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Marianna W. Davis

TRANSFORMATIONAL GRAMMAR AND WRITTEN SENTENCES

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TRANSFORMATIONAL GRAMMAR AND WRITTEN SENTENCES

by

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FOREWORD

With the publication of Noam Chomsky's *Syntactic Structures* in 1957, many articles have been published in criticism or in support of the grammar outlined in Chomsky's book. Few studies have been conducted in schools to determine the merit of transformational–generative grammar in relation to basic communication skills. Even fewer studies have been conducted among educationally disadvantaged students, particularly at the junior high school level.

William Labov attacks the notion of 'verbal deprivation' among users of a non-standard dialect. He believes that the teacher must approach the teaching of the standard through a knowledge of the child's own system, that before imposing middle class verbal styles upon children of other cultures or sub-cultures, he must find out how much of this is useful and how much is dysfunctional. Politzer and Bartley have made worthwhile contributions in this area by analyzing the elements of syntax used by speakers of both standard English and non-standard dialects.

A relationship exists between grammar and composition, for a knowledge of grammar provides one with an understanding of the system of language and writing. This understanding, however, does not preclude the innate human capacity for meaningful communication.

This book deals with a linguistic approach to writing through work with groups of students enrolled at the Lewis Junior High School in Roxbury, an area of Boston, Massachusetts. Specifically, it deals with a comparative analysis of sentences written by eighth grade students instructed in traditional grammar and in transformational–generative grammar. No consideration was given to vocabulary growth or stylistic effects. Emphasis in the analysis of sentences was placed on a description of the structure of written sentences.

It is evident in this book that although the students in this study spoke a non-standard dialect as well as standard English, their writing patterns surpassed any notion of verbal deprivation. In fact, their sentences displayed an abundance of thought patterns as well as qualifying elements.

This book is written primarily for the classroom teacher, the curriculum designer, and the researcher in language. The chapters follow a plan of study, with supportive statistical tables that are not difficult in design or interpretation.

Finally, this book has far-reaching implications in teaching language and composition in schools located in all geographical regions of the United States.

CONTENTS

LIST OF TABLES

LIST OF SYMBOLS

To facilitate reading of the results of the study, symbols for the major dependent variables and the internal components of these variables are used as follows:

NP	Noun Phrase Variable
NP–1	noun subject
NP–2	simple noun modifier
NP–3	verbal modifier
VP	Verb Phrase Variable
VP–1	main verb
VP–2	auxiliary verb
VP–3	simple verb modifier
PE	Predicate Expansion Variable
PE–1	complement (one-word complements)
PE–2	phrase (object or modifier)
PE–3	clause (dependent — object or modifier)
Clauses	Total clauses written per 200 words

INTRODUCTION

Fundamental to success in written composition are conscious awareness of syntactic correctness and conscious control of well-formed sentences.

The impetus in the teaching of composition, traditionally and largely in modern times, seems to be the development of this awareness and control in students through instruction in formal grammar. Yet, reports of controlled research in written composition show that instruction in the formal grammar found in schools texts — a weakened version of the traditional grammar of English[1] — has little or no effect upon the writing skills of students. An earlier but extensive review of research on teaching composition by H. C. Meckel finds that reviews of educational research continually emphasize the fact that instruction in self-styled 'school' grammar has little or no effect upon the language skills of students.[2] Similarly in a comprehensive analysis of research in written composition sponsored by the National Council of Teachers of English in 1963, Braddock and his committee note that one of the most heavily investigated problems in the teaching of writing concerns the merits of formal 'school' grammar as an instructional aid, and then state:

> In view of the widespread agreement of research studies based upon many types of students and teachers, the conclusion can be stated in strong and unqualified terms: the teaching of formal grammar has a negligible or, because it usually displaces some instruction and practice in actual composition, even a harmful effect on the improvement of writing.[3]

A new grammar, TRANSFORMATIONAL–GENERATIVE, seems to offer promise to instruction in written composition. Transformational–generative grammar

[1] As found in the works of traditional grammarians such as: Otto Jespersen, *Growth and Structure of the English Language* (Basil Blackwell, Oxford, London, 1948); and George O. Curme, *English Grammar* (Barnes & Noble, New York, 1947).

[2] H. C. Meckel, "Research on Teaching Composition and Literature". *Handbook of Research on Teaching*, N. L. Gage, Ed. (Rand McNally Company, Chicago, 1963).

[3] Richard Braddock, Richard Lloyd-Jones, Lowell Schoer, *Research in Written Composition* (National Council of Teachers of English, Champaign, Illinois, 1963) pp. 37—38.

attempts to (1) provide a theoretical concept that spells out two categories of sentences, namely kernels and transforms, (2) establish a set of simple rules that are capable of generating the sentence types of English — an infinite corpus of events, and (3) claim priority in establishing classroom techniques for improving performance in composition. As Thomas[4] describes transformational–generative grammar, it is one that contains symbols and rules; the rules allow for combining the symbols in various ways to produce English sentences. Thus, the new grammar, in effect, 'generates' or 'enumerates' sentences.

Chomsky points out that transformational–generative grammar gives simple rules that eliminate many of the irregularities of traditional grammar; this is the kind of gain that brings language operations into systematic and conscious form. Chomsky further states:

> A grammar of a language should at least be expected to offer a characterization of the set of objects that are sentences of this language, i.e., to enable its user to construct a list or enumeration of these utterances.[5]

Thus, transformational–generative grammar constructs a system of rules that allows the user of language to arrange these rules in new and previously untried combinations in forming and interpreting sentences. These rules specify the structure of each sentence of the language; conscious control of the sentences underlies mastery of the language.

Despite its promise, transformational–generative grammar has not been and to a great degree still is not the focus of extensive research in curriculum development. In 1961 Paula Menyuk[6] conducted a study to determine if Chomsky's model of syntactic structures is capable of describing a children's grammar as a self-contained system and of indicating developmental trends. She worked with nursery school and first grade children of families who ranked in the upper 24% range of a total population. With similar objectives, Bateman and Zidonis[7] conducted an experimental study to determine if the new grammar has pedagogical promise for the teaching of English. They experimented with ninth and tenth grade students in a laboratory school at Ohio State

[4] Owen Thomas, *Transformational Grammar and the Teacher of English* (Holt, Rinehart & Winston, Inc., New York, 1965).

[5] Noam Chomsky, *Third Texas Conference on Problems of Linguistic Analysis in English* (University of Texas Press, Austin, Texas, 1962) pp. 125—126.

[6] Paula Menyuk, "A Descriptive Study of the Syntactic Structures in the Language of Children: Nursery School and First Grade". Unpublished Doctoral Dissertation (Boston University, 1961).

[7] Donald R. Bateman and Frank J. Zidonis, *Effect of a Knowledge of Generative Grammar Upon the Growth of Language Complexity* (Ohio State University, Columbus, Ohio, 1964, Project 1746, Office of Education, U. S. Department of Health, Education, and Welfare).

University. These two studies, along with later studies, have established sufficient grounds for exploration of transformational–generative grammar as a curriculum innovation. However, at the present time, more controlled research is needed to discover in what ways direct instruction in the structural grammar or, more particularly, because of the strong claims made for it, direct instruction in transformational–generative grammar effects student skill in written composition.

A basic consideration in curriculum making is the diversity of learners within a framework. The program in English should be built on this basis along with the aspects of scope, sequence, and interrelationships. We find, however, that textbooks are stressing practices and concepts in speaking, writing, reading; they advocate more and more drills on key problems of usage and grammar as well as visual approaches to language. As Lefcourt[8] found in examining five series of English language textbooks of the Indiana State Board of Education, linguistic theory is not yet evident as an influence on the content of textbooks to any significant degree. Likewise, Faust's[9] examination of ten English language textbooks most widely used in our ten largest cities for the occurrence of thirty–three linguistic concepts approved by five outstanding jurors finds only ONE concept significantly responded to by all texts. That is, the concept occurs to the extent that the user of the text is able to grasp the concept in question. Thus, from her investigation, Faust concluded that the most widely used texts that were analyzed continue to approach the study of the English language conventionally, only a relatively small average percentage of the linguistic concepts having been significantly incorporated into the textbooks.

That junior high school pupils can learn to write powerful sentences and learn to understand the underlying essence of this power is evident in learning theories such as that of Jerome Bruner,[10] who believes that when language is internalized the possibilities for manipulation and for consideration of hypothetical occurrences are vastly increased. When the pupil learns how to gain exact meaning from the written word through word order, simple transforms, and through a thorough understanding of the kernel sentence, he can then manipulate his syntactic structures in such a manner that they become meaningful and powerful. Significantly, then, workbooks that are used in a large

[8] Ann Bunch Lefcourt, "An Examination of Five Elementary English Textbook Series, Grades Two Through Eight, Employing a Linguistic Score Card Devised for that Purpose", Unpublished Doctoral Dissertation (Ball State Teachers College, Colorado, 1963).

[9] Naomi B. F. Faust, "The Extent to Which Pivotal Linguistic Concepts are Incorporated into Selected English Language Textbooks of Secondary School", Unpublished Doctoral Dissertation (New York University, 1963).

[10] Jerome Bruner, "The Course of Cognitive Growth". *American Psychologist* 19 (January 1946): 1–15.

percentage of junior high school English classes provide little opportunity for such manipulation. Sentence structure, therefore, should be taught, not for its own sake, but rather for the clarification of thinking through a manipulative medium.

Needless to say, educators have not been without warning. In a study of sentence analysis as early as 1932, Catherwood[11] found that among secondary pupils there was less improvement in the ability to recognize complete sentences from Grades 7–9 than from 9–11. LaBrant, aware of the ineffective teaching approaches to syntax, stated her opinion on this matter in *We Teach English;*

> We still have thousands of classrooms in which, under the guise of promoting clear writing, teachers use exercises which require students to punctuate sentences, the like of which no student ever wrote, to correct errors deliberately made by some unknown writer, and to complete fragments whose purpose had its origin in an undisclosed situation, at an unmentioned time.[12]

Unlike traditional grammar, the rules of transformational–generative grammar provide a syntactic means of reworking the actualities one has experienced. This grammer disregards the mere enumerating of elements of the sentence; rather, it allows for a more abstract view of the grammatical structure of a sentence than traditional grammar allows. This generative grammar allows also for a fresh perception of syntax, offers realistic insight in developing the ability to use sentences with increasing skill and power.

That grammar teaching should begin with syntax is a simple fact of transformational–generative grammar theory; the kernel sentence is the initiating step of syntactic functions — subjects, predicates, complements. Thus, a study of the sentence structure that involves the main ideas of this new grammar allows for sound integration of two important aspects of the language arts program — grammar and composition. The Commission of English pursues this point quite succinctly:

> Since grammatical study can be both illuminating and useful, it should ordinarily be made a part of the curriculum in such a way as to exploit its potential usefulness. This means that learning the name of grammatical elements should coincide with the use of those names in meaningful activity, not in drill for the sake of drill; that complexities of syntax should be identified and their functions made apparent as they are encountered, as well as in anticipation of such encounters; that constant

[11] Catherine Catherwood, "A Study of Relationships Between a Knowledge of Rule and Ability to Correct Grammatical Errors and Between Identification of Sentence and Knowledge of Subject and Predicate". Unpublished Master's Thesis (University of Minnesota, 1932).

[12] Lou LaBrant, *We Teach English* (Harcourt, Brace Company, New York, 1951) p. 143.

application rather than yearly review should be the means of keeping grammatical knowledge and terminology active.[13]

Going a step further, Rosenbaum, in his essay concerning the implications of transformational–generative grammar for the teaching of English, stresses the role of the educator in recognizing significant findings of scholarly research:

> The mere fact that the answers to various educational problems do not spring forth full bloom from the linguistic research on transformational grammars does not imply that the results of this research will fail to provide a new and valuable dimension in which to consider traditional problems in the teaching of English. This fact simply asserts that a linguistic description does not enumerate educational benefits. It remains not with the linguistic theory or description, but with the informed educator, whether he is a teacher, linguist, or specialist informed in both areas, to determine the applicability of valid linguistic results to the teaching of English.[14]

Since transformational–generative grammar is relatively new, however, its principles and procedures have not been tested to any appreciable extent.

This study was designed as an investigation of the claims of transformational–generative grammar. Its essential purpose was to explore the effects of direct instruction in the kernel sentences of transformational–generative grammar and in paralleled concepts of traditional grammar upon student writing. A comparative analysis of sentences written by eighth–grade students, before and after, with and without instruction, focused upon four variables for each sentence:

(1) The noun phrase element,
(2) The verb phrase element,
(3) The predicate expansion element,
(4) The average length of clause.

The procedure used in analyzing the data provided opportunities to investigate the following related aspects:

(1) Age differences in sentence structure,
(2) The extent of relationship between sentence variable scores and achievement test scores in paragraph meaning,
(3) The extent of relationship between sentence variable scores and intelligence quotient scores.

[13] Commission on English, *Freedom and Discipline in English* (College Entrance Examination Board, New York, 1965) p. 178.

[14] Peter Steven Rosenbaum, "On the Role of Linguistics in the Teaching of English". *Harvard Eeducational Review* 35 (Summer, 1965): 342.

This experimental study involved direct instruction of 100 concept–lessons of transformational–generative grammar, designed by the investigator for the fifty students in the Experimental Group, and 100 concept–lessons of traditional grammar, taken from the regular text–book for the fifty students in the Control Group. While it is not incidental the two groups of students were Black, this investigator's primary purpose was one of syntactic findings. The study covered a period of approximately 14 weeks for pre-test, direct instruction, and post–test. The two groups of students were divided into four instructional classes and taught by the same teacher at a selected school — Lewis Junior High School, Roxbury, Massachusetts.

Obviously, a study of this nature, limited in purpose and length of time, has its limitations. It does not (1) involve instruction in the transformational operations on the kernel sentences of transformational–generative grammar, (2) encompass instruction of a full range of rhetorical features in written composition, (3) concern instruction in vocabulary building. Nonetheless, it is this writer's opinion that this limited study has some implications for linguistic theory of transformational–generative grammar, teaching of composition in elementary and secondary schools, and while not the specific purpose of this study, some relevance to the teaching of students whose language habits are inhibited.

II

BACKGROUND: LINGUISTICS AND WRITING

Teachers of English have always been aware of the complexities of teaching students how to write clear, effective sentences. In the last three decades, ways of determining the components of 'good' sentences have been pursued through semantic approaches and grammatical approaches. Only recently have the combined results of psychological and linguistic studies played a significant role in determining ways of analyzing language competence and maturity of writers of the English language.

Literature in the teaching of written English reflects concepts that have meaning for students on the elementary, secondary, and college levels. Related research falls into three categories: improving sentence structure, measuring sentences, and applying concepts of transformational grammar to language and learning.

A. ELEMENTARY SCHOOL — TEACHING OF WRITING

Psychologists have for some time questioned the value of language instruction which is irrelevant to the immediate environment of the child. That there should be a clear relation between language opportunities and meaningful utility in teaching practices in the elementary school is strongly supported by current theories of learning. Anderson[1] and Hildreth[2] recognized this aspect many years ago. At that time relatively few studies had been done on the best methods of helping the child to increase his power of written communication. By 1947 Watts'[3] publication became available to American readers. Studying writing habits of pupils in British schools, he concluded that as children's writing skills advanced, they tend to use simple sentences contain-

[1] John E. Anderson, "Principles of Growth and Maturity in Language". *Elementary English Review* 18 (November, 1941): 250–254.

[2] Gertrude Hildreth, "Interrelationships Among the Language Arts". *Elementary School Journal* 48 (June, 1948): 538–549.

[3] A. F. Watts, *The Language and Mental Development of Children* (D. C. Heath & Company, Boston, 1947).

ing prepositional phrases and infinitive expressions in place of clauses. Although his conclusion is converse to LaBrant's findings in 1932, he did advocate the teaching of only those syntactic constructions that have meaning for the elementary school child — informal rather than formal language instruction.

The Commission on the English Curriculum,[4] recognizing a child's ability to speak simple sentences by the time he enters school, saw the need for elementary teachers to help pupils understand the operation of an effective written sentence, to provide writing opportunities, and to help pupils appraise written sentences.

By 1960, Strickland[5] reported that research regarding the development of clarity and maturity in the structure of children's sentences indicates linguistically oriented approaches to language problems and habits of elementary school children. Although she criticizes the lack of controlled research concerned with evaluating the compositions of young children, she believed that mere increase in the number of dependent clauses is not the only means of determining growth beyound the simple sentence. LaBrant's findings in 1932[6] supported the theory that length of clause and type of clause appear as significant measures of sentence maturity, but Strickland's point of view is supported by more recent research. An educational report on research[7] in language skills among elementary children stated that the young child determines the rules of his grammar from the speech in his environment. Thus, he is able to understand and to produce utterances that are quite intelligent.

B. SECONDARY SCHOOL — TEACHING OF WRITING

In 1917 the Hosic report[8] criticized the teaching of composition in American secondary schools. Instruction was too formal and literary, being dominated by highly sophisticated grammatical and rhetorical analysis. The report pointed out a need for reducing time for formal composition and increasing time for

[4] Commission on The English Curriculum, National Council of Teachers of English, *The English-Language Arts in the Secondary School* (Appleton-Century-Crofts, New York, 1956).

[5] Ruth G. Strickland, "Evaluating Children's Composition", *Elementary English* 37 (May, 1960): 321–331, and Ruth G. Strickland, "Some Basic Issues in the Teaching of English", *Phi Delta Kappan* 41 (May, 1960): 332–335.

[6] Lou LaBrant, "Changing Sentence Structure of Children", *Elementary English Review* 11 (March, 1934): 59—65, 85—86.

[7] Janellan Huttenlocker, "Children's Intellectual Development", *Review of Educational Research* 35 (April, 1965): 114—121.

[8] James F. Hosic, *Reorganization of English in Secondary Schools*, Bulletin No. 2 (U. S. Department of the Interior, Bureau of Education, Washington, D. C., 1917).

informal communication, both speaking and writing. Mirrielees,[9] in 1931, also urged that teachers of English omit much of the formal grammar and concentrate on teaching functional approaches to syntax.

A constant reassessing of the nature of language and a constant questioning of pedagogical implications for written communication were strongly urged by distinguished teachers and research scholars of English. Davison[10] argued that arduous, persistent digging is necessary before one can extract meaning from grammatical propositions, that the teaching of grammar is concerned first with the picture of structure. She admitted that a knowledge of sentence patterns can be helpful to the student, for, as a tool, it enables him to understand the realm of ideas with greater confidence. But she insisted that a student has sentence power only when he gains exact meaning from the written word, when he understands the order in which words combine to express that meaning. LaBrant[11] continued the plan for discarding exercises which require students to perform meaningless tasks. DeBoer, Kaulfers, and Miller[12] and Mirrielees[13] all agreed that a teacher of secondary-school English must be aware of the importance of teaching sentence structure; the liberation of thought, the clarification of thinking through a manipulative medium should be the main reasons for such instruction. Hook pointed out that teaching sentence structure can be rational and meaningful to high school students; far too many teachers make the structure appear more complicated than it actually is. He stated: "A study that uses more traditional terminology than that of the structural linguists shows that 92.1 per cent of modern American printed sentences fall into only five basic patterns or combinations."[14]

An overview of the literature of writing instruction in secondary schools shows that the emphasis was on helping students to increase command over the structural patterns of English. How to promote this principle has been and still is a major instructional problem for teachers, but certain conclusions, based on recent liguistic research, are already in evidence.

The literature — text–books and curriculum guides — of the 1960's reflect a modest revolution of the English curriculum. Evidence of linguistic concepts and approaches to language study and written composition exist in English

[9] Lucia B. Mirrielees, *Teaching of Composition in High School* (Harcourt, Brace and Company, New York, 1931).

[10] Ethel B. Davison, "Power From Sentence Patterns", *English Journal* 39 (September, 1950): 379–84.

[11] LaBrant, *We Teach English*, p. 143.

[12] John DeBoer, Walter Kaulfers, Helen Rand Miller, *Teaching Secondary English* (McGraw-Hill Book Company, New York, 1951).

[13] Lucia B. Mirrielees, *Teaching Composition and Literature in Junior and Senior High School* (Harcourt, Brace Company, New York, 1952).

[14] Julius N. Hock, *The Teaching of High School English* (Ronald Press, New York, 1959) p. 312,

curriculum guides of only a few school systems. Usually the principles relate to descriptive structural linguistics.

Long[15] advocates a revision, not a revolution of English grammar. He states that the grammar of the 1960's should pursue the following steps:

(1) Begin with analysis of the structure of clauses, that are built around minimally complete sequences called kernels.
(2) Set up part–of–speech categories on the basis of syntactic functions characteristically performed and types of modifiers characteristically accepted.
(3) Accept the word as the smallest unit in syntactic analysis and accept written language practice in deciding what are words and what are not.
(4) Describe syntactic patternings.

Roberts,[16] Mellon,[17] and Ennemark[18] advocate that the first minimum test of adequacy of a general theory of sentences is that the theory assign a syntactic structure to sentences of a given language. Rhetorical implications in their works have special meaning for secondary school English.

Rosenbaum,[19] in his discussion of linguistics in the teaching of English, stresses the recently developed professional attitudes of teachers toward linguistic insights which have potential educational value. He states that a transformational approach to language study can make meaningful contributions to the teaching of English. Results of such an approach might be utilized in:

(1) The content of the English curriculum in general,
(2) The evaluation of certain traditional criteria employed in the evaluation of compositions,
(3) A possible explanation for the continuing lack of correlation between instruction in grammar and improved performance in the literate skills.

[15] Ralph B. Long, "English Grammar in the 1960's", *College English* 21 (February, 1960): 265–275.

[16] Paul Roberts, *English Sentences* (Harcourt, Brace, World, Inc., New York, 1962).

[17] John Mellon, *A Grammar for English Sentences: The Basic Sentence Types and Their Simple Transforms* (Culver Military Academy Press, Culver, Indiana, 1964).

[18] Mary Ennemark, "Two Units and a Sequence of Lessons for Teaching the Language Arts in Grade Ten", Unpublished Master's Thesis (School of Education, Boston University, 1965).

[19] Rosenbaum, "On the Role of Linguistics in the Teaching of English": 342.

C. TRANSFORMATIONAL-GENERATIVE GRAMMAR

The term GENERATIVE comes from mathematics; in ordinary English it means 'characterize explicitly'. The central aim of linguistics is to determine how people communicate by means of a language; thus the need for a generative grammar is evident. Teeter, in a script of a kinescope on generative grammar, states:

> The deepest component of a generative grammar is syntax, the study of how sentences are constructed. Whatever theory we may have as to the nature of thoughts, it is evidently via syntax first of all that they are expressed in language, for it is syntax which tells us how words which stand for concepts are interrelated. Furthermore, it is in syntax that the grammarian finds so-called 'recursive' rules, rules which can in principle generate infinite sets of sentences and thus account for the fundamental ability of language users to do just this. Hence, the nature of syntax is the central concern of generative grammar.[20]

Chomsky[21] was led to establish a whole level of grammatical transformations. The phrase–structure rules are used to generate only the kernel sentences. All other grammatical sentences of the language can be generated by means of the transformations. For example, 'What are they laughing at?' can be described as a what–question transform of 'They are laughing at it.' Thus Chomsky's theory allows for a special set of sentences for every language — the kernels. They are derived by the nonrecursive phrase–structure level of the grammar. Other sentences are considered to be more complex. They are derived by the application of transformations to the kernels. In 1959, Chomsky reacted to Skinner's book *Verbal Behavior* by stating:

> There is no support for the doctrine that slow and careful shaping of verbal behavior through differential reinforcement is an absolute necessity. Often times a child picks up a second language in the streets, from other children, to the extent that he speaks this language fluently and correctly. Also, a child can construct and understand new phrases or utterances. Even the adult is able to understand "new" sentences that he reads in a newspaper. All of this indicates that there must be a real and significant process at work that is independent of the "feedback" from the environment.[22]

Later, Chomsky stated: "It seems evident that perception of grammatical relations in a sentence does not depend on a prior and independent identification

[20] Karl V. Teeter, *Grammar and Generative Grammar* (Commission on English of the College Entrance Examination Board, Boston, 1965) pp. 8–9.

[21] Noam Chomsky, *Syntactic Structures* (Mouton & Company, The Hague, The Netherlands, 1957).

[22] Noam Chomsky, Review of *Verbal Behavior* by B. F. Skinner, *Language* 35 (1959): 42.

of semantic properties, and that the study of grammatical structure seems to be, in fact, quite independent of meaning."[23] He asserted further that the "Learnability of language forces us to assume that it is governed by some kinds of rules. When we learn our native language we make some very complicated inductions. If these inductions are systematic, if follows that language is systematic."[24] By 1964, Chomsky[25] felt that overwhelming concern with perception and acquisition of language had camouflaged the basic point of view: the creative aspects of language use, that is, forming and understanding previously unheard sentences.

Pursuing the weakness of the traditional approach to grammar, Rosenbaum states succinctly:

> Whatever else a traditional grammar may contain notwithstanding, the deficiencies of the traditional approach can be traced ultimately to the fact that the goal of linguistic inquiry was, for the traditionalist, not a matter of justification but a matter of description."[26]

Rosenbaum's ideas are in accord with those of Lees[27] and other transformationalists. Thomas[28] sees the transformationalists as "traditional" in many of their aims, for they rely on intuition in developing their theory. But they also draw upon the findings of the historical, comparative, and descriptive grammarians. Of significance, therefore, is that the transformationalist seeks to describe and explain a native speaker's intuition with respect to his language.

D. STUDIES RELATED TO IMPROVING WRITING SKILLS

Experimental studies in improving the writing skills of students range from the techniques of sentence structure improvement to correlations between grammar and writing ability to forms of discourse desirable for evaluating the

[23] Noam Chomsky, "Some Methodological Remarks on Generative Grammar", *Word* 17 (1961): 232.

[24] Noam Chomsky, "A Transformational Approach to Syntax", *Third Texas Conference on Problems of Linguistic Analysis in English* (The University of Texas Press, Austin, Texas, 1962) p. 181.

[25] Noam Chomsky, *Current Issues in Linguistic Theory* (Mouton & Company, The Hague, The Netherlands, 1964).

[26] Peter Steven Rosenbaum, "The Grammar of English Predicate Complement Constructions", Unpublished Ph. D. Dissertation (Massachusetts Institute of Technology, 1965) p. 197.

[27] Robert B. Lees, "The Promise of Transformational Grammar", *English Journal* 52 (May, 1963): 327–330, 345.

[28] Owen, *Transformational Grammar*,

writing of students. The most significant findings point up the lack of correlation between knowledge of formal grammar and written language skills of students.

In a recent report on research in written composition, the authors[29] agree with a colleague who feels that elaborate empirical studies in composition should not take precedence over studies that concern the particularities of the sentence. Symonds and Hinton[30] earlier propounded this same point of view.

Johnson[31] and Catherwood[32] conducted studies to determine the kinds of errors persistent in sentences written by pupils and to determine the relationship of the knowledge of rules of grammar and ability to correct grammatical errors. Conclusions from these two studies showed that ability of children to explain verb usage doubles between Grades 7 and 9, but their ability to use verbs remains relatively stable and that errors in sentence structure are more serious and persistent than are the more mechanical errors of grammar and punctuation.

Frogner[33] made an analysis of 2,821 compositions written by 959 pupils in three junior and three senior high schools of Minneapolis. Each pupil wrote a narrative, social newsletter, and an exposition. She studied the following errors in order to secure evidence of the pupils' control over sentence usage: (1) writing of clauses and phrases as sentence fragments; (2) using awkward and unintelligible complex sentences; (3) running together ideas in the so-called 'run-on' sentences or by the illegitimate use of the 'comma splice'. Frogner found that pupils between Grades 7 and 9 show less progress in sentence control than pupils between Grades 9 and 11 show; this finding was evidenced through various errors in sentence structure and difficulty of employing dependent clauses and participial phrases to simple sentence structure. She concluded that there is a need for greater emphasis upon relationship in thought and the recognition of value of dependent sentence elements that contribute to the major idea. On the basis of the study conducted in Minneapolis, Frogner[34] later conducted an experimental study with ninth and eleventh graders. The purpose was to discover the relative effectiveness of two methods in the teaching of many specific items of sentence structure: (1) a

[29] Braddock, Lloyd-Jones, and Schoer, *Research in Written Composition*, pp. 37–38.

[30] Percival M. Symonds and Eugene M. Hinton, "Studies in the Learning of English Composition: Sentence Structure", *Teachers College Record* 33 (February, 1932): 430–438.

[31] Roy I. Johnson, "A Study of Errors in English". Unpublished Master's Thesis (University of California, 1917).

[32] Catherine Catherwood, "A Study of Relationships".

[33] Ellen Frogner, "Problems of Sentence Structure in Pupils' Themes", *English Journal* 22 (November, 1933): 742–749.

[34] Ellen Frogner, "Grammar and Thought Approaches in Improving Sentence Structure", *School Review* 47 (November, 1939): 663–675.

grammar method, with stress on grammatical concepts, principles combined with attention to thought; (2) a thought method, with emphasis on the expression of ideas with no teaching of grammar whatsoever. Conclusions of the study were:

(1) The pupils in the grammar classes showed more knowledge of grammar than those in the thought classes.
(2) Through general tests covering the class work of the semester, the thought classes showed superior results in sentence structure.
(3) Although results of unit tests in individual elements of sentence structure given immediately following the unit did not favor either group, the thought approach makes for longer retention of the fundamental abilities involved.
(4) In both grades, ninth and eleventh, the thought approach was definitely superior for pupils of high intelligence — 105 and above.

Barlow[35] designed a study to improve the ability of ninth grade pupils to handle various sentence patterns in written composition. She used twenty ninth grade classes under the direction of ten teachers. The population of 360 pupils constituted the experimental and control groups. The Control Group studied sentences according to the teachers' customary plan, the writer having verified the comparability of content to that of the lesson series. The Experimental Group utilized the author's lesson materials. Throughout the experiment, emphasis was placed upon the writing of clear, well-wrought sentences; grammatical elements were presented from the viewpont of their function in conveying ideas and in varying the structural patterns. Barlow concluded that both the experimental and control groups showed significant gain in sentence control — as measured by the sentence structure test — but the experimental group was superior.

Kraus[36] concerned her study with the basic question: what motivates students to write effective sentences? She proceeded to find out what methods of instruction in sentence structure are most effective. Conducting the study at a high school in Eugene, Oregon with eleventh graders, she sought to help pupils express their thoughts more clearly. She used three procedures:

(1) Five units of sentence structure were logically presented and taught according to the thought approach but in which the students did no original writing.

[35] Elizabeth R. Barlow, "Improving Sentence Patterns in Written Composition in Grade Nine", Unpublished Doctoral Dissertation (Boston, University, 1954).
[36] Silvy Kraus, "A Comparison of Three Methods of Teaching Sentence Structure", Unpublished Doctoral Dissertation (University of Minnesota, 1956).

(2) The same five units were taught in exactly the same way, but the students wrote weekly themes.
(3) All sentence structure items were taught only as the result of errors made in weekly themes which students wrote in connection with a literature unit.

Kraus concluded that actual writing that concerns relationships of ideas is far more meaningful to students than writing that concerns mere grammatical relationships. Her conclusions were found to be in agreement with those of Frogner.

Harris[37] attacked the problem of the relationship of functions and values of formal grammar to the teaching procedure for written English. He compared two classes of pupils in each of five London schools. The Formal Grammar Group was taught a logically organized program of traditional grammar, while the Direct Method Group was taught the elements of sentence building and structure which came to the teachers' attention as they read the children's writing. At the end of the two-year experiment, results showed that good progress was made by the Formal Group in learning the nomenclature and use of grammar. But through comparative composition analysis, the Direct Method Group showed greater significant statistical growth. Harris concluded that there was a lack of effective tie between a relatively high grammatical score and improvement in the measured items of the essay. Also, since the 228 pupils came from a range of socio-economic background, Harris concluded that failure to profit from instruction in traditional grammar is thus not confined to any one environment or category of children.

Seegers[38] indicated in 1933 that a mode of discourse — argumentation, exposition, narration, description — affects a person's sentence structure. Kincaid,[39] in his experimental study, sought to determine whether a single paper written by a student on a given topic at a particular time constituted a valid basis. He evaluated 320 papers written by college students between the fall term of 1951 and the winter term of 1952. Kincaid based his research on four hypotheses:

[37] Roland Harris, "An Experimental Inquiry into the Functions and Values of Formal Grammar in the Teaching of English with Special Reference to the Teaching of Correct Written English to Children Aged Twelve to Fourteen", Unpublished Doctoral Dissertation (University of London, 1962).
[38] J. C. Seegers, "Forms of Discourse and Sentence Structure", *Elementary English Review* 10 (March, 1933): 51–54.
[39] Gerald L. Kincaid, "Some Factors Affecting Variations in the Quality of Students' Writing", Unpublished Doctoral Dissertation (Michigan State University, 1953).

(1) That any given topic provides the same stimulus as any other topic.
(2) That any given topic elicits constant response at different times.
(3) That the psychological pressure of the examination situation has no adverse effects on the quality of student writing.
(4) That the quality of student writing is stable from topic to topic and from time to time, with or without the pressure of an examination, regardless of variation in writing ability.

He concluded that validity of a student's writing cannot be established through a single paper on a single topic at a particular time.

Buxton[40] experimented with 257 college freshmen to determine if regular practice in writing would result in a significant improvement in writing skill. He used two writing methods: freedom from restraint (no marginal marks nor grades) and revision (marginal marks, grades, revision by students). The Control Group did not write assignments required of the other two groups. His conclusions were significantly in favor of the Revision Group. Perhaps most significant was Buxton's conclusion that since the students in the three groups did not show significant differences in their gain on the two objective post-tests but did so in their gain on the post-test essay examination, it may be seen that essays can be used to measure changes which may not be measured by objective tests.

E. MEASURING SENTENCE GROWTH

The LaBrant[41] study is regarded as a classic experiment which concerns the length of clauses and frequency of subordinate and main clauses to determine the writing patterns and abilities of school children. The study proposed to investigate the language development of children from Grades 4 to 9, inclusive, using the clause as the unit of comparison. LaBrant further proposed to discover only 'how' the child expressed himself, not 'why' he did so. The written compositions of 1,007 persons, designated as Groups A, B and C, ranging in mental age from 101 months to superior adult level, were examined, and the total number of clauses used by each individual classified. Group A consisted of 482 children enrolled in Grades 4 to 9, inclusive; Group B consisted of 504 students enrolled in Grades 9 to 12, inclusive; Group C consisted of 21 psycho-

[40] Earl W. Buxton, "An Experiment to Test the Effects of Writing Frequency and Guided Practice Upon Students' Skill in Written Expression", Unpublished Dissertation (Stanford University, 1958).

[41] Lou LaBrant, "A Study of Certain Language Developments of Children in Grades Four to Twelve, Inclusive", *Genetic Psychological Monographs* 14 (November, 1933): 387–491.

logists. The writing of these individuals totaled 161,518 words and included 20,320 predicates or clauses. The clauses were classified as either main or dependent. The subordination index was computed by dividing the number of subordinate clauses by the total number of clauses written by each individual. LaBrant found that high school students used subordinate clauses in 36 per cent of their sentences, while adults used them in 46 per cent. Subordinating ideas is a function of chronological and mental age; however, she concluded that maturity is important in the construction of involved sentences. For example, the content of the subordinate clauses becomes more exact with increasing maturation of the writer; 'time'-clauses change from 'when'-clauses to 'after'-, 'until'-, 'while'-clauses. However, the length of clauses remained comparatively constant between ages eight and 16, mean length for mental-age groups in the study varying from 6.6 to 8.7 words.

As a follow-up of the LaBrant study, Hunt[42] conducted a 'clause-count' experimental study that involved the writing of average students at fourth, eighth, and twelfth grade levels and the writings of a group of superior adults. Analyzing a total of 72,000 words from the two groups, he sought to establish a measurable unit that would be more significant than LaBrant's subordinate ratio. The minimal terminable unit, referred to as a "T-unit", is what Hunt calls a grammatical sentence. It has the advantage of preserving all the subordinate clauses in writing. Therefore, the 'T-unit's' length is not affected by coordination between main clauses. Hunt concluded that the 'T-unit' length is a better index of maturity than sentence length. This unit is the best indicator of grade level; clause length is second best; the frequency of subordinate clauses is third best, and sentence length is fourth best.

As part of a remedial education instruction survey, Chotlas[43] conducted a study for two years on the writings of 1,000 public school children. He employed a standard system for counting the 3,000 words collected from each writer. Chotlas concluded that the higher the I.Q. and the higher the age level the more highly differentiated is the language structure of the writer; the use of a proportionately greater number of nouns and adjectives characterized high I.Q. and older age groups; the use of a proportionately greater number of verbs characterized the low I.Q. and younger age groups; adverb usage was not clearly differentiated among the groups.

[42] Kellogg Hunt, *Differences in Grammatical Structures Written at Three Grade Levels* (Florida State University, Tallahassee, 1964, Project 1998, Cooperative Research Program, Office of Education, U. S. Department of Health, Education, and Welfare).

[43] John W. Chotlas, "Studies in Language Behavior. IV — A Statistical and Comparative Analysis of Individual Written Language Samples", *Psychological Monographs* 56 (1944): 77–111.

F. TWO STUDIES OF TRANSFORMATIONAL GRAMMAR CONCEPTS

Menyuk[44] sought to determine if Noam Chomsky's model of syntactic structure is capable of describing a children's grammar as a self-contained system and of indicating developmental trends. Two groups, 48 nursery school children and 48 first grade children, were chosen for the study; their I.Q. scores were above 90. Analysis of parental occupation showed that all children belonged within the category of the upper 24% of a middle-class community. A language sample of each child was analyzed using Chomsky's model. Menyuk concluded that the basic structures which generated all the sentences in the total language sample could be described within the framework of the Chomsky model.

Bateman and Zidonis[45] conducted an experimental study with ninth and tenth graders for a two-year period. They used transformational-generative grammar in a series of lessons to determine if the new grammar has pedagogical promise for the teaching of English. More specifically, the pilot study sought to answer four broad questions:

(1) Can high school pupils learn to apply the transformational rules of generative grammar in their writing?
(2) To what extent will the proportion of well-formed sentences increase in pupil writing over the two-year period?
(3) Can students' repertoire of grammatical structures be increased by a study of generative grammar?
(4) What kinds of trasformational and co-occurrence errors will occur in pupil writing, and what extent will such errors increase or diminish over the two-year period?[46]

Fifty ninth graders were randomly assigned to control and experimental groups, with the former studying the regular curriculum and the latter studying phrase structure rules and transformational rules of generative grammar. Neither group had studied formal grammar in at least the two years prior to the start of the experiment. Written compositions constituted the pre- and post-tests, thus providing over 70,000 words for analysis. An instrument of transformational analysis was developed for evaluating all the sentences in the sample. Based on the results of three component measures: proportion of well-formed sentences, structural complexity score, and error change score, Bateman and Zidonis concluded that high school pupils can learn the principles of transformational-generative grammar; that a knowledge of transformational-generative grammar enables pupils to increase significantly the proportion of

[44] Menyuk, "A Descriptive Study".
[45] *Op. cit. Effect of A Knowledge.*
[46] Frank J. Zidonis, "Generative Grammar": A Report on Research", *English Journal* 54 (May, 1965): 405–409.

well-formed sentences they write; that statistical analysis suggests that there is a relation between a knowledge of transformational-generative grammar and an ability to produce well-formed sentences of greater structural complexity; that the grammar of English is never fully mastered; that a knowledge of this new grammar can enable students to reduce the occurrence of errors in their writing. The Bateman and Zidonis study was conducted in a laboratory school, not a public school.

As can be seen in the preceding chapter, the bulk of the literature and research concerns problems in the teaching of writing that bear upon a knowledge of formal grammar and problems of analyzing and evaluating the writing patterns of students. Since research studies in the 'new' grammar are very limited, and since modern linguistic theory has significant implications for teaching of writing skills, the major objective of this study serves as an aid to areas of needed research in written composition.

III

CONSTRUCTION AND EVALUATION OF MATERIALS

Construction and evaluation of the lessons that were taught to the Experimental Group required six procedures: investigating the literature in concepts and skills of teaching sentence structure on the junior high school level; investigating the literature in theory, concepts, and skills appropriate for teaching grammatical and syntactic aspects of transformational-generative grammar; determining the concepts applicable and meaningful for the experimental lessons; submitting lessons to college professors and text-book writers for critical evaluation; teaching parts of the lessons to a selected group of eighth grade students, and submitting the lessons to a jury of secondary-school and college teachers of English in the United States and England.

A. CONSTRUCTING THE MATERIALS

After carefully checking text-books, curriculum guides, instructional materials, and other resource materials in composition, grammar, and linguistics, the investigator outlined the concepts to be covered in the experimental lessons. The lesson materials are found in Appendix A.

The six lessons were divided into concept-blocks proceded by arabic numbers enclosed in open-top boxes. Thus, both the teacher and the students could move through a series of boxes that terminated into a set of exercises to be worked out by the student. Table 1 illustrates the design of the lessons for the experimental group.

Examples were included in the concept blocks to help the students better understand the material to be learned. The vocabulary used in the examples and practice exercises following each lesson related to the background and experiences of students of an urban, low socio-economic school district. Both groups of students created additional sentences for each lesson; this provided additional practice of concepts involved in each lesson. Table 2 illustrates the ten sentence designs and examples found in the experimental lessons.

The format of the experimental lessons was that of a workbook; ample space was provided for each student to work out his practice exercises in his workbook, allowing for review and teacher comment.

TABLE 1

Design of Lessons for the Experimental Group

Lesson	Concepts	Box Numbers	No. of Concepts
(1)	(2)	(3)	(4)
Lesson I	1. Introduction of symbols	1–7	7
	2. Concept of kernel sentence		
	3. Concept of noun phrase		
	Practice Exercise # 1		
	4. Concept of determiners	8–15	8
	5. Concept of nouns		
	Practice Exercise # 2		
Lesson II	1. Concept of English verbs	16–21	6
	2. Concept of verb phrase		
	Practice Exercise # 3		
Lesson III	1. Concept of Sentence Design One	22–29	8
	2. Concept of Sentence Design Two		
	Practice Exercise # 4		
Lesson IV	1. Concept of Sentence Design Three	30–44	15
	2. Concept of Sentence Design Four		
	3. Concept of noun phrase object		
	Practice Exercises # 5		
	4. Concept of Sentence Design Six	45–54	10
	5. Concept of Sentences Design Seven		
	Practice Exercise # 6		
Lesson V	1. Concept of the verb 'Be'	55–76	22
	2. Concept of Sentence Design Eight		
	3. Concept of Sentence Design Nine		
	4. Concept of Sentence Design Ten		
	5. Concept of phrases of time and place		
	Practice Exercises # 7		
Lesson VI	1. Concept of modal in verb expansion	77–100	24
	2. Concept of 'be' + 'ing' in verb expansion		
	3. Concept of 'have' + part. in verb expansion		
	Practice Exercise # 8		
	Total		100

TABLE 2

The Ten Sentence Designs and Examples Used in Lessons for the Experimental Group

Sentence Design	Symbols and Examples of Designs
(1)	(2)
1	$S \rightarrow (D) + N + V + (Adv)$ The rent collector yapped loudly.
2	$S \rightarrow (D) + N + V + Adj$ The supper smelled good.
3	$S \rightarrow (D) + N + V\text{-}b + (D) + N$ The milk became clabber.
4	$S \rightarrow (D) + N + V\text{-}t + (D) + N$ Senator Kennedy reached the top.
5	$S \rightarrow (D) + N + V\text{-}g + (D) + N + (D) + N$ The United Nations gave Nigeria some assistance.
6	$S \rightarrow (D) + N + V\text{-}c + (D) + N + (D) + N$ Mother called the grocer dishonest.
7	$S \rightarrow (D) + N + V\text{-}e + (D) + N + (D) + N$ The gang elected Junior leader.
8	$S \rightarrow (D) + N + V\text{-}$'be' $+ Adv$ My party was on Saturday.
9	$S \rightarrow (D) + N + V\text{-}$'be' $+ Adj$ Willie, the Say-Hey kid, is skillful.
10	$S \rightarrow (D) + N + V\text{-}$'be' $+ (D) + N$ Lawyer Johnson was once a laborer.

Lessons in traditional grammar for the Control Group were taken from the regular class text-book and paralleled in concepts to lessons for the Experimental Group. Exercises and examples were also equalized. Each student maintained a notebook for practice exercises, allowing for review and teacher comment. Table 3 illustrates the topical concepts for the six lessons for the Control Group.

TABLE 3

Topical Concepts Included in Lessons for Control Group

Lesson	Topical Concepts
(1)	(2)
1	"Those Useful Adjectives" "Nouns Are Names" "Common and Proper Nouns" "Collective Nouns"
2	"Verbs are Spark Plugs" "Verb Finders" "Principal Parts of Verbs"
3	"Subject and Predicate" "Simple modifiers"
4	"How Intransitive Verbs Work" "Transitive and Intransitive Verbs"
5	"Transitive and Intransitive Verbs" "Prepositional Phrases: How They Work"
6	"Helping Verbs" "How Verbs Tell Time"

B. EVALUATING THE MATERIALS

During the months of June, July, and August, 1965, the investigator submitted the lessons, in part or whole, to three different groups of people. Two college professors and a text-book writer[1] were asked to read critically the concepts blocks, numbering 76, and through written and oral comments to suggest changes on the overall plan of the lessons and on the concepts emphasized. During the summer school session at the University, while the investigator was enrolled in a graduate course in teaching the modern grammar, a group of eighth graders from public and private schools in the Boston area were brought in for a period of instruction in concepts of transformational-generative grammar. Notes were made of their comments and responses during and after the instructional period. Members of the graduate class, who observed the instructional session and listened to student response through a two-way vision room, commented on the lessons and method of presentation. Twenty-four

[1] See Appendix B, Members of the Jury, p. 79.

concept-blocks were added to the original 76. The mimeographed lessons were sent later to a jury of twelve experienced teachers of English;[2] eleven jury members returned the lessons with comments and suggestions for improvement. Two of the teachers tried out parts of the lessons with their eighth grade students.

[2] See Appendix B, Members of the Jury. p. 79.

IV

CONTROLLING THE LINGUISTIC ENVIRONMENT

The experimental study encompassed four major procedures. First, an informal instrument to be applied to sentences written by students in the Control and Experimental Group was developed by the investigator. Second, the investigator selected the population and the teacher for the study. Third, the time plan for the study was worked out with the school principal, teacher, and the investigator. Fourth, the investigator worked out plans for the pre-test and post-test for the groups.

A. PREPARATION OF THE INSTRUMENT

The SENTENCE ANALYSIS INSTRUMENT was designed to analyze the structure of a sentence. It was imposed on sentences to determine the ratio of internal elements and the average length of clauses.

On the basis of the instruments used by LaBrant in her study of subordinate ratios of sentences, and Hunt in his study of transformational concepts in written sentences, this investigator selected four syntactic variables as criteria for cutting up a sentence into significant parts or elements. The four variables were:

I. Noun Phrase Element
   - A. noun
   - B. simple modifier
   - C. verbal element

II. Verb Phrase Element
   - A. verb (main)
   - B. auxiliary
   - C. modifiers (pre-verb, simple)

III. Predicate Expansion Element
   - A. complement (one or two words)
   - B. phrase (modifier or complement)
   - C. clause (modifier or complement)

IV. Average Length of Clause

Seeking a method of sentence analysis that could be used with sentences written by junior high school students, the investigator collected fifty themes written by eighth-grade students in a suburban junior high school in Massachusetts. Although the community is classified as middle-class, students in the group came from homes that ranged from low to high socio-economic status. Their theme topics covered a variety of topics that told of experiences from skiing in the Alps to having no breakfast on school days. After reading a sample of sentences and analyzing the structures, the investigator tallied those components and structures that were most frequent and that were unique. On the basis of this survey, a rough draft of the instrument was drawn.

From a recent edition of the *Harvard Educational Review*, five sets of 100 running words from five writers were analyzed for syntactic structures. Noting similarities and dissimilarities of the sentences, the investigator applied the rough draft of the instrument to the sample sentences. A second draft was worked out. On the basis of a careful examination of sentences written by the two groups of people, and on the basis of criteria used by LaBrant and Hunt, the writer constructed a third draft of the instrument.

It was realized that neither the writing of the students from the suburban school nor the writing of the contributors to the educational magazine could justifiably serve as norms for students in the experimental study; however, since basic English sentences fall into relatively few patterns, the writer felt that these randomly selected pieces of writing offered validity to the instrument.

On the basis of a study conducted earlier by this investigator, the fourth draft of the instrument was begun. The earlier study concerned the verb structures as used by a group of high school students who spoke a dialect similar to the speech patterns found in the school selected for this study. These high school students were formed into a group and were asked to give their impressions of and reactions to selected magazine caricatures. Many of the students tended to 'pack' a great number of ideas after the verb rather than before the noun or after the noun-subject; also, auxiliary verbs and simple verb modifiers were severely limited. What appeared significant was the 'ing' forms, infinitive forms, and modifying clauses used extensively toward the end of the sentences. After consultation with two professional writers, a magazine editor and a textbook author, the investigator concluded that the fourth form of the instrument should be especially applicable for post-verb 'loading' of the sentence. It seems apparent that post-verb 'loading' reveals something unique about a junior high school student's ability to write with a greater intensity of ideas and a greater manipulative skill of basic sentence elements. Thus, the fourth and final draft of the informal sentence analysis instrument was constructed.

B. SELECTION OF THE POPULATION

The population was originally established with 100 students, divided unequally into four classes, of an urban junior high school in Roxbury, Massachusetts. After the initiating stages of the experiment, however, ten students transferred to other schools and/or sections, and six students were dropped from the study because of extended absences. The final population was composed of 84 students, 45 in the Experimental Group and 39 in the Control Group. All of the classes were taught in the same classroom, at different class periods, by the same teacher.

The age range for the Experimental Group was 144–193 months; the age range for the Control Group was 149–193 months. As indicated in Table 4, there was no significant difference between the mean age of the two groups.

TABLE 4

Mean Chronological Age for Experimental and Control Groups

Group	*N*	Mean Months	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	162.91	12.97	3.70
Control	39	167.77	9.29	

The Stanford Achievement Test — Paragraph Meaning, administered on September 28, 1965, encompasses both reading skills and critical thinking. Table 5 shows mean scores for the two groups on the achievement test.

TABLE 5

Mean Scores — Paragraph Meaning Test

Group	*N*	Mean Score	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	59.82	16.78	2.14
Control	39	55.28	9.95	

On October 5, 1965, the two groups were administered the Kuhlmann–Anderson I.Q. Test. The mean score for each group is shown in Table 6.

TABLE 6

Mean Scores — Intelligence Test

Group	*N*	Mean Score	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	97.96	11.78	.96
Control	39	95.54	10.33	

As can be seen in Table 6, there was no significant difference between the mean I.Q. of the Experimental Group and the Mean I.Q. of the Control Group.

C. TIME PLAN OF THE STUDY

During the two weeks prior to the initiation of the experimental program, the investigator met with the teacher for sessions concerning the study. The teacher's prior exposure to linguistic theory, her years of teaching experience in English, and her position as head of the English department at the school aided in the understanding of the plan, purpose, and techniques of the study.

The English class schedule at the school covered six periods a week, each lasting 40 minutes. During three periods a week, the groups studied grammar as proposed by the experimenter; during one period a week, they wrote short themes, and during two periods a week they studied literature. The experimental study was designed for approximately 14 weeks, from October 11, 1965 to February 11, 1966.

D. PRE-TEST AND POST-TEST

The students in both the Control and the Experimental Groups were asked to write two compositions for pre-test and two compositions for post-test. All students wrote the compositions in the classroom under supervision of the same teacher. The first and fourth composition topics, designated as Theme I–A and Theme I–B, were developed by the experimenter and approved by the teacher; the second and third composition topics designated as Theme II and Theme III, were developed by the teacher and approved by the experimenter. It has been found through experimental studies in composition that one theme per student is not sufficient data for pre-test or post-test analysis. Table 7 illustrates the theme plan for both groups of students.

TABLE 7

Theme Arrangement for Pre-Test and Post-Test

Theme Topics I-A	Theme Topics II	Theme Topics III	Theme Topics I-B
(1)	(2)	(3)	(4)
E.G. October 1st	October 8th	February 4th	February 11th
T.G. February 11th	October 8th	February 4th	October 1st

As shown above, topics, five in number, given as pre-test to the Experimental Group were reversed as post-test for the Control Group and vice-versa. Both groups wrote on the same topics on October 8th and February 4th. Theme topics used in the study are listed below:

Theme I–A: An Exciting Trip That I Have Taken
My Favorite Television Program
Styles of Clothes That Attract Me
What I Think About "Rock and Roll" Music
My Idea of A Happy Life
Theme II: Following Directions
Theme III: Sights and Sounds That I Adore
Theme I–B: Why I Think Boston Is (Not) A Nice Place To Live
Why _____ Is My Favorite Sport
My Favorite Relative
Reading _____ Magazine Can Be Fun
A House That I Would Like To Build

V

ANALYSIS OF DATA

The purpose of this study was to investigate the effects of direct instruction in the kernel sentences of transformational-generative grammar and paralleled concepts of traditional grammar upon the written sentences of eighth grade students. Data collected for this study were of three types: Type 1, mental-test scores, chronological ages, and resulting intelligence quotients; Type 2, achievement-test scores in paragraph meaning; Type 3, written sentences.

The analysis of Type 3 data was organized to reveal changes in the following four variables of written sentences:

(1) The noun phrase element,
(2) The verb phrase element,
(3) The predicate expansion element,
(4) The average length of clause.

However, through the analysis of data, the average length of clauses proved to be less meaningful than the total written clauses. The procedures used in analyzing the data provided opportunities to investigate the following related aspects:

(1) The age differences in the four variables of written sentences,
(2) The extent of relationship between sentence variable scores and intelligence quotient scores,
(3) The extent of relationship between sentence variable scores and achievement test scores in paragraph meaning.

A. MEASURES OF THE STUDY

During September and October, the *Kuhlmann–Anderson Test* and the *Stanford Achievement (Paragraph Meaning) Test* were given to the 39 students in the Control Group and 45 students in the Experimental Group. The tests were administered and supervised by the teacher and the investigator, both

experienced in the administration of tests. All tests were carefully hand-scored by the investigator and then verified by rescoring through an IBM test-scoring machine. All computations of chronological age, intelligence quotient, and achievement scores were checked twice by the investigator.

Since the major purpose of the study was to determine the effect of a new grammar upon the writing patterns of selected students, the analysis of data collected through written compositions is of prime importance. Students in both groups wrote a total of four compositions: two for pre-test and two for post-test. A total of 336 compositions was collected.

B. TECHNIQUE OF ANALYSIS OF SENTENCES

The investigator checked the 336 compositions collected from the Experimental Group and the Control Group to ascertain that 100 words per composition were written by each student. Thus, a total of 200 words for pre-test and 200 words for post-test comprised the data for each student. The words analyzed totaled slightly more than 33,600.

Four raters were selected to analyze the sentences of the compositions. They were chosen on the basis of any four of the following criteria:

(1) College graduate,
(2) Major or minor in English,
(3) Teaching experience in English,
(4) Graduate work in English,
(5) Working experience with urban teen-agers,
(6) Professional writing experience.

The investigator met with the raters to outline analysis procedures. Each rater was then given forms of the instrument and two batches of compositions. The student's name, class, and school were clipped from the top of each theme and replaced by a code number written on a colored card; a variety of 3×5 colored cards were used for all compositions. The coding system was confusing to the raters, thereby allowing for anonymity. When the rating was completed, the investigator re-coded each set of themes and its rating sheet according to standard procedures for IBM punch-cards. Because of the objectivity involved in rating a sentence, the investigator felt that cross-checking by another group of raters would not be necessary. For example, a noun would not be rated as a verb or vice versa. During the rating sessions, the investigator rechecked sentence analysis, supervised ratings, and re-checked scores.

Each sentence variable was tabulated according to the design of the Sentence Analysis Instrument, an outline of the rating procedure. The noun

phrase variable was divided into three parts: noun (noun, noun substitute, gerundive component), simple modifier (prepositional phrase, simple adjective), and verbal modifier (participial phrase, infinitive phrase). Each component of the three parts received a tabulation of one; a compound noun-subject — John and Joe — also received a tabulation of one. If a gerund were used as a noun-subject, the count of two was given for the noun.

The verb phrase variable was divided into three parts: verb (main verb of sentence), auxiliary verb, and simple modifier (simple adverb in pre-verb position or immediately post-verb position); a compound verb — loves and adores — designating the same action was tabulated as one.

The predicate expansion variable was divided into three parts: complement (simple, one word or two words), phrase, and clause. Although an adverbial phrase was often found in pre-noun-subject position, it was tabulated as a clause in the predicate expansion.

The average length of clause was determined by totaling all the clauses written for each test and dividing this number by 200, the extracted number of words. Tabulation of the number of sentences allowed for an analysis of the number of clauses per sentence and the number of clauses per given number of written sentences.

The so-called simple sentence was the basis for sentence analysis. Whenever a compound or compound-complex sentence was found, it was cut into simple sentence parts. The 200 word-count was arrived at by counting running words and stopping at the end of a simple sentence that totaled 200 words or over; in no instance did a rater count more than 200 + 4 words. Coordinating conjunctions between main clauses were not counted.

The following five examples of sentences illustrate the nature of the analytical instrument.

Sentence I: Kenneth and Kevin usually skate on this pond.

I.	Noun Phrase	
	A. Noun	1
	B. Simple modifier	0
	C. Verbal modifier	0
II.	Verb Phrase	
	A. Verb	1
	B. Auxiliary	0
	C. Simple modifier	1
III.	Predicate Expansion	
	A. Complement	0
	B. Phrase	1
	C. Clause	0

IV. Average Length of Clauses
A. Total clauses 1
B. Average length ..... (Computed by the investigator)

Sentence 2: My mother loves and cherishes babies who smile while sleeping.

I. Noun Phrase
A. Noun 1
B. Simple modifier 1
C. Verbal modifier 0
II. Verb Phrase
A. Verb 1
B. Auxiliary 0
C. Simple modifier 0
III. Predicate Expansion
A. Complement 1
B. Phrase 0
C. Clause 2
IV. Average Length of Clause
A. Total clauses 3
B. Average length ..... (Computed by the investigator)

Sentence 3: These short, rusty nails always stick into my finger whenever I hammer hard.

I. Noun Phrase
A. Noun 1
B. Simple modifier 3
C. Verbal modifier 0
II. Verb Phrase
A. Verb 1
B. Auxiliary 0
C. Simple modifier 1
III. Predicate Expansion
A. Complement 0
B. Phrase 1
C. Clause 1
IV. Average Length of Clause
A. Total clauses 2
B. Average length ..... (Computed by the investigator)

Sentence 4: Old Mr. Peepers, walking down the corridor, hardly ever knows who is present or who is absent for he seldom checks his class roll.

I.	Noun Phrase	
	A. Noun	1
	B. Simple modifier	1
	C. Verbal modifier	1
II.	Verb Phrase	
	A. Verb	1
	B. Auxiliary	0
	C. Simple modifier	2
III.	Predicate Expansion	
	A. Complement	2
	B. Phrase	0
	C. Clause	3
IV.	Average Length of Clause	
	A. Total clauses	4
	B. Average Length	(Computed by the investigator)

Sentence 5: When I go home I will eat three 'Dagwood' sandwiches to make up for the school lunch that I missed.

I.	Noun Phrase	
	A. Noun	1
	B. Simple modifier	0
	C. Verbal modifier	0
II.	Verb Phrase	
	A. Verb	1
	B. Auxiliary	1
	C. Simple modifier	0
III.	Predicate Expansion	
	A. Complement	1
	B. Phrase	2
	C. Clause	2
IV.	Average Length of Clause	
	A. Total clauses	3
	B. Average length	(Computed by the investigator)

On the basis of the data collected for pre-test and post-test, the F-test was applied to the four major variables of written sentences. Table 8 shows that F-test results for the experimental and control groups,[1]

[1] To facilitate reading the data in this and the following tables, a list of symbols is given on page 13.

TABLE 8

F-Test for Dependent Variables

Variables	Before		After		Mean Score Diff.	*S.D.*	*F*
	Mean	*S.D.*	Mean	*S.D.*			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Noun Phrases							
E.G.	28.93	6.02	31.07	8.49	.150	.476	3.01
T.G.	26.23	5.73	25.05	5.77	−.028	.448	
Verb Phrases							
E.G.	31.44	6.94	26.93	5.21	−.255	.451	10.90**
T.G.	26.56	4.63	28.36	10.63	.197	.767	
Predicate Expansions							
E.G.	36.51	4.53	40.07	4.91	.285	.560	.39
T.G.	31.49	14.51	32.39	14.33	.201	.656	
Clauses							
E.G.	26.18	4.72	29.78	4.77	.272	.309	19.18**
T.G.	22.80	5.46	21.46	4.15	−.010	.267	

E.G. = Experimental Group; $N = 45$ $P-$ .05 = 3.98
T.G. = Control Group; $N = 39$ $P-$ .01 = 7.00

The mean score difference for the Experimental Group for the noun phrase variable was .150 as compared to −.027 for the Control Group. The difference is not statistically significant. The mean score difference for the Experimental Group for the verb phrase variable was −.255 as compared to .197 for the Control Group. The difference is statistically significant at the .01 per cent level in favor of the Control Group. The mean score difference for the Experimental Group for the predicate expansion variable was .285 as compared to .201 for the Control Group. The difference is not statistically significant. The mean score difference for clauses was .272 for the Experimental Group and −.010 for the Control Group. The difference between groups is statistically significant at the .01 level in favor of the Experimental Group.

A comparison of mean score differences for noun-subject components of noun phrases is presented in Table 9.

The mean score difference between the groups is statistically significant at the .01 per cent level.

A comparison of mean score differences for simple modifier components of noun phrases is presented in Table 10.

TABLE 9

A Comparison of Mean Score Difference for Noun-Subject Component of the Noun Phrases

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	–.043	.083	8.15**
Control	39	–.003	.024	

The mean score difference between the groups is statistically significant at the .01 per cent level.

A comparison of mean score differences for simple modifier components of noun phrases is presented in Table 10.

TABLE 10

A Comparison of Mean Score Differences for Simple Modifier Components of Noun Phrases

Group	*N*	Mean Score Differences	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	.107	.288	2.22
Control	39	–.005	.391	

The mean score difference for the Experimental Group was .107. The mean score difference for the Control Group was —.005. The mean score difference between the groups is not statistically significant.

A comparison of mean score differences for verbal modifier components of noun phrases is presented in Table 11.

TABLE 11

A Comparison of Mean Score Differences For Verbal Modifier Components of Noun Phrases

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	.070	.309	2.27
Control	39	–.015	.170	

The mean score difference for the Experimental Group was .070. The mean score difference for the Control Group was —.015. The mean score difference was not statistically significant.

A comparison of mean score difference for main verb components of verb phrases is presented in Table 12.

TABLE 12

A Comparison of Mean Score Differences For Main Verb Components of Verb Phrases

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	–.083	.180	7.57**
Control	39	–.003	.012	

The mean score difference for the Experimental Group was —.083. The mean score difference for the Control Group was —.003. The difference between the mean scores of the groups is statistically significant at the .01 per cent level.

A comparison of mean score differences for auxiliary verb components in verb phrases is presented in Table 13.

TABLE 13

A Comparison of Mean Score Differences For Auxiliary Verb Components of Verb Phrases

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	–.074	.218	.37
Control	39	–.106	.263	

The mean score difference for the Experimental Group was —.074. The mean score difference for the Control Group was —.106. Both groups showed no gain from pre-test to post-test. The difference between the mean scores of the groups is not statistically significant.

A comparison of mean score differences of simple modifier components of verb phrases is presented in Table 14.

TABLE 14

A Comparison of Mean Score Differences For Simple Modifier Components of Verb Phrases

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	−.980	.298	15.60**
Control	39	.306	.597	

The mean score difference for the Experimental Group was −.980 as compared to .306 for the Control Group. The difference between the mean scores of the groups is statistically significant at the .01 per cent level in favor of the Control Group.

A comparison of mean score differences of complements in predicate expansions is presented in Table 15.

TABLE 15

A Comparison of Mean Score Differences of Complements in Predicate Expansions

Group	*N*	Mean Score Differences	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	−.104	.329	4.96*
Control	39	.036	.222	

The mean score difference for the Experimental Group was −.104. as compared to .036 for the Control Group. The difference between the means of the groups is statistically significant at the .05 per cent level in favor of the Control Group.

A comparison of mean score differences of phrases in predicate expansions is presented in Table 16.

The mean score difference for the Experimental Group was .125 as compared to .067 for the Control Group. Both groups showed gains from pre-test to post-test. The difference between the mean score of the groups is not statistically significant.

A comparison of mean score differences of clauses in predicate expansions is presented in Table 17.

TABLE 16

A Comparison of Mean Score Differences of Phrases in Predicate Expansions

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	.125	.399	.38
Control	39	.067	.443	

TABLE 17

A Comparison of Mean Score Differences of Clauses in Predicate Expansions

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	.262	.294	6.64*
Control	39	.097	.281	

The mean score difference for the Experimental Group was .262 as compared to .097 for the Control Group. Both groups showed gains from pre-test to post-test. The difference between the mean scores of the groups is statistically significant at the .05 per cent level in favor of the Experimental Group.

A comparison of mean score difference of clauses is presented in Table 18.

TABLE 18

A Comparison of Mean Score Differences for Clauses

Group	*N*	Mean Score Difference	*SD*	*F*-ratio
(1)	(2)	(3)	(4)	(5)
Experimental	45	.272	.309	19.18**
Control	39	−.010	.267	

The mean score difference for the Experimental Group was .272 as compared to .010 for the Control Group. The difference between the mean scores of the groups is statistically significant at the .01 per cent level in favor of the Experimental Group.

TABLE 19

Group Scores for Sentences and Sentence Variables

Variables	Experimental N = 45		Control N = 39	
	Pre-test	Post-test	Pre-test	Post-test
(1)	(2)	(3)	(4)	(5)
Sentences	726	710	632	602
Noun Phrase Elements	1312	1910	1023	979
Verb Phrase Elements	1415	1212	1036	1106
Predicate Expansion Elements	1645	1803	1228	1263
Total Clauses	1178	1342	889	836

TABLE 20

T-Test Table for Dependent Variables for Experimental and Control Groups of Pre-Test Scores

Variables	Experimental		Control		Pre v. Pre	
	Mean	*SD*	Mean	*SD*	Mean Differences	t
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Noun Phrase Element	28.93	6.02	26.23	5.73	2.70	2.1*
NP^1	16.82	2.70	16.33	2.96	.49	.80
NP^2	6.98	3.22	7.82	4.88	.84	.91
NP^3	5.36	5.89	2.08	2.27	3.28	3.5*
Verb Phrase Element	3 1.44	6.94	26.56	4.63	4.88	3.8*
VP^1	18.00	3.32	16.26	2.89	1.74	2.6*
VP^2	6.47	3.47	7.56	2.72	1.09	1.6
VP^3	6.98	3.68	2.74	2.24	4.24	6.5*
Predicate Expansion Element	36.51	4.53	31.49	14.51	5.02	2.1*
PE^1	10.82	6.01	8.67	7.62	2.15	1.4*
PE^2	15.67	8.08	16.21	6.07	.54	.35
PE^3	10.07	3.27	6.62	3.64	3.45	4.5*
Clauses	26.18	4.72	22.80	5.46	3.38	3.0*
Sentences	16.16	3.00	16.21	2.83	.05	.08
Average Length of Clause	7.6		8.8			
	N = 45		N = 39		$P_{.05}$ = 1.99	

TABLE 21

T-Test Table for Dependent Variables for Experimental Group on Pre- vs. Post-Test Scores

Variables	Pre-test		Post-test		Pre- vs. Post-	
	Mean	*SD*	Mean	*SD*	Mean Differences	t
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Noun Phrase Element	28.93	6.02	31.07	8.49	2.14	1.39
NP^1	16.82	2.70	15.87	2.85	.95	1.6
NP^2	6.98	3.22	8.58	3.59	1.60	2.2* (up)
NP^3	5.36	5.89	6.62	7.40	1.26	.89
Verb Phrase Element	31.44	6.94	26.93	5.21	4.51	3.40 * (down)
VP^1	18.00	3.32	16.44	2.78	1.56	2.4* (down)
VP^2	6.47	3.47	5.02	2.44	1.45	2.3* (down)
VP^3	6.98	3.68	5.47	3.37	1.51	2.0* (down)
Predicate Expansion Element	36.51	4.53	40.07	4.91	3.56	3.69 * (up)
PE^1	10.82	6.01	8.73	6.77	2.09	1.5
PE^2	15.67	8.08	17.47	9.42	1.90	.97
PE^3	10.07	3.27	13.87	3.22	3.80	5.6* (up)
Clauses	26.18	4.72	29.78	4.77	3.60	2.62 * (up)
Sentences	16.16	3.00	15.78	2.74	.38	.63
Average Length of Clause	7.6		6.7			
			$N = 45$		$P_{.05} = 2.02$	

The total number of sentences and the total number of sentence variables for the Experimental Group and the Control Group are presented in Table 19.

A subdivision of the major dependent variables allowed for an analysis of the internal components of the noun phrase, verb phrase, and predicate expansion for pre-test and post-test scores for both groups. Table 20 shows t-test results for pre-test scores for the Experimental and Control Groups.

Table 21 shows t-test results for the dependent variables on pre vs. post-test scores for the Experimental Group.

Table 22 shows t-test results for the dependent variables on pre vs. post-test scores for the Control Group.

TABLE 22

T-Test Table for Dependent Variables for Control Group on Pre- vs. Post-Test Scores

Variables	Pre-Test		Post-Test		Pre- vs. Post-	
	Mean	*SD*	Mean	*SD*	Mean Differences	t
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Noun Phrase Element	26.23	5.73	25.05	5.77	1.18	.90
NP^1	16.33	2.96	15.49	2.18	.84	1.4
NP^2	7.82	4.88	7.72	4.88	.10	.09
NP^3	22.08	2.27	1.90	2.06	.18	.35
Verb Phrase Element	26.56	4.63	28.36	10.63	1.80	.97
VP^1	16.26	2.89	15.44	2.16	.82	1.4
VP^2	7.56	2.72	5.82	3.20	1.74	2.6* (down)
VP^3	2.74	2.24	7.10	8.95	4.36	2.9* (up)
Predicate Expansion Element	31.49	14.51	32.39	14.33	.90	.27
PE^1	8.67	7.62	8.41	5.48	.26	.17
PE^2	16.21	6.07	16.33	7.51	.12	.08
PE^3	6.62	3.64	7.64	4.24	1.02	1.1
Clauses	22.80	5.46	21.46	4.15	1.34	1.27
Sentences	16.21	2.83	15.44	2.16	.77	1.36
Average Length of Clause		8.8		9.3		
			$N = 39$			$P_{.05} = 2.03$

The extent of relationship between the sentence variable and age, intelligence quotient, and achievement test scores was studied. Scores from the four sentence variables were correlated with chronological age, I.Q., and achievement test scores for both groups, pre-test and post-test. The results of these computations are presented in Tables 23, 24 and 25.

TABLE 23

Pre-Test Correlation Matrix on Dependent and Control Variables for the Experimental Group

	Age	IQ	Achiev. Test.	*NP*	*VP*	*PE*	Clauses
Age		−.61*	−.23	−.35*	−.35*	−.39*	−.05
IQ			.43*	.27	.44*	.43*	.33*
Achiev. Test				.41*	.21	.33	.12
NP					.44*	.68*	.13
VP						.52*	−.03
PE							.48*
Clauses							

$N = 45$ $P_{.05} = .304$

TABLE 24

Pre-Test Correlation Matrix on Dependent and Control Variables for the Control Group

	Age	IQ	Achiev. Test	*NP*	*VP*	*PE*	Clauses
Age		−.52*	−.07	−.10	−.17	.28	.18
IQ			.23	.22	−.01	−.25	−.28
Achiev. Test				.13	−.03	−.30	−.20
NP					.18	−.61*	−.10
VP						.02	.07
PE							.50*
Clauses							

$N = 39$ $P_{.05} = .325$

TABLE 25

Post-Test Correlation Matrix for the Experimental and Control Groups

	Age	IQ	Achiev. Test	*NP*	*VP*	*PE*	Clause
Age		−.61*	−.23	−.51*	−.20	−.10	−.15 E
		−.52*	−.07	.02	.40*	.26	−.21 C
IQ			.43*	.53*	.27	.06	.03 E
			.23	−.13	−.33*	−.16	.28 C
Ach.T.				.50*	.16	.32*	.38*E
				−.05	.03	.08	.24 C
NP					.59*	.47*	.25 E
					.14	−.36*	−.18 C
VP						.30*	.12 E
						.55*	−.27 C
PE							.58*E
							.29 C
Clauses							

Experimental Group: $P_{.05} = .30$ Control Group: $P_{.05} = .33$

VI

SUMMARY AND IMPLICATIONS FOR CURRICULUM DEVELOPMENT

The purpose of this study was to investigate the effects of direct instruction in the kernel sentences of transformational-generative grammar and paralleled concepts of traditional grammar upon the written sentences of eighth grade students. Data collected for this study were of three types: Type 1, mental-test scores, chronological ages, and resulting intelligence quotients; Type 2, achievement-test scores in paragraph meaning; Type 3, written sentences.

The analysis of Type 3 data was organized to reveal changes in the following four variables of written sentences:

(1) The noun phrase element,
(2) The verb phrase element,
(3) The predicate expansion element,
(4) The average length of clause.

However, through the analysis of data, the average length of clauses proved to be less meaningful than the total written clauses.

Further analysis of data provided opportunity to discover:

(1) the age differences in the four selected variables of sentences;
(2) the extent of relationship between sentence variable scores and intelligence quotient scores;
(3) the extent of relationship between sentence variable scores and achievement test scores in paragraph meaning.

A. SUMMARY OF PROCEDURES

A series of lessons in the concepts of transformational-generative grammar was presented to a jury of teachers of English who have knowledge of linguistic theory and practice. Parts of the lessons were taught to a group of eighth grade students. From these procedures, a series of 100-concept lessons in transformational-generative grammar was developed for instruction to students in

an experimental group. Paralleled concept-lessons in traditional grammar were outlined for students in a control group.

An instrument was designed to rate written sentences. The fourth and final draft of the instrument was designed from a series of earlier drafts applied to various samples of writing.

Standardized tests were administered to students selected for the study. The tests were the *Stanford–Achievement Test, Paragraph Meaning*, Form W, and *Kuhlmann–Anderson I.Q. Test*, Booklet G.

On the basis of the data obtained on these tests, and on the basis of the chronological ages of students, two groups were selected and equated. Due to extended absences and transfers to other schools or sections, 16 students were eliminated from the study that began with 100 students. Findings in this study are based on 45 students in the experimental group and 39 students in the control group.

The experiment covered a period of fourteen weeks. During this time the students in the experimental group received instruction in the concepts of the kernel sentences of transformational-generative grammar. Both groups wrote two compositions for pre-test and two compositions for post-test. Theme topics were the same for both groups. At the conclusion of the experiment the analysis of data was organized in terms of the stated purposes of the study.

To facilitate reading of the results, see the list of symbols for the major dependent variables and the internal components of these variables which is given on page 13.

Sentence 'maturity' or sentence 'growth', as defined in this study, means a 'packing' of phrases and clauses into the predicate expansion element.

B. RESULTS

The following results are an incorporation of the tests used in this study:

(1) There was reason to believe that the two groups differed on the test of written sentences; this was why each group was to serve as its own control -- by the pre-test procedure. The manner in which these two groups are equated is by using the pre-test as the base line for a particular group's initial performance and comparing subsequent performance to the established base line. Although the base lines are quite different between groups at the onset, these differences did not influence the comparison made.

For pre-test comparison, the noun phrase variable was statistically significant in favor of the Experimental Group. However, a comparison between groups of the internal components of the noun phrase shows that the groups were equal on *NP*–1 and *NP*–2. For *NP*–3, the Experimental Group rated significantly higher than the Control Group.

(2) The verb phrase variable on pre-test showed a significant difference between groups in favor of the Experimental Group. A breakdown of this variable, however, shows that the groups were equal on *VP*–2, but the Experimental Group rated significantly higher than the Control on *VP*–1 and *VP*–3.
(3) The overall predicate expansion variable on pre-test showed that the Experimental Group differed significantly from the Control Group. But a subdivision of this variable shows that the Experimental Group rated higher than the Control Group on *PE*–3; they were equal for *PE*–1 and *PE*–2.
(4) For pre-test clauses, the Experimental Group rated significantly higher than the Control Group.
(5) For the number of sentences written for pre-test, test results showed that there was no significant difference between groups.
(6) Also, pre-test results showed that the average length of clause for the Experimental Group was 7.6 as compared to 8.8 for the Control Group.
(7) The global results of the NP's for pre-post-test showed that while the overall *NP*'s were not significant, that is, neither of the groups were significant from each other, nor did they change significantly from their pre-test standing, further study of these findings shows that the *NP*–1 did decrease for both groups and there was a significant decrease in the Experimental Group over the Control. The remaining two components of the *NP* increased for the Experimental Group and decreased for the Control Group; *NP*–2 was a significant increase for the Experimental Group.
(8) For verb phrases, there was a significant difference between the groups; the Control Group increased and the Experimental Group decreased. A breakdown of the major variable showed that both groups decreased in *VP*–1 and that the Experimental Group showed a significant decrease over the Control Group. For *VP*–2, both groups decreased about equally. However, there was a vast difference in the change in *VP*–3. The Experimental Group decreased while the Control Group increased, and there was a significant difference between them.
(9) In the predicate expansion variable, the Experimental Group increased significantly while the Control Group remained about the same. There are interesting changes in the components of the *PE*. The Experimental Group decreased in *PE*–1. The Control Group increased slightly in *PE*–1 and the difference between these groups was significant in favor of the Control Group. Both groups increased in *PE*–2 — the Experimental more than the Control, but there was no significant difference between groups. The clause component, *PE*–3, of the predicate expansion showed the highest degree of change in which both groups increased but with a much greater increase in the Experimental Group.
(10) For clauses, the fourth major variable, a comparison of mean score difference showed the Experimental Group to increase significantly, while the

Control Group remained about the same. The difference between the two groups had the highest level of significance of all four dependent variables.
(11) The average length of clauses for pre-post-test results showed that the Experimental Group decreased from 7.6 to 6.7, while the Control Group increased from 8.8 to 9.3.
(12) This study does not clearly explain how the Control Group did better than the Experimental Group on verb phrases. However, changes which occurred in the clauses of the predicate expansion and the total clauses are in the direction that this study would have predicted. The significance goes clearly beyond the .05 level.
(13) In the Experimental Group, pre-test correlations for the dependent variables and control variables showed significant positive relationships on achievement test scores and NP's. Correlations for I.Q. and *VP*'s, *PE*'s, and clauses showed significant positive relationships.
(14) In the Control Group, pre-test correlations for the dependent and control variables showed a positive relationship for achievement test scores and *NP*'s. Also, there was a positive relationship for I.Q. and *NP*'s.
(15) On post-test correlations, the Experimental Group showed positive relationships for all dependent variables and I.Q., with only *NP*'s significant. The Control Group showed positive correlation for I.Q. and clauses and this was not significant.
(16) For the Experimental Group, correlations between achievement test scores and the dependent variables showed positive relationships for all dependent variables, with only *VP*'s not significant. The Control Group showed positive correlations for *VP*'s, *PE*'s, and clauses, but these were not significant.
(17) Chronological age for the Experimental Group on pre-test and post-test had negative correlations for all dependent variables. However, chronological age for the Control Group had no consistent correlation across the measures for both pre-test and post-test.

C. CONCLUSIONS

(1) This study supported the belief that increases of scores for the predicate expansion and clauses from pre-test to post-test indicate sentence 'maturity' or sentence 'growth'. The Experimental Group showed significant growth.
(2) This study does not clearly explain how the Control Group did better than the Experimental Group on the verb phrase variable. However, the Control Group, by failing to show a significant increase in the predicate expansion, reflects an inability to handle a syntactic structure beyond the noun-verb-simple complement combination.

(3) It is difficult to speculate about the correlations of the dependent and control variables because of the inconsistent pattern across the measures. However, from a scanning of the pre-test correlations, one sees less of a relationship between I.Q. and the dependent variables than might otherwise have been expected. But even here there is inconsistency.

D. IMPLICATIONS FOR CURRICULUM DEVELOPMENT

(1) This study clearly points up the need for teaching syntax to junior high school students in lieu of teaching isolated parts of speech or the parsing of sentences according to the 'school' grammar approach.
(2) Transformational-generative grammar appears to hold promise for helping adolescents develop sentence maturity in their writing habits.
(3) Another aspect of this study reflects an apparent over-emphasis on verbs in the 'school' grammar. If junior high school students are taught how one part of a syntactic structure influences another part, they will write matured structures rather than over-modify one or two basic sentence parts.
(4) Although students in the Experimental Group were taught the ten basic sentence patterns, their writing at post-test reflected sentence maturity whereby basic structures were built into other basic structures.
(5) Since post-test sentences showed evidence of insertion of basic structures into other basic structures for the Experimental Group, junior high school students at the eighth grade level are able to grasp the concepts of transforms in the 'new' grammar. There is reason to believe, as indicated in this study, that the kernels can be effectively taught at a lower grade level.
(6) A great deal has been written about the written language of the urban public school adolescent, but this study is among the first of its kind to test the effect of the 'new' grammar on the sentence patterns of eighth grade students in the public school. As the results indicate, too much of the student's time is wasted on meaningless 'school' grammar materials and techniques. On the other hand, transformational-generative grammar seems to have more significance for teaching syntax through its grammar than the present 'school' grammar seems to have.
(7) This study also suggests that by teaching the kernel sentences, one allows a student to develop sentences that selfishly are his own — the creative aspect. He appears not to be bogged down by grammar labels that are over-emphasized in 'school' grammars.
(8) Finally, this study clearly points up the need for a critical appraisal of the English curriculum, not only at the junior high level but at levels K–12. There is a definite need to consider and respect the language that an adolescent brings to the classroom, to build upon what he has, not to destroy what he knows.

E. SUGGESTIONS FOR FURTHER STUDY

Problems suggested for investigation include:

(1) A study to determine the effect of instruction of the kernel sentences of transformational-generative grammar over a time period longer than fourteen weeks;

(2) A 'before-after-difference' experimental study between an urban and rural group of students and between an urban and suburban group on the effects of the 'new' grammar upon written sentences;

(3) A study to determine the effectiveness of the lessons with urban students on the seventh grade level;

(4) The development and evaluation of lessons in transformational operations on the kernel sentences to test the effects upon written sentences of students at the eighth grade level.

APPENDIX A: LESSONS IN THE KERNEL SENTENCES

LESSON ONE

In looking at sentences in a different way than we have already learned, we want to shape our thinking along new lines or new patterns of English grammar.

We are familiar with nick-names, slogans, and abbreviations. Almost all of us use 'TV' for television, 'Sub' for trains that run underground, and 'El' for trains that run on tracks above our city streets. Many of our friends are called 'Al' for Allen or Alfred, 'Sue' for Susan, and 'Sam' for Samuel, or 'Bob' for Robert. Suppose, then, we apply another kind of abbreviations to terms of our English sentences.

1. For our lessons on English sentences, let us begin with a simple description of a sentence. Look carefully at these letters and symbols: $S \rightarrow NP + VP$
2. S stands for SENTENCE
   NP stands for NOUN PHRASE
   VP stands for VERBS PHRASE
   $\rightarrow$ stands for equal to
   ( ) means that the enclosed word may or may not be written into the sentence.
3. The kinds of sentences that we will discuss in these lessons are called KERNEL SENTENCES, a term used to point out or designate the basic structures of English writing.
4. Now we can say that a sentence must have at least two parts: a NOUN PHRASE and a VERB PHRASE. The formula or rule for our sentence is $S \rightarrow NP + VP$.
5. A NOUN PHRASE *(NP)* is a structure that contains at least one noun. It may also contain other words that relate to the noun. Look at this group of words:

A. The Beatles	D. The director
B. This man	E. A collector
C. My sister	F. Several apartments

6. You notice in the above group that there is a noun in each part: Beatles, man, sister, director, collector, apartment.

7. The word that comes before each noun in Block 5, is called a Determiner *(Det)* or *(D)*. We have other determiners such as: an, that, these and his.

PRACTICE EXERCISE # 1

From the sentences below, select the determiners and the nouns. Write each under its proper heading:

1. A fish flapped out of the water.
2. My brother joined the navy.
3. The bicycle needs repairing.
4. A tomato is a vegetable.
5. His teacher is my friend.
6. Several boats sailed to Nantucket.
7. Some of the cream turned sour.
8. Many of my classmates went to summer camp.
9. These horses have won many races.
10. My head aches.

	DETERMINER	NOUN
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

8. In Practice Exercise # 1, you noticed that determiners were of different kinds. We used 'several' in sentence 6. We can write this sentence as: Several of the boats sailed to Nantucket. Compare Sentence 6 to Sentence 8.
9. Our *NP* rule can be written as $NP \rightarrow (D) + N$.
10. Determiners can be divided into three parts:
    Article Determiners: a, an, the, several, many
    Possessive Determiners: my, your, her, his, its
    Demonstrative Determiners: this, that, these, those
11. Nouns such as Hank, Beverly, Bill, or Louise are called proper nouns. These nouns need no determiner.
12. A PROPER NOUN names a unique individual or object: Cape Cod, President Kennedy, Washington Library, Freedom House, Aunt Mary.

13. Another kind of noun is a COUNT NOUN. It names objects which may be counted as separate units: dog, tent, apple, rink. These nouns usually require a determiner.
14. NON-COUNT NOUNS name objects which may not be counted as separate units or noted as singular or plural: gravel, coffee, milk, flour, love.
15. When pronouns replace nouns in sentences, they serve as nouns. Compare these two sentences:
    1. Wilt threw the ball across the court.
    2. He threw the ball across the court.

    Other pronouns which serve as subjects of sentences are: I, you, she, we, it, and they.

PRACTICE EXERCISE # 2

In the sentences below, certain nouns have been underlined. In the space below each noun, write *P* for proper noun, *C* for count noun, and *N* for non-count noun.

1. Bill Russell scored eight *free-throws* in the first half of the game.
2. Boston is a large, cultural *city*.
3. Please pass the *milk*.
4. Have you eaten the *candy?*
5. The *school* of fish swam to the gulf.
6. *Honesty* is the best policy.
7. *VieAnam* is causing many problems for our government.
8. Saving money can be a *virtue*.
9. My brother wants to belong to the *in-crowd*.
10. Everyone should adops certain *values* for living.
11. There is a *silver* shortage in our country.
12. A *flock* of seagulls flew over our house.

LESSON TWO

16. All verbs in English are alike in the following five ways:

    1. Occurrence with the word 'to',
    2. Occurrence with the form 'ing',
    3. Occurrence with the suffix 's',
    4. Occurrence of a past tense,
    5. Occurrence of a past participle form.

17. Notice this example of the following verbs: march, eat, study.

	1.	2.	3.	4.	5.
To	march	marching	marches	marched	marched
To	eat	eating	eats	ate	eaten
To	study	studying	studies	studied	studied

18. You will notice that there are differences between the verbs 'march' and 'eat'. March is called a REGULAR VERB and eat is called an IRREGULAR VERB.
19. Below are examples of other regular and irregular verbs. Study their characteristics.

To	bite	biting	bites	bit	bitten
To	sing	singing	sings	sang	sung
To	wait	waiting	waits	waited	waited
To	lean	leaning	leans	leaned	leaned

20. There are a few verbs in English that have the same form for the 'to' occurrence, the 'ed' occurrence, and the 'en' occurrence. Examine the following sentences:
    1. Willie Mays hit the ball.
    2. He hit a home-run yesterday.
    3. Willie, the 'Say-Hey kid', has hit the ball 470 feet from home-plate.
21. The verbs 'bid' and 'cast' are like the verb 'hit'. We must remember that these verbs can occur with the 's':
    Willie Mays hits the ball well.
    Mrs. Smith bids no-trumps every time we play bridge.
    He casts the line into the water as though he were throwing a basketball.

PRACTICE EXERCISE # 3

Supply the correct form for the following verbs:

	'to'	's'	'ing'	'ed'	'en'
To	drive				
To	steal				
To	swim				
To	forget				
To	run				

LESSON THREE

All basic English sentences fall into patterns or designs. Just as we have many kinds of automobiles, we have various sentence designs. We can tell the difference between a Buick and a Ford by certain characteristics. We

can apply the same principle to English sentences. For our purposes, one kernel sentence differs from another kernel sentence because of the VERB.

22. SENTENCE DESIGN ONE: Look carefully at this sentence: Children sing.
    This design consists of a NOUN PHRASE and a VERB PHRASE.
23. Examine these sentences of Design # 1:

NP	*VP*
1. John	sang loudly.
2. The dogs	barked ferociously.
3. The children	danced merrily.
4. Henry	ran fast.

24. Thus, the design for our first sentence looks like this:

    $S \rightarrow NP + VP$
    $(D) + N \quad V + (Adv)$
    The rent collector + yapped loudly.

25. The adverbial (*Adv*) in Sentence Design # 1 tells something about the verb. We may say that the adverbial answers the question HOW.
26. Examine this sentence of SENTENCE DESIGN TWO:
    The man looks youthful.
    The verb 'looks' operates in such a manner, that we see a relationship between ,'man' and 'youthful'.
27. The verb '*looks*' links the noun man to the adjective 'youthful'. Other adjectives that can be used in this design are: sad, happy, sour, sweet, nice, tall, short, bothersome.
28. In sentences such as:
    The dinner smelled good.
    The lady appeared tall.
    The girl seemed nice. –
    the linking verbs 'smelled', 'appeared', and 'seemed' require adjectives.
29. Thus, our Sentence Design Two looks like this:

    $S \rightarrow NP + VP$
    $(D) + N \quad V\text{-}L + Adj$

    Notice that our adjective is not in parenthesis.

PRACTICE EXERCISE # 4

In each of the following sentences, complete the *VP* and label each sentence according to its design:

_____ 1. The two girls seem _____.
_____ 2. The choir sang _____.
_____ 3. Coffee tastes _____.
_____ 4. His tent appeared _____.

_____ 5. The greyhounds raced _____.
_____ 6. The mountains seemed _____.
_____ 7. Martha dances _____.
_____ 8. The flowers near the pond seem _____.
_____ 9. Boy Scout Troop 92 marched _____.
_____ 10. The old man hobbles _____.

LESSON FOUR

30. SENTENCE DESIGN THREE: Examine these two sentences:
The milk became clabber.
Sally remained my friend.
31. The verbs 'became' and 'remained' set this design into a category of its own. Notice that the nouns that follow the verbs show a very close relationship to the nouns in the *NP*.
32. We shall call the verb in this design the *V–b* verb; *b* stands for BECOME.
33. The *V–b* verb has two forms: BECOME and REMAIN. In this design the noun in the *VP* refers to the noun in the *NP;*
milk ..... clabber
Sally ..... friend
34. Compare the design for Sentence Design Three to the following sentence:
Many of the boys became our friends.

$S \rightarrow NP + VP$
$(D) + N + V\text{–}b + (D) + N$

Notice that the first noun is in the *NP;* the second is in the *VP*.
35. SENTENCE DESIGN FOUR: In some cities the system of transportation is called the transit system. Buses and trains carry people from one destination to another. The word 'transit' means passing over or passing through. The word 'transitive' comes from 'transit'.
36. In the sentence: The senator cut the ribbon. — we see the verb 'cut' performing a unique duty. Since our sentence does not end after 'CUT', we think, therefore, of the senator cutting SOMETHING.
37. We shall call 'CUT' a TRANSITIVE VERB or *V–t*. This verb is followed by a NOUN PHRASE which stands for the SOMETHING.
38. We notice that a noun phrase can be part of the verb phrase. This noun phrase (*NP*) is called an object. Notice these examples:

NP		*VP*
$(D) + N$		$v\text{–}t + (D) + N$
Ruth	wrote	a story
I	washed	my hair.

Fred	ate	a banana.
Senator Kennedy	reached	the top.
Betty	worked	the problem.
The lumberjack	felled	the tree.
The mother	fed	her children.

39. Our Sentence Design Four looks like this

$S \rightarrow (D) + N + V\text{–}t + (D) + N$

Compare the sentences in Block 38 to this design.

40. In Sentence Design Four, we included the OBJECT in our sentences. For our next kind of sentence, we shall add another new part. Examine this sentence:
Jesse bought his mother some flowers.

41. Our sentence can be separated like this:
Jesse ..... bought his mother some flowers.

42. The verb *'bought'* falls into a class called the *V–g* verbs; 'g' stands for GIVE. Other verbs for this design are ones such as: bought, wrote, sent, found.

43. The two nouns in our *VP* are called DIRECT OBJECT and INDIRECT OBJECT. The indirect object is the FIRST NOUN; the direct object is the SECOND NOUN in the *VP*.

44. The *V–g* verb designates Sentence Design Five; remember that our indirect object comes before our direct object. Here is another sentence that you may compare to the design:
The United Nations gave Nigeria some assistance.

$S \rightarrow (D) + N + V\text{–}g + (D) + N + (D) + N$

PRACTICE EXERCISE # 5

Below you will find three sets of noun phrases and verb phrases. These sets have been chosen in such a way that you will be able to make three sentences from the phrases in each set. In the spaces following each set, you are to use the given phrases and combine them to build three sentences as representing Designs 3, 4, and 5. Use the phrases exactly as they stand. Use each phrase only once, and use all the phrases given.

SET ONE:	several spirituals	the farmer
	sent Hybla some honey	became my best friends
	several of the girls	the choir sang

Sentence Design Three _____
Sentence Design Four _____
Sentence Design Five _____

SET TWO:	threw Mildred the basketball	the moon
	became bright and shiny	cut the yellow roses
	my older sister	Alice

Sentence Design Three _____

Sentence Design Four _____

Sentence Design Five _____

SET THREE:	many Beatniks	the congress
	sent President Johnson	wear beards
	Bill 208	
	some of the cranberries	appeared quite rotten

Sentence Design Three _____

Sentence Design Four _____

Sentence Design Five _____

45. *Sentence Design Six:* In this design we shall use an arrangement somewhat like Design Five. But there is an important difference. Examine this sentence:
The teacher called me an angel.
46. The verb for this design is a *V–c* verb; 'c' stands for CALL. Other verbs of this design are ones such as: 'consider', 'suppose', 'believe', and 'thought'
47. The *V–c* verb requires that the two nouns in the *VP* refer to the same person or same thing. Notice the sentence in Block 45: 'Me' refers to 'angel', or we can say that 'Me' is the same person as 'angel'.
48. In this design, the first noun in the *VP* is called the DIRECT OBJECT and the second noun is called the OBJECT COMPLEMENT.
49. The object complement can be a noun or an adjective. Notice these two sentences:
Mother thought the grocer honest.
Mother thought the grocer a failure.
50. Although the object complement can be a noun or an adjective, our design does not change.

$$S \rightarrow (D) + N + V\text{–}c + (D) + N + (D) + N$$

Compare: The king considered the clown a fool.

51. SENTENCE DESIGN SEVEN: This design is similar to Design Six. Compare these two sentences:
Mother thought the grocer honest.
The class elected Rose secretary.
52. The verb for this design is called a *V–e* verb: 'e' stands for ELECT. Other verbs of this design are: appoint, make, choose, and vote.

53. In this design the object complement must be a noun. An adjective cannot be substituted for a noun.
54. Look carefully at the design for Sentence Design Seven:

$S \rightarrow (D) + N + V\text{-}e + (D) + N + (D) + N$

Compare: The scouts elected Theodore their leader.

PRACTICE EXERCISE # 6

Classify each of the following sentences as one of Design Six or Seven:

_____ 1. Members of the class considered him a genius.
_____ 2. Mr. King supposed the group an honest one.
_____ 3. My oldest sister considered me foolish.
_____ 4. The politicians elected my former class mate their candidate.
_____ 5. The wicked sailor made the mariner a scapegoat.
_____ 6. Our photographer considered Peggy beautiful.
_____ 7. My brother and I voted Dianne the most talented singer.
_____ 8. Rev. Jones thought the young child angelic.
_____ 9. The boys chose Henry their spokesman.
_____ 10. We called the leader of our organization brilliant.

LESSON FIVE

55. The verb BE has many forms that serve to introduce the verb phrase. We may use any one of these *eight* forms:

1. Be	5. Was
2. Am	6. Were
3. Is	7. Being
4. Are	8. Been

56. Since the verb BE has these eight forms, we may better understand them if we divide this verb into three different sentence designs, DESIGNS EIGHT, NINE and TEN.
57. Examine these two sentences:
The bird sang sweetly.
The bird is here.
58. The first sentence in Block 57 is familiar to you. We remember that this sentence represents Design One. 'Sweetly' is an adverb which may or may not be indcluded in the design.
59. In the second sentence in Block 57, we notice that 'here' is also an adverb. It is needed in the sentence. Therefore, our design looks like this:

$S \rightarrow (D) + N + V\text{-}be + \text{ADV}$

This is the pattern for SENTENCE DESIGN EIGHT.

60. The adverbs that occur in Design Eight are those of TIME and PLACE. Notice these sentences:
Jerry is outside.
The tiny Sparrows were nearby.
The dance is in the evening.
61. Compare these two sentences:
The man looks youthful.
The man is youthful.
62. The first sentence in Block 61 represents Sentence Design Two. We realize that 'youthful' is an adjective in both sentences, and the adjective is needed in both sentences.
63. However, the second sentence contains a form of the verb BE. This sentence is an example of SENTENCE DESIGN NINE. Note the difference in meaning of the sentences.
64. Compare the designs of Sentence Design Two and Sentence Design Nine:

$S \rightarrow (D) + N + V\text{–}L + Adj.$ (SENTENCE DESIGN TWO)
$S \rightarrow (D) + N + V\text{–}be + Adj$ ((SENTENCE DESIGN NINE).

65. Other examples of Sentence Design Nine are:
He is wise.
The buckets are empty.
I am happy.
All of the children are ready.
Estelle is ill.
66. SENTENCE DESIGN TEN is similar to Sentence Design Three. Compare these two sentences:
Sally remained my friend.
Sally is my friend.
67. We notice that the verb 'be' is used in the same manner as the *V–b* of Design Three. The *V–be* links the noun in the *NP* to the noun in the *VP*.
68. Look carefully at the design for Sentence Design Ten.

$S \rightarrow (D) + N + V\text{–}be + (D) + N$

Note these examples:
They are my friends.
I am a student in junior high school.
These mice are rodents.
He was an important officer in the coast guard.
69. In normal language use, we use the BE sentence more than any other sentence design. Notice the three kinds of BE sentences again:
The child is her.

The child is happy.
The child is a boy.

70. Examine this sentence:
The child was on the porch.
Can you classify the part on the porch'?

71. We have already used expr'essions such as:
on the porch
in the coast guard
in junior high school
of our organization
But these expressions were merely added to the basic sentence parts.

72. In the sentence:
The child was on the porch.
'on the porch' is used as an adverb. This is an example of Sentence Design Eight. The adverb used is one of PLACE.

73. The expression 'on the porch' is introduced by a preposition. Nctice that the preposition occurs with a NOUN PHRASE.

74. In Sentence Design Eight, we can use prepositional phrases. Suppose we look at examples of prepositions of TIME and PLACE:

Prepositions of Place		Prepositions of Time
above	against	before
across	around	during
after	along	since
below	inside	in
among	beneath	at
near	within	after
in	at	by
by	on	

75. For our purposes, we want to remember that the prepositional phrase is a SUB–PART of the sentence. Although the prepositional phrase 'on the porch' comes after the BE verb, it is written as an ADVERB in the design.

76. As you proceed with studies of English sentences, you will learn a great many features of BE sentences. These features will become meaningful as you learn more about different kinds of writing.

PRACTICE EXERCISE # 7

A. In each of the sentences below, fill in the blank spaces with a proper word that will name the sentence as Design Eight, Nine, or Ten. You may use a

prepositional phrase to add variety to your designs. Label each sentence as to its design.

_____ 1. Our class was _____.
_____ 2. The hot-fudge sundae _____.
_____ 3. My tall, handsome cousin is _____.
_____ 4. The boxes are _____.
_____ 5. I am _____.

B. Below are several groups of words. Use them in sentences to illustrate Sentence Design Eight:

on the water-front beneath the stage
at my house
after the game before Tuesday

1.
2.
3.
4.
5.

LESSON SIX

77. We have seen the ten designs of English kernel sentences. However, these sentences are seldom as simple as the ones given in the lessons. In order to add clarity and variety to our sentences, we can expand certain parts.
78. The VERB PHRASE can be expanded, as we have seen, by adding other sub phrases to our verb phrases. We can also expand the verb phrase by adding other forms to the verb. We shall call this operation VERB EXPANSION.
79. Verb expansion can be accomplished by adding a MODAL. Compare these two sentences
    I gave him the gift.
    I shall give him the gift.
    Notice that the modal comes BEFORE the verb form.
80. When we use a modal, we must use the FIRST form of the verb. Examples:
    To give ..... shall give
    To eat ..... shall eat
    To march ..... shall march
81. Other examples of modals are:

will	may	would
can	might	could
	should	

82. Suppose we apply a modal to Sentence Design Three: Examine this sentence:
Jerome will become a minister.
83. We remember that Sentence Design Three is written as:

$$S \rightarrow (D) + N + V\text{-}b + (D) + N$$

Jerome became a minister.
84. Thus, by adding a modal to Sentence Design Three, we have the following pattern :

$$S \rightarrow (D) + M + V\text{-}b + (D) + N$$

Jerome will become a minister.
Modals may be added to other sentence designs.
85. We can accomplish verb expansion by adding 'BE + ING. Compare these two sentences:
Linda walks slowly.
Linda is walking slowly down the street.
86. The second form of the verb is used with the BE + ING expansion. Notice these examples of the expansion.
walking ..... is walking
marching ..... is marching
eating ..... is eating
87. Let us observe these examples of be + ing expansion:
am sleeping — are skating
were going — was enjoying
is telling
88. When we apply be + ing expansion to Sentence Design One, our pattern looks like this:

$$S \rightarrow (D) + N + be + V\text{-ing} + (Adv)$$

Linda is walking slowly down the street
89. Verb expansion can be accomplished by adding HAVE + PART. The word 'part' stands for participle. We used this term for the FIFTH form of verbs.
90. We recall that the fifth form of the verb can end in 'en', 'ed', 't', or 'd'.
broken — cast
walked — bid
91. Let us compare these two sentences:
John wrote me a letter.
John has written me a letter.

92. In the above block, we applied the HAVE + PART. expansion to Sentence Design Five.
    Wrote ..... has written.
93. The have + part. expansion can be applied to other sentence designs: Here is an example of Sentence Design Two:
    John grew tall John has grown tall.
94. Notice the pattern for Sentence Design # 2 with have + part. expansion:

    $S \rightarrow (D) + N +$ have + part + *Adj*

    John has grown tall.
95. We can add BE + PART to a verb form in order to accomplish verb expansion.
96. Examine these sentences:
    I am finished with my lessons.
    Mr. Smith was disgusted with the noisy cat.
97. BE + PART fills the place of the verb of the *VP*, for it includes the FIFTH form of the verb.
98. Notice these expansions:
    finished ..... am finished
    tired ..... is tired
    known ..... were known
    run ..... was run
99. We can apply BE + PART to Sentence Design Five:
    Joe was finished with his lessons.
    The race was run by ten boys.
100. As you proceed with your study of English Grammar and English Sentences, you will learn more about sentence expansion and manipulations. All of this will enhance your writing of more effective sentences.

PRACTICE EXERCISE #8.

Write an effective sentence to illustrate each of these designs:

1. Design Five, 'be' + ing:

_____

2. Design Two, 'have' + part.:

_____

3. Design Eight, 'have' + part.:

_____

4. Design One, 'be' + part.:

_____

4. Design Nine, *M:*

_____

APPENDIX B: MEMBERS OF THE JURY

I.

Dr. Thomas G. Devine, Professor
School of Education (Secondary English)
Boston University
Boston, Massachusetts

Dr. Mary Jones, Professor of English Education
Salem State College
Salem, Massachusetts

Dr. John Mellon (Text–book author)
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II.

Miss Charlotte Baker	Hamilton Junior H.S.	Hamilton, Mass.
Mrs. Roberta Buchanan	St. Petersburg College	St. Petersburg, Florida
Dr. Josephine Cecco	Springfield College	Springfield, Mass.
Mrs. Pauline Faust	Clinton Kelly Junior High School	Portland, Ore.
Miss Sadie Grimmitt	Woodmere School	Portland, Ore.
Mr. Leslie L. Guster Associate Director	Commission on English College Entrance Examination Board	Boston, Mass.

Mrs. Teresa Holloman	Virginia State College	Norfolk, Va.
Mrs. Rosemary Howard	City of Worchester College	Worchester, England
Mrs. Elena LeBlanc	Louisiana State U.	Baton Rouge, La.
Miss Beverly Pantano	Middleboro Junior High School	Mayflower, Mass.
Mr. Frank Perry	Littleton Junior & Senior High School	Littleton, New Hampshire
Mr. Allen Warner	West Babylon Junior High School	West Babylon, New York

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