhythm is against the sky.

5. There is a darkening.
6. It is as if the sky were poisoning itself.

7. Clouds scud across the horizon.
8. The clouds are fat.
9. The clouds are grayish.
10. The scudding is low.

11. A hush gentles the wind.
12. The trees suddenly go still.

13. A boy looks up from his play.
14. The boy is little.
15. He looks at the trees.
16. The trees are no longer making a noise.

17. He feels something on his arm.
18. The something is light.
19. The something is wet.

20. And then it begins to rain.
21. It rains like hell.

Suggested Combining for Lesson 4

Just Before the Rain Falls

The wind comes up and bends the trees in a rhythm against the sky.

There is a darkening as if the sky were poisoning itself.

Fat grayish clouds scud low across the horizon.

A hush gentles the wind so that the trees suddenly go still.

A little boy looks up from his play to the trees which are no longer making a noise.

He feels something light and wet on his arm.

And then it begins to rain like hell.

The wind comes up and bends the trees in a rhythm against the sky.

There is a darkening of fat grayish clouds scudding low across the horizon as if the sky were poisoning itself.

A hush gentles the wind so that the trees suddenly go still while a little boy looking up from his play to the trees which are no longer making a noise, feels something light and wet on his arm.

And then it begins to rain like hell.

Note: Sometimes short sentences are used for emphasis.

SENTENCE-COMBINING

LESSON 5

The Potter

1. The potter works with clay.
2. He is skilled.
3. He sits at his wheel.
4. His brow is wrinkled.
5. The wrinkles show concentration.
6. His hands are slender.
7. His hands are aged.
8. The clay is damp.
9. The clay is earthen.
10. The clay is a mass.
11. The mass is sodden.
12. It resists form.
13. He centers the clay.
14. The clay revolves on the wheel.
15. It is writhing against his hands.
16. He makes an opening.
17. He pierces the mass.
18. The mass is clay.
19. He uses his fingers.
20. He uses his thumbs.
21. His hands lift the clay.
22. The clay becomes a shape.
23. The shape is cylindrical.
24. One hand enters the cylinder.
25. The cylinder is revolving.
26. The other hand pushes against the sides.
27. It works the shape.
28. The sides begin to expand.
29. The expansion creates a bowl.
30. It is ringed with lines.
31. The potter's face is contented.
32. The face is smiling.
33. The smile is tranquil.
34. He has conquered the clay.
35. The wrinkles have vanished.
36. The wrinkles were on his forehead.
37. The vanishing is for the time being.

SENTENCE-COMBINING

LESSON 6

American Unfreeway

1. The cars creep onto the freeway.
2. The cars crawl their way west.
3. Honks announce the Great Parade.
4. Bleats announce the Great Parade.
5. The Great Parade is to the suburbs.
6. The drivers are hot.
7. The drivers are tired.
8. The drivers are anxious to get home.
9. There is a sign.
10. The sign is on the highway.
11. "Speed 70."
12. Cars move at 5 miles an hour.
13. Then cars move at 15 miles an hour.
14. But no cars go 70.
15. No cars even go 50.
16. Cars stop.
17. Cars start.
18. Cars change lanes.
19. Cars stop again.
20. An announcer croons excitement.
21. The announcer is on the radio.
22. The radio is in the car.
23. The excitement is for a race.
24. The race is the Indianapolis 500.
25. The race will be held this weekend.
26. A thousand spits begin to turn.
27. The spits are in the suburbs.
28. The spits are for barbecues.
29. The spits are electric.
30. Clock-watching wives await.
31. Restless children await.
32. The waiting is for the return.
33. The return is for the Great Provider.
34. The Great Provider is part of the Great Parade.

SENTENCE-COMBINING

LESSON 7

Consumption

1. Statistics can be used.
2. One use is to compute averages.
3. The averages are about Americans.

4. An American is born.
5. The birth occurs every four seconds.
6. This rate of occurrence is an average.

7. This American lives seventy years.
8. Seventy years is an average.

9. And what does one "average American" consume?

10. He consumes food.
11. The food is of all kinds.
12. Some food is packaged.
13. Some food is unpackaged.
14. The amount is 50 tons.

15. He consumes iron.
16. He consumes steel.
17. This consumption is in a form.
18. The form is products.
19. The products include cars.
20. The products include appliances.
21. The products include clips.
22. The clips are for paper.
23. The amount is 28 tons.

24. He consumes 1,200 barrels.
25. The barrels are products.
26. The products are made from petroleum.

27. He consumes fibers.
28. The fibers are for clothing.
29. The amount is 1 1/2 tons.

30. He consumes wood.
31. The wood is used for construction.
32. The wood is used for paper.
33. The amount is about 4,500 cubic feet.

LESSON 7 (Continued)

34. The result of this consumption is waste.
35. The waste comes in all forms.
36. Some pollutes the air.
37. Some litters the environment.
38. Some pollutes the water.
39. The waste amounts to about 100 tons.

40. Anyone for population stability?
41. Anyone for population reduction?

SENTENCE-COMBINING

LESSON 8

Orchard

1. The orchard was behind a house.
2. The house belonged to a grandfather.
3. The grandfather was mine.

4. It was a place to visit.
5. The place was a favorite.
6. The visiting was in the fall.
7. The visiting was after school.

8. The trees stood in rows.
9. The trees were gnarled.

10. You were alone.
11. You could listen to the bees.
12. The bees worked.

13. Apples were there.
14. They hung from the boughs.
15. They were ready for picking.
16. They were ready for eating.

17. The air was sweet.
18. The air was heavy.
19. It smelled of fruit.
20. The fruit was ripe.
21. The fruit would soon be rotting.

22. Juice would run down your chin.
23. You would wipe it.
24. The juice was from an apple.
25. The wiping was with a sleeve.

26. Then you would notice the leaves.
27. The leaves were turning.
28. The turning was brown.
29. The turning was golden.

SUGGESTION: Maybe you can think of a "good place" that never changes in your memory. Be there again. Then write about it.

SENTENCE-COMBINING

LESSON 9

HOME

1. He entered the house.
2. It was one room.
3. It was dark.
4. It smelled musty.
5. There was a hole in the ceiling.
6. Sunlight shone through the hole.
7. Dust danced on the light.
8. There was a stove.
9. The stove burned wood.
10. The stovepipe was crooked.
11. The pipe was covered with soot.
12. A cupboard stood in the corner.
13. The cupboard was old.
14. The cupboard had windows.
15. The windows were glass.
16. The glass was cracked.
17. Dishes were inside.
18. The dishes were few.
19. The dishes were mismatched.
20. There was a table.
21. The table had two leaves.
22. The table was round.
23. The table was creaky.
24. There was a bed.
25. The bed was small.
26. The bed was iron.
27. The bed had a mattress.
28. The mattress was dirty.
29. The mattress was gray.
30. The mattress was striped.
31. The floor was wooden.
32. The floor was cracked.
33. The floor was warped.
34. The warps were wavy.
35. The floor had mouse tracks.
36. The tracks were many.
37. The house was miserable.
38. The house was worthless.
39. The house was an inheritance.
40. But the house was something.
41. The house belonged to him.

SENTENCE-COMBINING FOR LESSON 9

HOME

He entered the dark, musty-smelling, one room house.
Dust danced on the sunlight which shone through the hole in the ceiling.
There was a wood burning stove with a soot-covered, crooked stovepipe.
The old cupboard which stood in the corner had cracked glass windows.
There were a few mismatched dishes inside.
There was a round, creaky table with two leaves.
There was a small iron bed with a dirty, gray, striped mattress.
The wooden floor, cracked and with wavy warps, had many mouse tracks.
The miserable worthless house was an inheritance.
But the house was something which belonged to him.

HOME

When he entered the dark, musty-smelling, one room house, dust danced on the sunlight which shown through the hole in the ceiling. There was a wood burning stove with a crooked, soot-covered stovepipe. In the corner stood an old cupboard with cracked glass windows inside which were a few mismatched dishes. There was also a round, creaky, two leaved table and a small iron bed with a dirty, gray striped mattress. On the wooden floor with its cracks and wavy warps were many mouse tracks. This miserable, worthless house was an inheritance, but it belonged to him.

SENTENCE-COMBINING

LESSON 10

AUTOMATIC SHARPENER

1. He gripped the two ears.
2. They were chromed.
3. They were on top of the sharpener.
4. The sharpener was new.
5. The sharpener was self-feeding.
6. He pressed them together.
7. The pressing was between his thumb.
8. The pressing was between his forefinger.
9. The grippers were spring-loaded.
10. The grippers opened in an "O."
11. The "O" was small.
12. The "O" was like lips about to whistle.
13. He pushed the pencil in.
14. He slid the yoke.
15. The yoke was for clamping.
16. The yoke went up the pencil.
17. The pencil was new.
18. The pencil was yellow.
19. He watched the grippers.
20. They dug in.
21. The machinery was set.
22. He turned the handle.
23. The turning was slow.
24. The turning was forward.
25. The turning was in circles.
26. He felt the tip.
27. The tip was blunt.
28. It ground away.
29. The grinding was under a press.
30. The press was made of edges.
31. The edges were for cutting.
32. He squeezed the ears together.
33. He let the vise snap.
34. It snapped against the sharpener.
35. The pencil had a tip.
36. It was black.
37. It was pointed.
38. The point was clean.
39. It was a cone.
40. The cone was perfect.
41. The cone was graphite.
42. The cone was above a row.
43. The row was of teeth marks.
44. The teeth marks were mechanical.

SUGGESTED COMBINING FOR LESSON 10

AUTOMATIC SHARPENER

He gripped the two chromed ears on the top of the new self-feeding sharpener and pressed them together between his thumb and forefinger. When the spring-loaded grippers opened in a small "O," like lips about to whistle, he pushed the pencil in and slid the clamping yoke up the new yellow pencil. He watched the grippers as they dug in, setting the machinery. As he slowly turned the handle forward in circles, he felt the blunt tip being ground away under the press of the cutting edges. He squeezed the ears together and let the vise snap against the sharpener. The pencil had a black clean-pointed tip which was a perfect graphite cone above a row of mechanical teeth ~~marks~~.

SENTENCE-COMBINING

LESSON 11

TELEVISION

1. Television can help us see.
2. We see the pattern.
3. The pattern is life.
4. The life is in America.

5. Television can help us to understand.
6. We understand events.
7. The events unite us.
8. The events divide us.

9. Consider an example.
10. The example is death.
11. The death was of leaders.
12. The leaders were political.
13. The leaders included John Kennedy.
14. The leaders included Martin Luther King, Jr.
15. The leaders included Robert Kennedy.

16. These deaths united the nation.
17. The unification was profound.

18. Grief became an experience.
19. Shame became an experience.
20. The experience was shared.
21. The whole nation shared.

22. Television let us participate.
23. The participation was intense.
24. The participation was dramatic.
25. The participation was in events.
26. The events were historical.

27. We were joined.
28. The joining was with other people.
29. The joining was for a few moments.
30. The moments were electric.

LESSON 11 (Continued)

31. An event happened.
32. The event was similar.
33. The event was in 1969.
34. The event was the landing.
35. The landing was on the moon.
36. The event was the walk.
37. The walk was man's.
38. The walk was first.
39. The walk was on the moon.

40. Here the occasion was joyful.
41. The occasion was exciting.
42. The occasion was a "step."
43. The step was for mankind.
44. The step was giant.

45. But television can also divide us.
46. The dividing is from each other.

47. The dividing has occurred in confrontations.
48. Confrontations were between young and old.
49. Confrontations were between radicals and conservatives.
50. Confrontations were between police and students.
51. Confrontations were between blacks and whites.
52. Confrontations were between hawks and doves.
53. The confrontations have dramatized feelings.
54. The feelings are beneath the surface.
55. Society has a surface.

56. The confrontations have shown Americans.
57. The Americans are in conflicts.
58. The conflicts stem from our policy.
59. The policy is in Southeast Asia.
60. The conflicts range to busing.
61. The busing is of school children.

62. Such events have provided an opportunity.
63. The events are spectacular.
64. The opportunity is for bigots.
65. The bigots promote thinking.
66. The thinking is stereotyped.

67. These confrontations have infected our wounds.
68. The wounds are social.
69. The wounds are emotional.

LESSON 11 (Continued)

70. So television does more than transmit.
71. The transmission is of movies.
72. The transmission is of ~~weather~~.
73. The transmission is of variety shows.
74. The transmission is of sports.

75. Television helps shape our feelings.
76. The feelings are toward each other.
77. The feelings are toward ourselves.
78. Television sometimes unites us.
79. Television sometimes divides us.

SENTENCE-COMBINING

LESSON 12

OPERATION BREADBASKET

1. Operation breadbasket is a project.
2. The project is intended to bring pressure.
3. The pressure is on business.
4. The businesses are white.
5. The businesses often discriminate.
6. The discrimination is against blacks.

7. The operation has been organized.
8. The organizers are leaders.
9. The leaders are in the black community.

10. Its aim is to improve conditions.
11. The conditions are economic.
12. The conditions have oppressed blacks.
13. The conditions have oppressed for years.

14. Its tool is the boycott.
15. The tool is most effective.
16. The tool is used.
17. Its use is widespread.

18. (A boycott is a refusal.
19. The refusal is by a group.
20. The refusal is to patronize a business.
21. The business is unfair.
22. The unfairness is to the group.)

23. Sometimes the business is a store.
24. The group does not buy there.
25. The group urges its friends.
26. The urging is not to buy there.
27. The store loses money.

28. Sometimes the business manufactures things.
29. The things are sold to stores.

30. Scrubbo Company makes soap.
31. Scrubbo Company does not hire blacks.
32. The soap is sold in many stores.

33. The group does not buy Scrubbo.
34. The group tells the storeowners.
35. "Blacks won't buy Scrubbo.
36. Scrubbo Company does not hire Negroes."

LESSON 12 (Continued)

37. The storeowners complain to Scrubbo Company.
38. The storeowners stop stocking Scrubbo.
39. Scrubbo Company loses money.

40. Operation Breadbasket has aims.
41. The aims are specific.
42. The aims are long range.

43. The project has hopes.
44. The hopes are to increase the jobs.
45. The jobs are for blacks.
46. The hopes are to increase the sales.
47. The sales are of products.
48. The products are made by blacks.

49. And it has already gotten results.
50. The results are impressive.
51. The results are by means.
52. The means are nonviolent.
- 53.
53. It has helped numbers of blacks.
54. The numbers are large.
55. The help is to get jobs.
56. The jobs were "not available" before.

57. It has helped products.
58. The products are many.
59. The products are black.
60. The products are to be sold.
61. The selling is in stores.
62. The stores did not carry the products before.

63. It has helped blacks to work.
64. The working is together.
65. The working is for survival.
66. The survival is their own.
67. The survival is in business.

68. Operation Breadbasket has been a project.
69. Operation Breadbasket has been successful.