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THE WRITTEN LANGUAGE PATTERNS OF INTERMEDIATE GRADE CHILDREN WHEN WRITING COMPOSITIONS IN THREE FORMS: DESCRIPTIVE, EXPOSITORY, AND NARRATIVE

by

Donald R. Bortz

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THE WRITTEN LANGUAGE PATTERNS OF INTERMEDIATE GRADE CHILDREN WHEN WRITING COMPOSITIONS IN THREE FORMS: DESCRIPTIVE, EXPOSITORY, AND NARRATIVE

by

Donald R. Bortz

An Abstract

ABSTRACT

The study attempted to determine if differences occurred in the written language patterns used by intermediate grade children when they wrote compositions for different purposes. Sex and grade level were also independent variables.

The compositions were obtained from a representative sample of intermediate grade children. The children listened to recorded motivational devices and responded in writing.

Their compositions were then analyzed and their scores tabulated for each written language criterion.

It appeared that the total amount written influenced the results obtained for the criteria. The raw data were then proportioned and both sets of data were subjected to a correlation program and analyses of variance programs.

The results for the proportioned data criteria were selected for reporting because they were less influenced by the magnitude of the writing.

The following conclusions, which may have implications for the general population, are drawn from the sample of the study which involved intermediate grade children:

1. The correlation matrixes reveal that many of the criteria are highly related and that the independent and dependent variables are intra-related and inter-related. Of 820 correlation coefficients 316 are found to be at or beyond the .05 level of significance for the raw data variables, while 118 of 435 correlation coefficients

are significant for the proportioned data.

2. The written language patterns of intermediate grade children are significantly different when they write for different purposes, i.e., descriptive, expository, or narrative compositions.
   a. In expository writing the children write the greatest quantity, use the most complexity, and use the most subordination. They write:
      1) the longest sentences, the longest T-units, and T-units with the greatest frequency.
      2) complex and compound-complex sentence types with the greatest frequency.
      3) the complex sentence type with a frequency that approaches the simple sentence type's frequency.
      4) subordinate adverb and noun clauses with the greatest frequency.
   b. The narrative writing of the children reveals the least complexity and subordination. They write:
      1) each sentence type with the least frequency.
      2) subordinate adjective and adverb clauses with the least frequency.
   c. In descriptive writing the intermediate grade children use the least quantity; however, they use the greatest frequency of certain sentence types. They write:
      1) the shortest sentences and T-units.
      2) simple and compound sentence types with the

greatest frequency.

3) subordinate adjective clauses with the greatest frequency.

3. Intermediate grade boys and girls exhibit similar written language patterns regardless of their grade level or the form of their compositions.
4. Pupils in fourth, fifth, and sixth grade use similar written language patterns. Two exceptions are noted:
   a. T-units are written with greater frequency by fifth grade students than by fourth grade students.
   b. subordinate adverb clauses are written with greater frequency by sixth grade pupils than by pupils in fourth or fifth grade.
5. Analysis of data drawn from the study shows that the sentence and the T-unit criteria yield similar results; however, the T-unit is easier to identify and facilitates the identification of subordinate clauses.
6. Children's compositions reveal the following descending order of frequency for sentence types: simple, complex, compound, and compound-complex.
7. In the use of subordination the children write the subordinate adverb clause with the greatest frequency.
8. The compositions of intermediate grade pupils do not reveal a frequent use of garbles, words which do not fit into the content.

CHAPTER I

INTRODUCTION

The English language is of vast importance in the United States because English is not only a subject, but the language of instruction for virtually every other subject taught in the public schools.

Language involves the skills of reading, writing, speaking, and listening. Collectively these skills are known as the language arts or the communications arts.

The author is particularly interested in written language because of its great utilization. The demands for writing memos, letters, reports, and articles bombard a large portion of the population. "We continue to need functional writing to fulfil the world's work." is a succinct statement to this point (Schmidt, 1968, p. 645).

While the patterns of oral language are quite defined in children beginning school (assuming these are native-born children whose parents speak English), virtually all children begin school without writing skills. This is expected because of two factors: first, there has not been any writing instruction prior to that time and second, the children do not realize the need for writing skills.

During the last forty years there has been much interest in analyzing children's written composition. The compiling of data is aimed at discovering the written language patterns of children in order to devise proper instructional strategies.

PURPOSE

Communication is vital to the human race; the need for clear communications within and between societies is imperative.

In the quest to improve communication, instruction in all phases of written language must be improved. The desirability of mastering various forms of composition is necessary to satisfy the multi-purposes of the communicator.

Presently there is a lack of base line information concerning the written language patterns for the descriptive, the expository, and the narrative forms of composition. In the study specimens of each of these forms will be gathered from subjects of both sexes and from three grade levels. The analysis of the data should allow insight into the written language development of these children. This information on how children write when using different forms of composition is vitally important since meaningful instruction must be related to the ability of the learner to acquire the concept being presented.

The discovery of any significant differences in written language patterns has implications for language arts curricula and learning strategies. The reasons for one form of composition to exhibit more mature written language patterns than is exhibited in a different form need to be explored.

Such analysis could conceivably lead to changes in the way written language skills and patterns are presented as well as when they are presented.

PROBLEM

Investigation is necessary to determine if written language patterns differ when the writing is done for different purposes or for different needs. Such information has an important value for all analytical studies of written language. If investigation shows that there is a consistency of written language regardless of purpose and form of writing, then the possibility of existence of an unknown variable can be disregarded. However, if investigation shows that there are significant differences in written language patterns dependent upon the purpose and form of writing, then this variable must be considered when analyzing written composition.

The intent of this study is to analyze selected aspects of the written compositions of intermediate grade children in order to identify differences in their written language development in terms of sex, grade level, and form of writing, i.e., descriptive, expository, and narrative.

In compiling such base line information it is necessary to investigate the various forms of written compositions to ascertain how the use of different forms might affect the patterns of written composition. If only narrative writing is analyzed, the investigators can only generalize and hypothesize for narrative composition. Therefore, it is necessary to analyze compositions of various forms to note similarities or differences in certain written language patterns.

This area of research has not received wide attention in the past. In fact, a review of research has succeeded in finding only two studies which investigate the effects of the form of composition on written language patterns. These studies by Zilla Elizabeth Wiswall (1926) and Lois V. Johnson (1967) are separated by approximately forty years. In addition they are done in different parts of the country and with different aged children.

RELATED LITERATURE

Written composition has been analyzed in a number of different ways. There has been rather extensive evaluation in terms of capitalization, punctuation, and general grammar. The area of mechanical structure is documented in the Encyclopedia of Educational Research (1960, p. 457).

Another area of evaluation is the analysis of content in terms of creativity. Creativity in writing is definable in a number of different ways; thus, this area will continue to yield various data. The work done by Harold G. Shane (1955, 1963) for the Association for Supervision and Curriculum Development provided a good summary of the research.

While the structural mechanics and the creativity of the contents are vital areas of composition which will continue to be investigated and evaluated, there is another area of composition which needs investigation. The area is the form of the writing which is governed by the purpose of the communicator.

The need for various forms of writing is expressed by many. Paul Diederick, writing in the Encyclopedia of Educational Research, suggests (1960, p. 465) "...that the forms of writing be related to that of everyday life: making an explanation, presenting a persuasive argument, or detailing a simple narrative without a plot."

Lois V. Johnson, writing in Elementary English (1962, p. 570), cites the values of expository writing and reviews descriptive writing principles.

Henry F. Fillmer, also writing in Elementary English (1968, p. 737), cites the importance of narrative writing and its various uses.

The need for varied writing experiences is expressed by Norman H. Sam (1962, p. 100) who states, "The language arts curriculum should make provision for activities which promote and provide situations likely to be motivational to children for practically all kinds of writing experiences."

Underlying the investigations in composition has been the important idea of analyzing the natural growth and development which occur in children. Certain researchers for the last forty years have been gathering base line information aimed at identifying and describing how writing skills develop.

Patricia Bates Simun makes these statements (1967, p. 22):

> In spite of the obvious limitations, enough studies indicate that the analysis of written composition will reveal identifiable patterns in the written language of children.
>
> [and]
>
> Research concerning growth in both oral and written expression indicates that there is a

> sequence in the pattern of growth in children's use of language and that a study of selected aspects of written language expression at various levels of maturity may reveal these growth patterns.

Simun in her study of 14,400 written compositions from four geographic areas of the U. S. is able to demonstrate patterns in certain aspects of written language development.

It has been found that children at different grade levels write differently, and that the lower the grade level, the more dissimilar will be the written language when compared to that of educated adults.

In literature concerning written language development the term "maturity" appears. Kellogg W. Hunt (1966, p. 5) states that "...maturity is intended to designate nothing more than the observed characteristics of writers in an older grade."

Hunt's study is a "...search for developmental trends in the frequency of various grammatical structures written by students of average IQ in the fourth, eighth, and twelfth grades." (1966, p. 1). It shows significant written language differences among the three levels. He states (1966, p. 143):

> The older higher grade level student can incorporate and consolidate more grammatical structures into a single grammatically interrelated unit. The younger student produces short separate units. His span of grammatical concern or attention is narrow. As he matures that span broadens so he casts the net of consolidation over larger and larger bodies of material. As he consolidates, he also discards needless words. His redundancy lessens and his succinctness gains.

Samuel S. Zeman's study (1966) views sentence types and sentence patterns. In his conclusions (1966, p. 31) he notes

that there are differences between the second and third graders regarding sentence types. The second graders use significantly more simple sentences and significantly less complex sentences than the third graders. Third graders use more compound and more compound-complex sentences than the second graders though these differences are not significant.

Eugene S. Stine in his study states the following as his purpose (1965, p. 2):

> This pilot study was initiated (1) to identify basic structural patterns in compositions written by intermediate grade children (2) to establish evidence for determining growth gradients in written composition, and (3) to develop indices of modification which would reveal levels of maturity in their written language which might facilitate scholastic organization of written language programs.

Stine's conclusions (1965, p. 84) note that the frequency of various structural patterns in the written compositions reveals significant differences in terms of sex and grade, and the number of years children spend in school has a greater effect upon the use of the patterns than does chronological age.

The opening statement under "Summary and Conclusions" of Sam's dissertation (1962, pp. 97-98) reads as follows:

> The results of this study revealed consistent patterns of significance. Where grade level was declared as a significant main effect for one criterion variable it was also found to be a consistent main effect for other highly related variables.
>
> [and]
>
> Growth in the written language ability of intermediate grade children tends to follow from the shorter to the longer sentences and from the simple to the more complex sentences as the children mature through the intermediate grades.

These recent studies make a strong case for the theory that children do mature in written language. Furthermore, their findings are the up-to-date work of research going back to at least 1924 when Stormzand and O'Shea's study states that the ratio of complex sentences increases and the ratio of simple sentences decreases for children in the fourth to eighth grades (Bear, 1939, p. 314).

The studies of Grogner (1933), Hoppes (1933) and Shepherd (1933) show evidence of the increased complexity of sentences as children moved from grade to grade. Hoppes' and Shepherd's studies utilize elementary students while Grogner's study utilizes secondary students.

Bear's (1939) analysis of 12,000 stories written by children in grades one to eight, Heider and Heider's (1940) study involving deaf and hearing children, Smith's (1944) study of child development, and Wise's (1958) thesis on primary children all concur with the belief that students decrease their use of simple sentences and increase the complexity of their sentences as they progress from grade to grade.

There are few studies concerning the effects of form on written language patterns. A study by Zilla Elizabeth Wiswall (1926) used 200 eighth grade students from Wisconsin. The students wrote four different compositions: a reproduction, a narrative, a simple exposition, and an elementary form of argument. Her findings are that (1) the number and percentage of simple, complex, and compound-complex sentences, and (2) the number and percentage of sentences containing 2, 3, and 4

or more independent clauses in each kind of composition show very little variation. However, a higher percentage of sentences is written in the narrative compositions.

Lois V. Johnson (1967) reports a study using sixteen third graders from California. Each child wrote three compositions: descriptive, expository, and narrative. Her study shows that (1) there is a consistent relationship of rank order in the total number of sentences used in each form for subjects in each quartile, (2) there is no relationship between the number of sentences and the average number of words per sentence, (3) the simple sentence is most frequently used followed by the complex, then the compound-complex, and finally the compound sentence, (4) there is a great use of the complex sentence in expository writing (its use almost equals the use of the simple sentence), (5) of the four sentence types the narrative compositions average 3.1 types, the expository 2.4, and the descriptive 2.1, (6) the relationship of form of composition to the amount of writing shows that the narrative compositions accounted for 49% of the total sentences, while 26% result from the expository compositions and 25% are the result of descriptive compositions.

Forty-three years ago Wiswall stated (1926), p. 441):

> Teachers of English have been under the general impression that the type of topic assignment determines, to a greater or lesser degree, the kinds of sentences pupils use in their composition work. No evidence has yet been produced to show the extent to which...sentence structure varies in different types of written work.

The purpose of the study is to uncover what, if any, differences occur in the written language patterns of children when they write different forms of compositions.

HYPOTHESES

Hypotheses

Intermediate grade children will exhibit similar written language patterns when writing three original compositions in descriptive, expository, and narrative forms.

The grade level of the pupils will not affect the written language patterns when writing three original compositions in descriptive, expository, and narrative forms.

The sex of the pupils will not affect the written language patterns when writing three original compositions in descriptive, expository, and narrative forms.

Sub Hypotheses

There will be no significant differences in terms of sex, grade level, and form in the written compositions of children for the following criteria:

1. number of sentences per composition.
2. average length of sentence.
3. number of T-units per composition.
4. average length of T-units.
5. number and percentage of sentence types.
6. number and percentage of clause subordinations.

DEFINITIONS

The definitions of the three forms of composition are basically taken from John S. Naylor (1942, pp. 1-4).

Descriptive: that form of composition having for its purpose the formation of a word picture to present the impressions made upon our senses. It deals with factual material and relates what has been experienced. Synonym: depicting.

Expository: that form of composition having for its purpose definition, evaluation, or explanation. The explaining it achieves is objective and it deals with factual material. Synonym: explaining.

Narrative: that form of composition having for its purpose the telling of a story primarily for the entertainment of the reader. It often deals with imaginary material and is subjective. Synonym: storytelling.

Definitions listed in the Analysis (pp. 22-26) are not defined here.

Certain words or groups of words are paramount to the study. They are referred to so frequently that it is convenient to represent them by symbols; therefore, the following symbols will be used in the study:

D Descriptive form of writing

E Expository form of writing

N Narrative form of writing

P Proportioned data

R Raw data

CHAPTER II

METHOD AND PROCEDURES

DESIGN

This descriptive study employed a cross-sectional approach for gathering composition specimens.

Three composition specimens were obtained from each subject. The sample population was 50 subjects from each of the following levels: grade four, grade five, and grade six.

Each child participated in three different directed activities which culminated in the writing of three original compositions. The compositions were examples of descriptive, expository, and narrative forms of writing.

Illegible specimens were eliminated, and if a child missed one or more of the three writing sessions, his other specimens were eliminated. When there were more children's specimens than necessary, the children's writings were randomly selected until the number for each subgroup was reached.

Table 1 shows the design of the study.

The specimens were collected over a three week period in order to eliminate any possibility of writing maturity occurring while the study was being conducted. Also, the type of written form required in each session was rotated in order to rule out any difference which might occur from collecting all descriptive writings at one period, all expository

TABLE 1

DESIGN MODEL

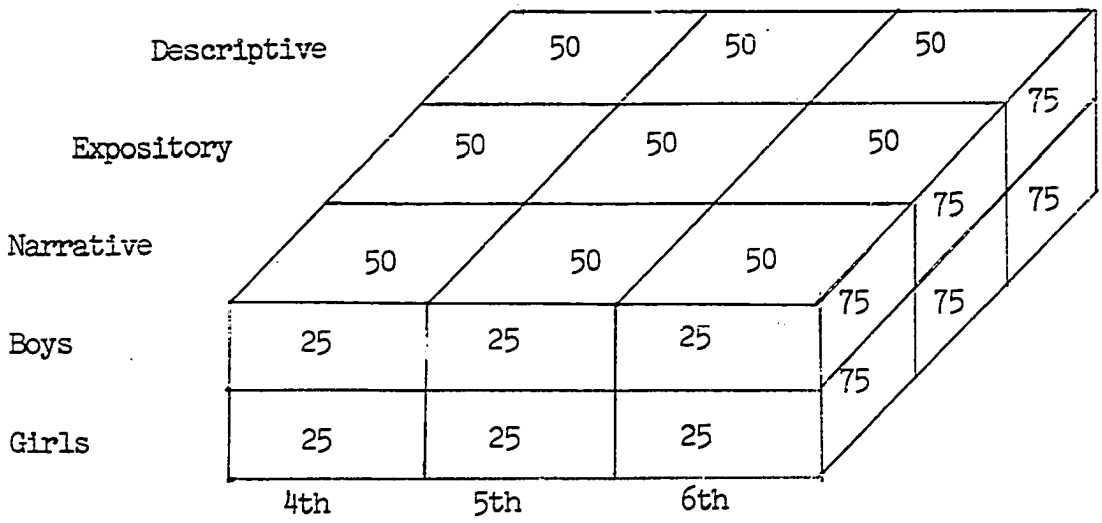


TABLE 2

DATA COLLECTION MODEL

1st week	2nd week	3rd week
4a descriptive	4a narrative	4a expository
4b expository	4b descriptive	4b narrative
4c narrative	4c expository	4c descriptive
5a expository	5a descriptive	5a narrative
5b narrative	5b expository	5b descriptive
5c descriptive	5c narrative	5c expository
6a narrative	6a expository	6a descriptive
6b descriptive	6b narrative	6b expository
6c expository	6c descriptive	6c narrative

during the second period, and all narrative at the third period.

Table 2 shows how the specimens were collected.

The writing activities were directed by the author and great effort was made to have the sessions be as similar as possible. Pretaped orientations were used. The intent was to cause each student (1) to start writing immediately after the orientation and (2) to write for the entire period.

The prerecorded tapes were designed to minimize the relationships and rapport between the students and regular teachers and between the subjects and the author.

The conditions under which the responses were obtained can be clearly described and easily replicated (see Appendix).

In order to meet the objective of gathering specimens which theoretically were similar in length, an informal pilot project was undertaken. The project was carried out in the East Stroudsburg State College Learning Center intermediate grades during the academic years of 1966-67 and 1967-68 when the author was the language arts teacher for grades three, four, five, and six.

By reviewing literature and surveying elementary teachers and college professors, examples of various topics for each of the three forms of composition were compiled (Table 3). The lists were then arbitrarily narrowed as the topics were tried in order to ascertain how successful each was in causing the pupils to begin writing immediately and to maintain the writing for the entire period.

TABLE 3

COMPOSITION TOPICS USED IN PILOT STUDY

Descriptive	Expository	Narrative
A description of my best friend	How to play my favorite game	An interesting dream
My Halloween costume	How to make friends	A camping adventure
My holiday decorations	How the pioneers lived	The big game
A description of my house/apartment	How to take care of a pet	The haunted house
What I felt in the mystery bag	How we spend Easter	My pet's adventure
A description of my favorite animal*	School rules*	Astronauts to Mars*

* These topics were selected to be used in the study.

POPULATION

Intermediate grade children were chosen for this study because they usually possess sufficient skills in cursive writing and spelling to allow them fluency of written expression.

Kellogg Hunt's research (1965) provided support for conducting written language investigations in the intermediate grades. He found tremendous changes in the written language patterns in children between grade four and grade eight. The changes in that four year span were of a greater magnitude than the changes noted in the four year span between grade eight and grade twelve.

The recent investigations of Loban (1961), Sam (1962), Stine (1965), Hill and Hill (1966), and Simun (1967) also showed changes in certain written language patterns and/or differences in the frequency of use of certain written language patterns for intermediate grade children.

The above illustrated that considerable changes in written language patterns occurred in the intermediate grades; therefore, it's a valid level for investigation.

The sample population was obtained from three classrooms each of fourth, fifth, and sixth grade pupils from the Clearview and Arlington Heights Schools, Stroudsburg. The classrooms had a heterogeneous composition so far as pupil ability and social-economic background were concerned.

The IQ's of the individuals were obtained from existing

school records. The Kuhlmann-Anderson Test, 6th Edition, was used. It was found that the mean IQ's of the sample population varied less than one point for the three grade levels (fourth 111.10, fifth 110.46, and sixth 110.17). For the six subgroups (Table 2) the mean IQ's were within three points and most of this variation was due to the fact that the girls at each grade level had mean IQ's which were approximately two points higher than the boys'.

At the time of the study, Stroudsburg, Pennsylvania, had a population of about 6,000 people and the adjacent community, East Stroudsburg, had a similar population. The area had a large portion of their population living in housing of close density. The schools drew from the urban area as well as from village suburbs and rural areas.

The works of Sam (1962), Hill and Hill (1966), and Simun (1967) stated that residence and/or geographic area had no significant effect on the written language patterns of intermediate grade students. Therefore, the sample used in this study seemed satisfactory. (Note: Residents in large ghettos, poor rural areas, and reservations were not considered in the above generalization.)

The parents of the children were basically of the white race, and were employed in a great variety of white and blue collar occupations.

TREATMENT

The investigator visited each classroom on three different

occasions within a period of three weeks. (See Table 2, Section "Design.")

A short period was used to explain the general procedures and assure the pupils that the experience would not be involved in any school mark. No effort was made to disguise the study since each writing session would be similar and comparisons would be made between the writings done during these sessions. Any change caused by a "Hawthorne Effect" should be constant and, therefore, of no consequence.

In each session the pupils listened to a tape recording. The tape recording presented a topic to motivate writing and guided the pupils to write on that topic in a specified form, i.e., descriptive, expository, or narrative. See Appendix for the description of these tapes.

After the tape was played, a short verbal period followed to allow for discussion, questions, and answers. Each child was given a lined piece of paper and a pencil and was instructed to begin writing. Children were instructed to spell as best they could. (See form in Appendix.)

After twenty-five minutes the papers were collected. There was no problem obtaining specimens; the children appeared eager to participate.

ANALYSIS

All specimens were carefully checked to make sure that each clearly and precisely indicated (1) the sex and grade level of the writer and (2) the form of the composition.

The following procedures and definitions were used to conduct the analysis:

1. Sentence Count

Each sentence will be identified, counted, and tabulated for every composition.

A sentence is defined as a group of words expressing an idea which normally has two essential elements present: the subject and the predicate. It begins with capitalization and ends with any terminal punctuation, i.e., a period, question mark, or exclamation point. In the study a sentence is limited to two independent clauses unless (1) the writer has used independent clauses in a series or has written more than two closely related clauses and (2) his punctuation shows his intention.

Run-on sentences containing three or more independent clauses, which do not meet the above requirement, will be arbitrarily, but sensibly, divided.

An incomplete sentence or a sentence fragment lacks either a subject or a predicate. However, it is possible that a group of words which lacks either a subject or a predicate can be considered a complete sentence providing the missing part is obviously implied. Example: "Come here." which really implies, "You, come here." Also, two adjacent fragments which make a sentence will be treated as a mis-punctuated sentence. Garbles, words or groups of words which

don't fit into the content, will be noted and tabulated.

2. Average Length of Sentences

Each word of every identified sentence will be counted and the total number of sentences will be divided into the total number of words to provide the average length of sentences. The results will be tabulated for each composition.

3. Number of T-units

Each T-unit will be identified, counted, and the results tabulated for each composition. A T-unit is defined as a main independent clause with all, if any, subordinate clauses attached to it. (Hunt, 1965, p. 20) The number of subordinates can vary; however, there can never be a linking of two or more independent clauses.

4. Average Length of T-units

Each word of every T-unit will be counted and the total number of T-units will be divided into the total number of words to provide the average length of T-units. The results will be tabulated for each composition.

5. Number and Percentage of Sentence Types

Each sentence identified under item #1 will be classified according to the definitions listed below. The number and percentages of types will be tabulated for each composition.

The four basic sentence types (Wolley, Scott & Bracher, 1958) as used in this study are:

Simple: A simple sentence consists of one independent clause with no dependent clauses attached, though it may have modifying phrases.

Example: Patricia met Dave on a Sunday a few years ago.

Compound: A compound sentence consists of two or more independent clauses.

Example: I polished my car and she cleaned the windows.

Complex: A complex sentence contains one independent clause and one or more dependent clauses, which express subordinate ideas.

Example: Since his ankle was injured, he did not play baseball.

Compound-complex: A compound-complex sentence consists of a compound sentence and one or more dependent clauses.

Example: Carol washed the dishes and Joan vacuumed the rugs while their mother went shopping.

6. Number and Percentage of Subordinate Clauses

Each subordinate clause will be identified and classified as being one of the following: noun, adjective, or adverb. Each type will be counted, and the number and percentage will be tabulated for each composition.

The following definitions will be used (Hunt, 1965, p. 73):

> Noun clauses usually are direct objects after some verb like think, or say, or ask ("I thought that he would be here." "I asked who would be there.") Noun clauses occasionally appear as predicate nominals and subjects and in other positions which nouns occupy...
>
> Adjective clauses always follow the nouns they modify (though not always immediately). ("He's the one that or who or whom I told you about.")
>
> Adverbial clauses, in contrast to the other two kinds, are, except in special cases, movable. That is, they can precede or follow or interrupt the main clause to which they are attached. ("When she comes, we'll leave." "We'll leave when she comes.") Clauses of comparison, however are not movable though they are commonly classed as adverbial.

All information was placed on keypunch cards. These data cards were arranged so that the criterion variable could be analyzed in terms of the three forms of written composition, the three grade levels, and the two sexes.

The Control Data Corporation's CDC 6400 Computer of Lehigh University was utilized to tabulate, describe, and analyze the data. The Biomedical Computer Program manual governed the programming of this computer.

The BMD02D, "Correlation with Transgeneration," program was employed to produce (1) sums, (2) means, (3) standard deviations, and (4) an intercorrelation matrix for all variables.

The BMD02V, "Analysis of Variance for Factorial Design," program was used to analyze the 3 X 2 X 3 factorial design.

This provided (1) analysis of variance tables and grand means, (2) cell and marginal means, and (3) main effects and first order interactions. Information as to the main effects of form, sex, and age, plus interactions for Grade X Sex, Grade X Form, Sex X Form, and Grade X Sex X Form were obtained.

Following the analysis of variance the F-ratios were computed (Edwards, 1954, p. 321). The .05 level of confidence was declared significant and .01 significance was noted. Significant results were further analyzed by Tukey's Procedure for Comparing Individual Means (Edwards, 1954, pp. 330-334).

The Tukey Test produced a significant gap which could be used for comparing the individual means of the main effect variables which were declared significant via the F-test. For the main effect, Sex, the Tukey Test was unnecessary. However, when there were three components to compare, as in the main effects, Grade and Form, the significant gap provided a method for comparison. The level of significance established for the test was .05.

TUKEY'S TEST

$$\text{Significant Gap} = (t_{.05})\ (\sqrt{2})\ (s_{\bar{x}})$$

$$t_{.05} = 1.966 \quad \text{(for } 432 \text{ df)}$$

$$s_{\bar{x}} = \frac{\sqrt{\text{mean square}}}{\sqrt{n}}$$

The significant gap and the order of magnitude for each significant main effect were also reported on the tables.

A means table was included for each proportioned criterion variable; it was followed by a graph, when necessary, which showed significant interactions.

The possibility of heterogeneity existed and it could have an effect on the F-distribution, and therefore, on the F-test. Guilford stated the following concerning the error caused by not satisfying the assumptions of normality and homogeneity:

> If F proves to be significant at the .05 level; this result may actually indicate significance at level of .04 to .07; one significant at the .01 level may actually be significant from the .005 to .02 levels. (1965, p. 301).

The Norton Study (Lindquist, 1953, pp. 77-90) made the points that the F-distribution was reasonably insensitive to the form of the distribution and that a moderate degree of heterogeneity of variance did not invalidate the F-test. He stated:

> Unless the departure from normality is so extreme that it can be easily detected by mere inspection of the data, the departure from normality will probably have no appreciable effect on the validity of the F-test, and the probabilities read from the F-table may be used as close approximations to the true probabilities. (Lindquist, 1953, p. 86).

Upon tabulation of the data it was noted that the sheer magnitude of the writing might affect the significant findings. Therefore, it was decided to statistically analyze the data in their raw score form and to analyze them in a proportioned score form.

The proportionalization was carried out for all appropriate dependent variables by dividing every other individual item score by the score for Total Number of Sentences. This process

was employed for the three compositions written by each child.

A group of ten criteria which hereafter will be called the proportioned data criteria group was established. It consisted of Average Sentence Length and Average T-unit Length which had already been proportioned via their appropriate averaging divisor, and eight of the remaining criteria which were proportioned as described in the prior paragraph. The reader must note (1) that Total Words when proportioned is exactly the same as Average Sentence Length and is only reported under the latter title, (2) that Total Sentences can not be proportioned by itself so it will only appear in the raw data criteria group.

A second group composed of the ten criteria with their unproportioned data will be considered as the raw data criteria group.

As noted before the raw data will be designated (R) and the proportioned (P).

The analysis of the proportioned data provided more stringent results for significance and, therefore, it was reported in greater detail in the study.

CHAPTER III

RESULTS OF STATISTICAL ANALYSES

The statistical results reported in this chapter were based upon the analysis of the written compositions of fourth, fifth, and sixth grade children from two elementary schools in Stroudsburg, Pennsylvania. The data in the study were analyzed by means of an analysis of variance and correlation program.

The following were included for reporting: the intercorrelation matrixes, the table of means and standard deviations, the analysis of variance tables, the means charts, the interaction graphs, and the chart of frequencies and percentages.

CORRELATION

Tables 4 and 5 provided the correlation matrix and the significant levels for the raw and proportioned data respectively. Table 6 provided the means and standard deviations for all the variables.

In this study N = 150 and the correlation coefficients df = 148. The significant correlations can be observed by utilizing the information provided on the charts.

TABLE 4: CORRELATION MATRIX OF RAW DATA CRITERIA

Criteria	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Grade		000	778	514	113	002	-029	134	049	021	092	143	142	145
2 Sex	000		-151	-226	-069	-220	111	-190	000	-174	-223	-161	029	-265
3 Total Words D	078	-151		845	051	474	394	605	417	900	196	640	444	527
4 Total Sentences D	051	-226	845		002	818	244	494	131	929	055	416	308	425
5 Garbles D	113	-069	051	002		047	020	075	043	-011	123	150	137	003
6 Simple Sentences D	002	-220	474	818	-047		-153	078	-166	603	-174	004	058	280
7 Compound Sentences D	029	111	394	244	020	-153		097	096	505	055	167	165	140
8 Complex Sentences D	134	-190	605	494	075	078	097		132	484	384	679	438	235
9 Compound-Complex D	049	000	417	131	043	-166	096	132		309	244	551	218	250
10 Total T-units D	021	-173	900	929	-011	604	504	484	309		070	499	351	453
11 Adjective Clauses D	092	-223	196	055	123	-174	055	384	244	069		-005	106	-004
12 Adverb Clauses D	144	-160	640	416	150	004	167	680	551	499	-005		312	334
13 Noun Clauses D	142	029	444	308	137	058	165	438	218	351	106	312		349
14 Total Words E	145	-265	527	425	003	280	140	235	250	453	-004	334	350	
15 Total Sentences E	146	-392	320	366	-040	306	-042	264	082	328	-043	264	132	712
16 Garbles E	-000	-040	036	027	011	067	-063	-009	-045	021	-040	-044	041	139
17 Simple Sentences E	149	-230	-036	102	-084	169	-161	087	-126	034	-112	-014	-040	152
18 Compound Sentences E	032	-243	134	080	053	-008	032	135	138	118	-044	226	-074	389
19 Complex Sentences E	046	-214	358	382	042	306	031	246	074	336	108	255	176	565
20 Compound-Complex E	000	-136	374	196	-044	050	172	092	325	285	-031	248	304	609
21 Total T-units E	121	-404	403	376	-035	254	050	282	178	386	-039	328	201	809
22 Adjective Clauses E	069	-209	110	146	-058	152	027	035	-044	154	-151	040	-026	433
23 Adverb Clauses E	129	-180	391	305	054	193	084	172	240	315	072	280	419	717
24 Noun Clauses E	-043	-048	245	197	-028	138	-000	181	055	169	080	156	025	250
25 Total Words N	436	-097	258	200	075	164	029	044	160	182	009	121	283	417
26 Total Sentences N	404	-090	184	223	021	212	002	061	078	185	-052	099	198	232
27 Garbles N	040	049	161	125	259	084	044	055	090	113	144	136	059	041
28 Simple Sentences N	252	-003	040	166	-059	222	-063	-004	-028	105	-082	-023	029	045
29 Compound Sentences N	260	044	167	086	087	-036	184	067	170	141	027	128	283	130
30 Complex Sentences N	317	-196	260	236	109	195	000	146	064	193	036	187	190	316
31 Compound-Complex N	204	-194	068	020	-028	057	-097	-040	082	010	-092	039	088	268
32 Total T-units N	404	-092	205	204	031	162	043	067	122	191	-040	119	252	267
33 Adjective Clauses N	117	-227	061	097	-021	130	-050	040	-077	043	000	019	-103	126
34 Adverb Clauses N	253	-125	145	066	149	082	-114	032	103	023	017	119	122	304
35 Noun Clauses N	218	-304	214	235	139	163	040	183	066	228	044	182	182	284
36 Sentence Length D	024	071	252	-257	098	-565	247	154	501	-034	227	364	202	174
37 T-unit Length D	077	004	213	-143	140	-241	-232	286	191	-193	304	291	117	148
38 Sentence Length E	057	197	237	026	046	-091	287	-066	190	138	019	072	228	336
39 T-unit Length E	052	239	156	040	043	-007	196	-073	052	082	054	-019	129	171
40 Sentence Length N	011	-030	091	-065	068	-100	011	-004	103	-035	046	073	-001	291
41 T-unit Length N	046	-069	053	-053	064	-053	-027	-020	044	-051	047	025	-057	295

Level of Significance for 150 df

.05	.01
159	208

Note: decimals are omitted

TABLE 4 : CORRELATION MATRIX (continued)

Criteria	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1 Grade	146	-000	149	032	046	-000	121	069	129	-043	436	404	040	252
2 Sex	-392	-040	-230	-243	-214	-136	-404	-209	-180	-048	-097	-090	049	-003
3 Total Words D	319	036	-036	135	358	374	403	110	391	245	258	184	161	040
4 Total Sentences D	366	027	102	080	382	196	376	146	305	197	200	223	125	166
5 Garbles D	-039	011	-084	053	042	-044	-035	-058	054	-028	075	021	259	-059
6 Simple Sentences D	306	069	169	-008	306	050	254	152	193	138	164	212	084	222
7 Compound Sentences D	-043	-063	-161	032	031	172	050	027	084	-000	029	002	044	-063
8 Complex Sentences D	264	-009	087	135	247	092	282	035	172	181	044	061	055	-004
9 Compound-Complex D	082	-045	-126	138	074	325	178	-044	240	055	160	078	090	-028
10 Total T units D	328	021	035	118	336	286	386	154	315	169	182	185	113	105
11 Adjective Clauses D	-043	-041	-112	-044	108	-031	-039	-151	072	080	009	-052	144	-082
12 Adverb Clauses D	264	-044	-014	226	255	248	328	040	280	156	121	099	136	-023
13 Noun Clauses D	132	041	-050	-074	176	304	201	-026	419	025	283	198	059	029
14 Total Words E	712	139	152	389	565	609	809	433	717	251	417	232	041	045
15 Total Sentences E		076	690	319	572	298	925	329	494	206	219	195	-067	147
16 Garbles E	076		-008	108	028	125	113	209	046	122	005	055	-056	020
17 Simple Sentences E	690	-008		-037	010	-153	494	071	-122	-030	099	192	-120	221
18 Compound Sentences E	319	108	-037		-010	295	536	210	095	045	043	019	073	-006
19 Complex Sentences E	572	028	010	-010		052	451	284	736	286	054	012	-009	009
20 Compound-Complex E	298	125	-153	295	052		560	215	507	183	344	137	026	-073
21 Total T-units E	925	113	494	536	451	560		366	539	201	294	206	-024	090
22 Adjective Clauses E	329	209	071	210	284	215	366		190	039	225	120	-028	020
23 Adverb Clauses E	494	046	-122	095	736	507	539	190		005	318	166	079	034
24 Noun Clauses E	206	122	-030	045	286	183	201	039	005		-084	-082	-102	-114
25 Total Words N	219	005	099	043	054	344	294	225	318	-084		831	175	496
26 Total Sentences N	195	055	192	019	012	137	206	120	166	-082	831		035	824
27 Garbles N	-067	-057	-120	073	-009	026	-024	-028	079	-102	175	035		072
28 Simple Sentences N	147	020	221	-006	009	-063	089	020	034	-114	496	824	072	
29 Compound Sentences N	-021	046	019	-083	-116	169	051	031	092	-052	552	595	036	258
30 Complex Sentences N	273	068	144	114	154	170	287	167	225	-024	620	524	131	159
31 Compound-Complex N	068	014	-054	071	-021	331	170	208	187	102	516	341	140	048
32 Total T-units N	158	061	142	010	-024	213	210	145	188	-066	858	960	053	684
33 Adjective Clauses N	130	-067	088	074	053	058	131	150	037	-039	148	001	144	-112
34 Adverb Clauses N	192	-004	039	038	166	194	207	148	262	-020	599	352	143	059
35 Noun Clauses N	200	064	054	177	061	260	279	149	226	025	407	337	148	024
36 Sentence Length D	-096	006	-260	089	-016	268	020	-016	163	006	095	-064	086	-209
37 T-unit Length D	-065	031	-220	031	073	162	-007	-060	205	071	156	004	106	-135
38 Sentence Length E	-353	105	-612	015	-036	380	-160	140	233	059	203	017	109	-131
39 T-unit Length E	-391	050	489	-278	088	-021	-377	106	127	047	094	-032	051	-114
40 Sentence Length N	082	-006	-110	100	119	225	143	176	238	-037	068	-390	267	-552
41 T-unit Length N	155	-035	-041	146	158	186	180	168	233	-041	-008	-394	200	-417

Level of Significance for 150 df

.05	.01
159	208

Note: decimals are omitted

TABLE 4 : CORRELATION MATRIX (continued)

Criteria	29	30	31	32	33	34	35	36	37	38	39	40	41
1 Grade	260	317	204	404	117	253	218	024	077	057	052	-011	-046
2 Sex	044	-196	-194	-092	-227	-125	-304	071	004	197	239	-030	-069
3 Total Words D	167	260	068	205	061	145	214	252	213	237	156	091	053
4 Total Sentences D	086	236	020	204	097	066	235	-257	-143	026	040	-065	-053
5 Garbles D	087	109	-028	031	-021	149	139	098	140	046	043	068	064
6 Simple Sentences D	-036	194	057	162	130	082	163	-565	-241	-091	-007	-100	-053
7 Compound Sentences D	184	-000	-097	045	-050	-114	040	247	-232	287	196	011	-027
8 Complex Sentences D	067	146	-039	067	040	032	183	154	286	-066	-073	-004	-020
9 Compound-Complex D	170	064	082	122	-077	103	066	501	191	190	052	103	044
10 Total T-units D	141	193	010	191	043	023	228	-034	-193	138	082	-035	-051
11 Adjective Clauses D	027	036	-092	-040	001	017	044	227	304	019	054	046	047
12 Adverb Clauses D	128	187	039	119	019	119	182	364	291	072	-019	073	025
13 Noun Clauses D	283	190	088	252	-103	122	182	202	177	228	129	-001	-057
14 Total Words E	131	315	268	267	126	304	284	174	148	336	171	291	295
15 Total Sentences E	-031	273	068	158	130	192	200	-096	-065	-353	-391	082	155
16 Garbles E	046	068	014	061	-067	-004	064	006	031	105	049	-006	-035
17 Simple Sentences E	019	144	-054	142	088	039	054	-260	-220	-612	-489	-110	-041
18 Compound Sentences E	-083	114	071	010	074	038	177	089	031	015	-279	100	146
19 Complex Sentences E	-116	154	-021	-024	053	166	061	-016	073	-036	088	119	158
20 Compound-Complex E	169	170	331	213	058	194	260	268	162	380	-031	225	186
21 Total T-units E	051	287	170	210	131	207	279	020	-007	-160	-377	143	180
22 Adjective Clauses E	031	167	208	145	150	148	146	-016	-060	139	106	176	168
23 Adverb Clauses E	092	225	187	188	037	262	226	163	205	233	127	238	233
24 Noun Clauses E	-052	-024	102	-066	-039	-020	025	006	071	059	047	-037	-041
25 Total Words N	552	620	516	858	148	599	407	095	156	203	094	069	-008
26 Total Sentences N	595	524	341	960	001	352	337	-064	004	017	-032	-390	-394
27 Garbles N	036	131	140	053	144	143	148	086	107	109	051	267	200
28 Simple Sentences N	258	159	048	684	-112	059	024	-209	-135	-131	-114	-552	-417
29 Compound Sentences N		143	143	754	-140	033	152	094	031	189	124	-214	-432
30 Complex Sentences N	143		187	458	294	663	522	071	175	-033	-045	056	118
31 Compound-Complex N	143	187		447	139	417	487	102	131	255	084	182	-018
32 Total T-units N	754	458	447		-009	334	370	-006	030	112	024	-311	-415
33 Adjective Clauses N	-140	294	139	-009		064	004	-009	114	-040	-028	271	314
34 Adverb Clauses N	033	663	417	334	064		265	152	255	105	064	276	284
35 Noun Clauses N	152	522	487	370	004	265		-036	-015	044	-047	082	-007
36 Sentence Length D	094	071	102	-006	-009	152	-036		655	405	251	327	267
37 T-unit Length D	031	175	131	030	114	255	-015	655		247	222	344	296
38 Sentence Length E	189	-033	255	112	-040	105	044	405	247		825	223	126
39 T-unit Length E	124	-045	084	024	-028	064	-047	251	222	825		195	125
40 Sentence Length N	-214	056	182	-311	271	276	081	327	344	223	195		873
41 T-unit Length N	-432	118	-018	-415	314	284	-007	267	296	126	125	873	

Level of Significance for 150 df

.05	.01
159	208

Note: decimals are omitted

TABLE 5

CORRELATION MATRIX : PROPORTIONED VARIABLES

Criteria	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Total Words D		116	-699	368	313	581	530	293	549	300	405	010	-319	088	105
2 Garbles D	116		-092	006	088	073	-013	089	193	194	054	037	-116	066	106
3 Simple Sentences D	-699	-092		-649	-568	-451	-673	-365	-600	-272	-174	091	180	-168	-002
4 Compound Sentences D	368	006	-648		-098	071	764	-045	062	-008	230	-065	-066	111	-085
5 Complex Sentences D	313	088	-568	-096		-032	-005	436	566	265	-106	-038	-063	056	061
6 Compound-Complex D	581	073	-451	071	-032		368	266	453	252	202	-051	-222	133	047
7 Total T-unit D	530	-013	-673	763	-005	368		-012	251	068	167	-021	-089	131	-078
8 Adjective Clauses D	293	089	-365	-045	436	266	-012		-020	056	-009	-073	-199	084	174
9 Adverb Clauses D	549	193	-600	062	566	453	251	-020		240	100	-065	-190	093	100
10 Noun Clauses D	300	194	-272	-008	265	252	068	056	240		228	078	-111	-109	045
11 Total Words E	405	054	-174	230	-106	202	167	-009	100	228		207	-532	076	212
12 Garbles E	010	037	091	-065	-038	-051	-021	-073	-065	078	206		-160	-043	089
13 Simple Sentences E	-319	-116	180	-066	-063	-222	-089	-199	-190	-111	-532	-160		-309	-667
14 Compound Sentences E	088	066	-168	111	056	133	133	084	093	-109	076	-043	-309		-256
15 Complex Sentences E	105	106	-002	-085	061	047	-078	174	100	045	212	089	-668	-256	
16 Compound-Complex E	334	-008	-179	155	-028	216	171	013	114	222	557	187	-502	118	-132
17 Total T-unit E	296	018	-260	209	039	220	223	051	145	157	465	091	-507	615	-251
18 Adjective Clauses E	038	-014	-043	054	031	-034	087	-142	039	034	299	252	-167	-010	164
19 Adverb Clauses E	330	118	-088	-028	043	185	-001	153	182	308	482	057	-705	-166	632
20 Noun Clauses E	-013	-059	015	-021	003	-006	-042	035	-054	-034	180	362	-352	-010	273
21 Total Words N	327	073	-125	059	089	066	056	054	132	023	223	-024	-156	-001	084
22 Garbles N	086	260	-038	002	010	071	-024	079	116	076	109	-075	-069	095	-003
23 Simple Sentences N	-208	-069	149	-138	-070	-022	-155	-098	-074	017	-131	-044	150	-030	-108
24 Compound Sentences N	095	115	-156	111	036	135	062	-011	117	258	189	014	041	-107	-081
25 Complex Sentence N	071	116	011	-091	060	027	-099	040	112	174	-033	-025	014	-021	-026
26 Compound-Complex N	102	-021	048	-098	-030	088	-039	-099	080	130	255	-026	-124	019	-060
27 Total T-unit N	-006	044	004	-060	-004	094	-078	-072	078	238	112	-025	062	-067	-127
28 Adjective Clauses N	-010	-036	055	-084	059	-086	-130	-017	030	-036	-041	-110	039	-017	-026
29 Adverb Clauses N	151	154	045	-135	012	092	-111	040	113	128	105	-064	-082	-050	028
30 Noun Clauses N	-036	160	-015	-053	081	-002	-029	-024	098	154	044	008	-059	076	-042

Level of Significance .05 .01

df = 150 159 209

Note: Decimals are omitted

TABLE 5

CORRELATION MATRIX : PROPORTIONED VARIABLES (continued)

Criteria	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1 Total Words D	334	296	038	329	-013	327	087	-208	095	071	102	-006	-010	151	-036
2 Garbles D	-008	018	-014	118	-059	073	260	-069	115	116	-021	044	-036	154	160
3 Simple Sentences D	-179	-260	-043	-088	015	-125	-038	149	-156	011	048	004	055	045	-015
4 Compound Sentences D	155	209	054	-028	-021	059	002	-138	111	-091	-098	-060	-084	-135	-053
5 Complex Sentences D	-028	039	031	043	003	089	010	-070	036	060	-030	-004	059	012	081
6 Compound-Complex D	216	220	-034	185	-006	066	071	-022	135	027	088	094	-086	092	-002
7 Total T-unit D	171	223	087	-002	-042	056	-024	-155	062	-099	-039	-078	-130	-111	-029
8 Adjective Clauses D	013	051	-142	153	035	054	079	-098	-011	040	-099	-072	-017	040	-024
9 Adverb Clauses D	114	145	039	182	-054	132	116	-074	117	112	080	078	030	113	098
10 Noun Clauses D	222	156	034	308	-034	023	076	017	258	174	130	238	-036	128	154
11 Total Words E	557	465	299	482	180	223	109	-131	189	-033	255	112	-041	105	044
12 Garbles E	187	091	252	057	362	-024	-075	-044	014	-025	-026	-025	-110	-064	008
13 Simple Sentences E	-502	-507	-167	-705	-332	-156	-069	150	041	014	-124	062	039	-082	-060
14 Compound Sentences E	118	615	-010	-166	-010	-001	095	-030	-107	-021	019	-067	-017	-050	076
15 Complex Sentences E	-132	-251	164	632	273	084	-003	-108	-081	-026	-060	-127	-026	028	-042
16 Compound-Complex E		-783	058	429	171	141	050	-073	144	034	297	145	-013	136	106
17 Total T-unit E	783		055	214	076	097	103	-081	138	027	262	135	-018	067	158
18 Adjective Clauses E	058	055		-031	106	054	-089	003	030	065	133	085	066	060	058
19 Adverb Clauses E	429	214	-031		-058	189	108	-061	136	049	181	111	-020	143	106
20 Noun Clauses E	171	076	106	-058		-060	-112	-135	-067	-131	060	-128	-140	-071	-036
21 Total Words N	141	097	054	189	-060		267	-552	-213	057	182	-311	271	276	081
22 Garbles N	050	103	-089	108	-112	267		-072	036	132	140	053	145	145	148
23 Simple Sentences N	-073	-081	003	-062	-135	-552	-072		259	159	048	684	-112	059	025
24 Compound Sentences N	144	138	030	136	-067	-213	036	256		143	143	754	-140	032	152
25 Complex Sentences N	034	027	065	049	-131	057	132	159	143		187	458	294	663	522
26 Compound-Complex N	297	262	133	181	060	182	140	048	143	187		447	138	417	487
27 Total T-unit N	145	135	085	111	-128	-311	053	684	754	458	447		-009	334	370
28 Adjective Clauses N	-013	-018	066	-020	-140	271	145	-112	-140	294	138	-009		064	004
29 Adverb Clauses N	136	067	060	143	-071	276	145	059	032	663	417	334	064		265
30 Noun Clauses N	106	158	058	106	-036	081	148	025	152	522	487	370	004	265	

Level of Significance .05 .01 Note: Decimals are omitted
df = 150 159 209

TABLE 6

MEANS AND STANDARD DEVIATIONS OF THE CRITERION VARIABLES

Criterion	R Mean	R S.D.	P* Mean	P* S.D.
Total Words D	97.53	40.64	9.71	2.30
Total Words E	142.47	61.87	13.45	4.27
Total Words N	127.39	65.44	12.02	4.02
Total Sentences D	10.30	4.30		
Total Sentences E	11.13	4.84		
Total Sentences N	11.39	6.10		
Sentence Length D			9.71	2.30
Sentence Length E			13.45	4.27
Sentence Length N			12.02	4.02
Total T-units D	12.26	5.05	1.21	.27
Total T-units E	13.49	6.22	1.22	.21
Total T-units N	14.55	8.33	.56	.32
T-unit Length D			8.08	1.55
T-unit Length E			11.12	3.25
T-unit Length N			9.55	3.38
Simple Sentences D	6.73	3.75	.64	.22
Simple Sentences E	4.89	3.58	.43	.24
Simple Sentences N	5.71	4.10	.22	.16
Compound Sentences D	1.31	1.39	.14	.15
Compound Sentences E	1.01	1.27	.09	.11
Compound Sentences N	2.01	2.11	.08	.08
Complex Sentences D	1.77	1.59	.17	.14
Complex Sentences E	4.02	2.66	.37	.21
Complex Sentences N	2.73	2.01	.10	.08
Compound-Complex D	.49	.84	.05	.09
Compound-Complex E	1.20	1.48	.11	.14
Compound-Complex N	.94	1.21	.04	.05
Adjective Clauses D	.70	.89	.08	.11
Adjective Clauses E	.45	.83	.04	.07
Adjective Clauses N	.65	.91	.03	.04
Adverb Clauses D	1.55	1.71	.15	.15
Adverb Clauses E	5.05	3.68	.46	.31
Adverb Clauses N	2.25	2.30	.09	.09
Noun Clauses D	.33	.69	.03	.06
Noun Clauses E	.98	1.53	.09	.14
Noun Clauses N	1.70	1.96	.07	.08

*Proportioned Data was obtained by dividing all other appropriate criteria scores by the Total Sentences score.

ANALYSIS OF VARIANCE

The use of the proportionalized data criteria provided the more stringent condition in obtaining significant differences when conducting the analyses of variance tests. Therefore, the proportioned data were reported in depth in Chapter III. However, the important raw data criterion, Total Sentences (R), which served as the divisor for the proportionalization of other criteria, also was reported with accompanying descriptions and charts.

In reporting these results a pattern was followed; the format was:

1. Statements concerning the results.
2. Table of analysis of variance and the results of the comparison of the means of the main effects.
3. Table of means for the criterion variable.
4. Graphic representation of significant interaction (where applicable).

All other raw data criteria were reported through the inclusion of their analyses of variance tables with significant order of magnitude of means and significant gap.

The written language forms, descriptive, expository, and narrative, were referred to so frequently that it was convenient to use their symbols D, E, and N.

Average Sentence Length and Total Words (P)*

The analysis of variance (Table 7) showed a significant difference for the main effect, Form, at the .01 level. Its order of magnitude was D, N, E with each form being significantly different.

The means chart (Table 8) disclosed that boys wrote slightly longer sentences than girls at each grade level, but that there was not a significant difference.

There were no significant interactions; however, Figure 1 graphically showed the interaction of Grade X Form. This non-significant interaction was included for the benefit of the reader. The graph showed that the order of magnitude of D, N, E was consistent at each grade level. The descriptive form of writing showed little change between the grade levels. The expository and narrative forms showed non-parallelity and their scores were more different at the fifth grade level than at the fourth or sixth grade levels.

*Average Sentence Length and Total Words (P) are one and the same.

TABLE 7

ANALYSIS OF VARIANCE OF AVERAGE SENTENCE LENGTH

and TOTAL WORDS (P)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	3.22	1.61		
Sex	1	38.68	38.68	2.95	N.S.
Form	2	1,067.47	533.73	40.74	.01
Grade X Sex	2	14.52	7.26		
Grade X Form	4	79.85	19.96	1.52	N.S.
Sex X Form	2	72.70	36.35	2.77	N.S.
Grade X Sex X Form	4	32.09	8.02		
Within Cells	432	5,659.81	13.10		
Total	449	6,968.33			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .821

Order of Magnitude

	D	N	E
Form	9.71	12.02	13.45

TABLE 8

MEANS FOR AVERAGE SENTENCE LENGTH AND TOTAL WORDS (P)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	9.84	9.58	9.71	11.50	14.05	12.78	12.51	12.26	12.38	11.28	11.94	11.62
5	9.38	9.80	9.59	14.09	14.34	14.22	11.57	11.23	11.40	11.68	11.79	11.74
6	9.44	10.25	9.84	12.25	14.49	13.37	12.35	12.21	12.28	11.34	12.32	11.83
Group	9.55	9.88	9.71	12.61	14.29	13.45	12.12	11.90	12.02	11.44	12.02	11.73

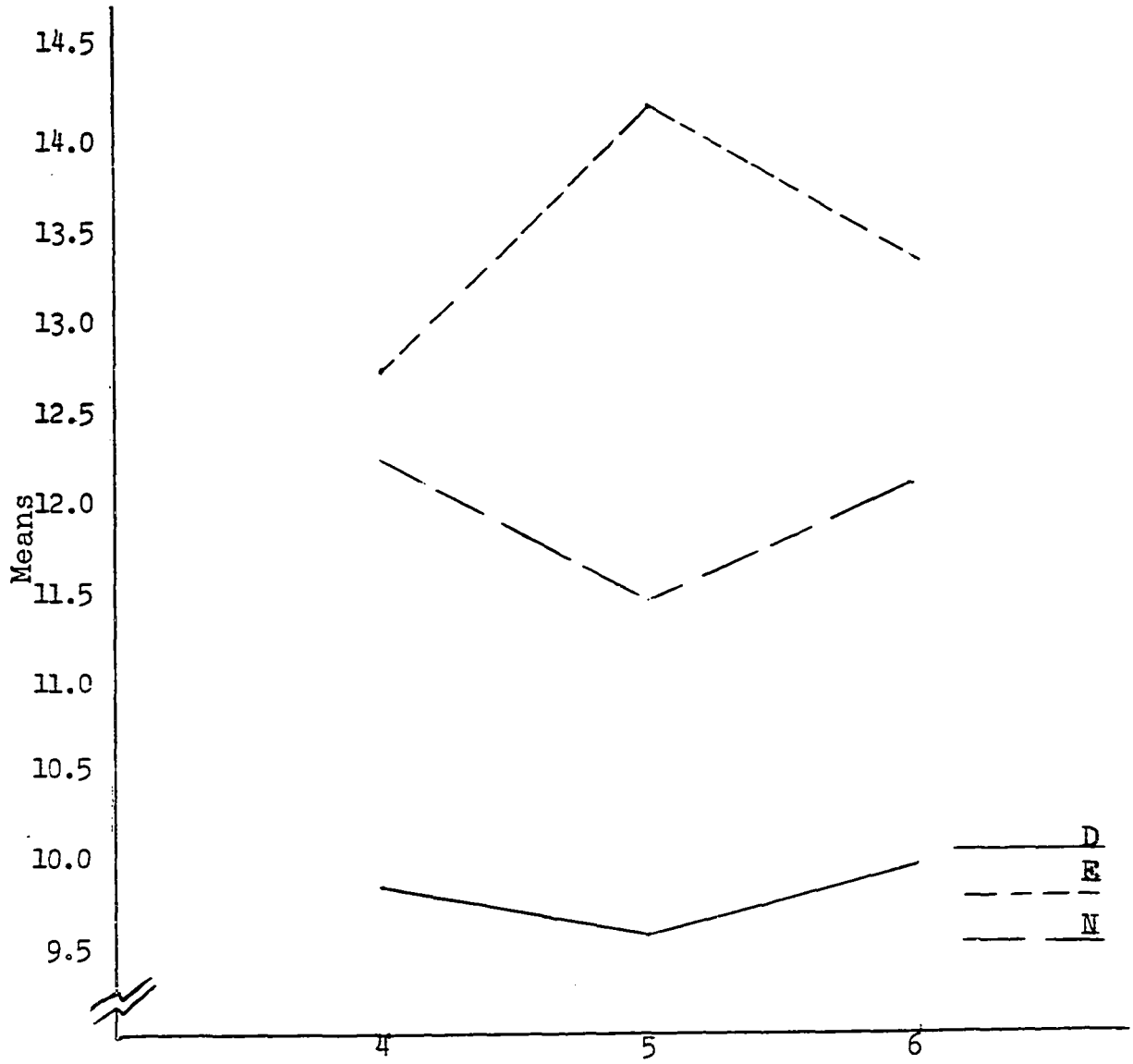


FIGURE 1 NON-SIGNIFICANT INTERACTION OF GRADE X FORM
CRITERION VARIABLE: AVERAGE SENTENCE LENGTH AND TOTAL WORDS (P)

Total T-units (P)

The analysis (Table 9) indicated two significant main effects: Grade was significant at the .05 level and Form at the .01 level.

In comparing the individual means for Grade there was a significant difference between fourth and fifth and between fourth and sixth, but not between the fifth and sixth grades. The order of magnitude was fourth, fifth, sixth.

For Form the order of magnitude was N, D, E with significance between N and D, and N and E, but not between D and E.

Examination of the means chart (Table 10) showed that the boys wrote slightly more than the girls at grade four but this was reversed in grades five and six.

The significant interaction for Grade X Form was beyond the .01 level. Figure 2 showed that there were considerably less T-units produced in form N than for the other forms of writing. However, the quantity increased at each grade level for form N. Forms D and E had similar volumes at each grade level and showed parallelity from fifth to sixth grade. At the fourth grade level the D form mean had a slightly greater quantity. By the fifth grade its quantity was less than for form E and the occurrence caused an intersection of their plotted lines on the graph.

TABLE 9

ANALYSIS OF VARIANCE OF TOTAL T-UNITS (P)

Source	df	Sum of Squares	Mean Squares	F	Signifi-cance
Grade	2	.6396	.3197	4.660	.05
Sex	1	.0145	.0145		
Form	2	42.9388	21.4694	312.965	.01
Grade X Sex	2	.0241	.0120		
Grade X Form	4	2.0171	.5043	7.351	.01
Sex X Form	2	.1926	.0963	1.404	N.S.
Grade X Sex X Form	4	.2157	.0539		
Within Cells	432	29.6305	.0686		
Total	449	75.6727			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .058

	Order of Magnitude		
	4	5	6
Grade	.945	1.012	1.033

	N	D	E
Form	.560	1.215	1.215

TABLE 10

MEANS FOR TOTAL T-UNITS (P)

	Descriptive			Expository			Narrative			All Forms		
Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	1.25	1.23	1.24	1.16	1.23	1.20	.42	.38	.40	.94	.95	.95
5	1.20	1.24	1.22	1.28	1.22	1.25	.61	.53	.57	1.03	1.00	1.01
6	1.14	1.24	1.19	1.23	1.17	1.20	.74	.68	.71	1.04	1.03	1.03
Group	1.20	1.24	1.22	1.22	1.21	1.22	.59	.53	.56	1.00	.99	1.00

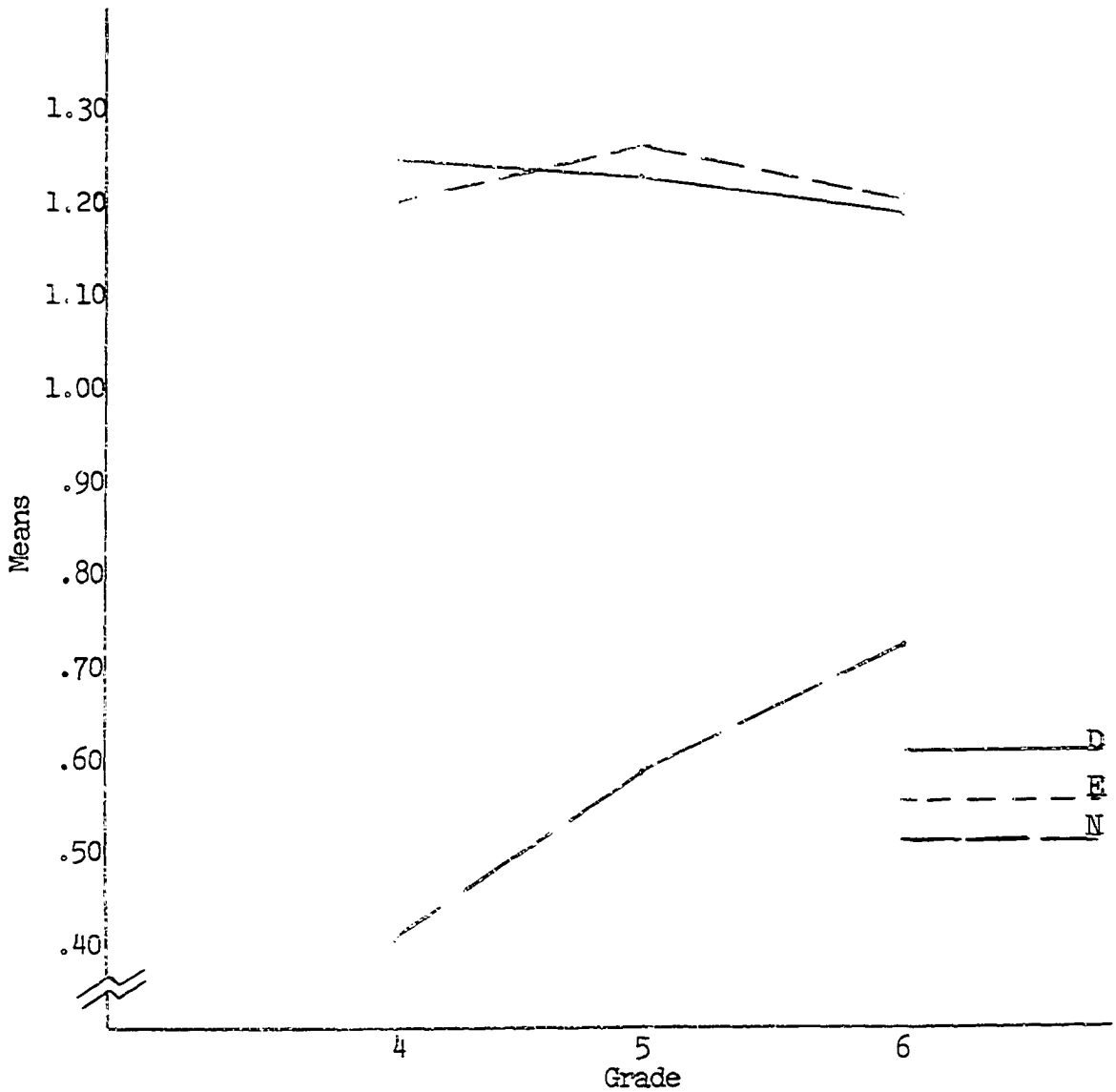


FIGURE 2 SIGNIFICANT INTERACTION OF GRADE X FORM
CRITERION VARIABLE: TOTAL T-UNITS

Average T-unit Length

The analysis (Table 11) showed the main effect, Form, to be significant beyond the .01 level. Its order of magnitude was D, N, E and the Tukey Test revealed that each component was significantly different from the others.

The first order interaction of Sex X Form was also significant at the .01 level. Figure 3 showed some parallelity between the boys and girls in regard to form. The lowest means for both sexes occurred for form D and the difference was minute. The boys' mean increased sharply for form E while the girls' mean increased moderately. Both sexes' means decreased for form N. The boys' declined so radically that it fell below the level of the girls and caused an intersection in the graph.

The means chart (Table 12) revealed that boys wrote slightly longer T-units at all grade levels, but that there were no significant differences.

Simple Sentences (P)

The analysis of simple sentences (Table 13) revealed that the main effect, Form, was significant beyond the .01 level. The comparison of the individual means exhibited that each component was significantly different from the others. The order of magnitude was N, E, D.

There were no significant interactions. The means chart (Table 14) showed that there was similarity in the patterns produced by girls and boys in regard to both form and grade.

TABLE 11

ANALYSIS OF VARIANCE OF AVERAGE T-UNIT LENGTH

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	5.92	2.96		
Sex	1	14.99	14.99	1.86	N.S.
Form	2	694.17	347.09	43.22	.01
Grade X Sex	2	6.06	3.03		
Grade X Form	4	44.84	11.21	1.39	N.S.
Sex X Form	2	82.94	41.47	5.16	.01
Grade X Sex X Form	4	23.33	5.83		
Within Cells	432	3,467.23	8.03		
Total	449	4,339.50			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .643

	Order of Magnitude		
	D	N	E
Form	8.08	9.55	11.12

TABLE 12

MEANS FOR AVERAGE T-UNIT LENGTH

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	8.05	7.98	8.02	9.98	11.51	10.75	10.67	9.44	10.06	9.57	9.64	9.60
5	7.86	7.96	7.91	11.08	11.86	11.47	8.79	9.05	8.92	9.24	9.62	9.43
6	8.31	8.31	8.31	9.98	12.32	11.15	9.89	9.46	9.68	9.39	10.03	9.71
Group	8.07	8.08	8.08	10.35	11.90	11.12	9.78	9.32	9.55	9.40	9.77	9.58

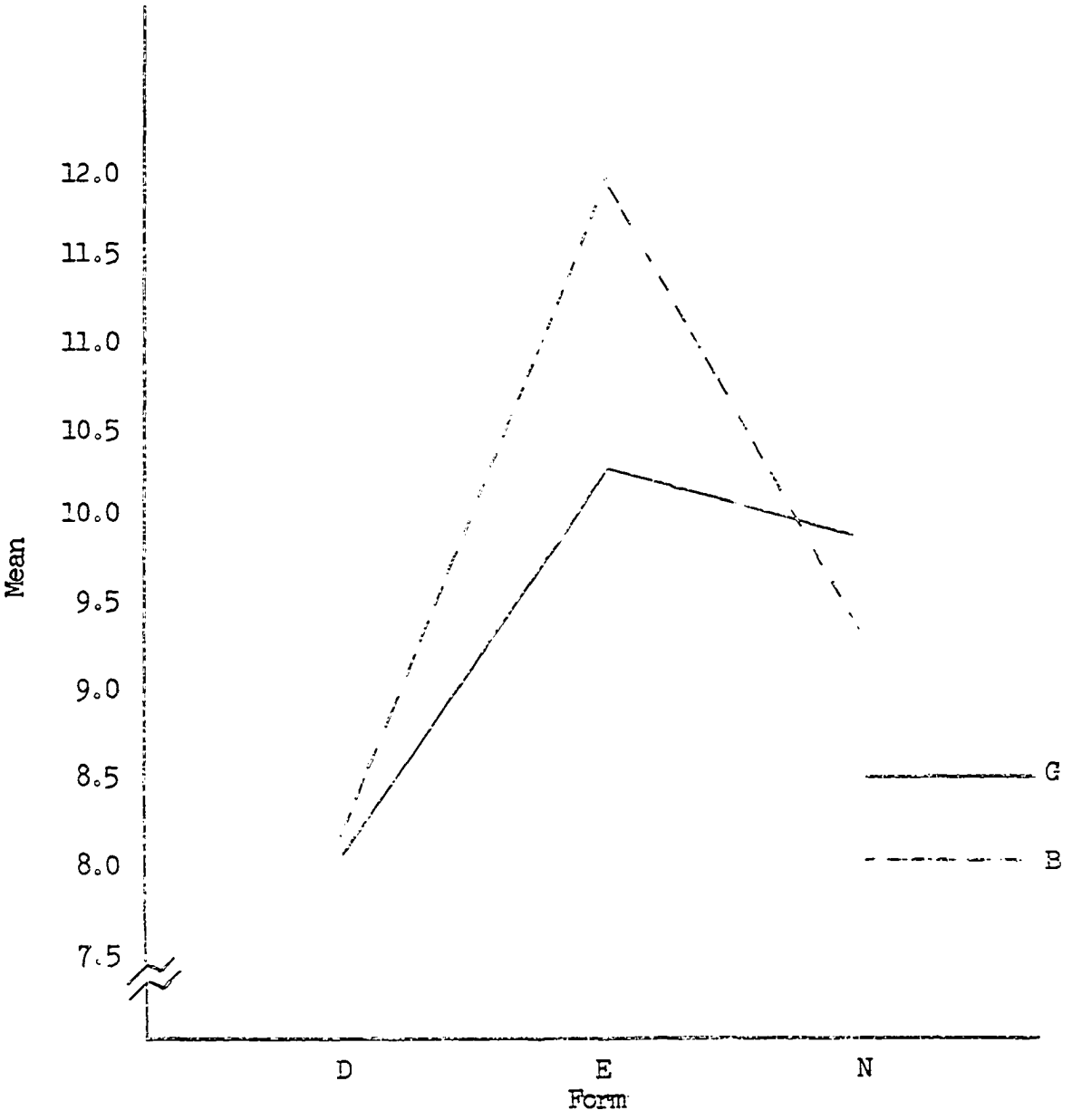


FIGURE 3 SIGNIFICANT INTERACTION OF SEX X FORM
CRITERION VARIABLE: T-UNIT LENGTH

TABLE 13

ANALYSIS OF VARIANCE OF SIMPLE SENTENCES (P)

Source	df	Sum of Squares	Mean Squares	F	Significance
Grade	2	.0499	.0249		
Sex	1	.0091	.0091		
Form	2	13.1736	6.5868	148.018	.01
Grade X Sex	2	.03405	.0170		
Grade X Form	4	.2489	.0622	1.398	NS
Sex X Form	2	.0131	.0065		
Grade X Sex X Form	4	.1390	.0347		
Within Cells	432	19.2138	.0445		
Total	449	32.8814			

Tukey's Procedures for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .048

Order of Magnitude

	N	E	D
Form	.219	.431	.639

TABLE 14

MEANS FOR SIMPLE SENTENCE (P)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	.65	.66	.65	.46	.41	.43	.17	.16	.17	.43	.41	.42
5	.64	.64	.64	.41	.42	.42	.22	.25	.23	.42	.44	.43
6	.67	.58	.63	.42	.47	.44	.28	.25	.26	.46	.43	.44
Group	.65	.63	.64	.43	.43	.43	.22	.22	.22	.43	.43	.43

Compound Sentences (P)

The analysis (Table 15) revealed that the main effect, Form, was significant beyond the .01 level. Its order of magnitude was N, E, D. The Tukey Test showed a significant difference between N and D, but not between N and E or E and D.

The interaction of Sex X Form was significant at the .05 level. Figure 4 graphically depicted the interaction. Boys wrote considerably more compound sentences than girls did for form D. The quantity decreased drastically for boys when using the E form while the girls' level decreased slightly. This created an intersection on the graph between forms D and E. A second intersection occurred between forms E and N when the boys' means remained the same but the girls' decreased.

Complex Sentences (P)

The analysis (Table 17) showed a significant main effect for Form which was beyond the .01 level. The order of magnitude for form was N, D, E, and Tukey's Test revealed that each form was significantly different from the others.

There were no significant interactions. Examination of the means chart (Table 18) revealed that boys and girls wrote similar quantities for the E form at all grade levels, and that the quantity written for form E was overwhelmingly greater than for forms D and N.

TABLE 15

ANALYSIS OF VARIANCE OF COMPOUND SENTENCES (P)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	.0246	.0123		
Sex	1	.0226	.0226	1.650	N.S.
Form	2	.2985	.1492	10.891	.01
Grade X Sex	2	.0216	.0108		
Grade X Form	4	.0615	.0154	1.124	N.S.
Sex X Form	2	.0968	.0484	3.533	.05
Grade X Sex X Form	4	.0904	.0226	1.650	N.S.
Within Cells	432	5.9200	.0137		
Total	449	6.5360			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .026

	Order of Magnitude		
	N	E	D
Form	.077	.091	.137

TABLE 16

MEANS FOR COMPOUND SENTENCES (P)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	.13	.15	.14	.07	.09	.08	.05	.05	.05	.08	.10	.09
5	.13	.15	.14	.12	.09	.11	.08	.08	.08	.11	.10	.11
6	.08	.19	.13	.11	.06	.08	.09	.12	.11	.09	.12	.11
Group	.11	.16	.14	.10	.08	.09	.07	.08	.08	.09	.11	.10

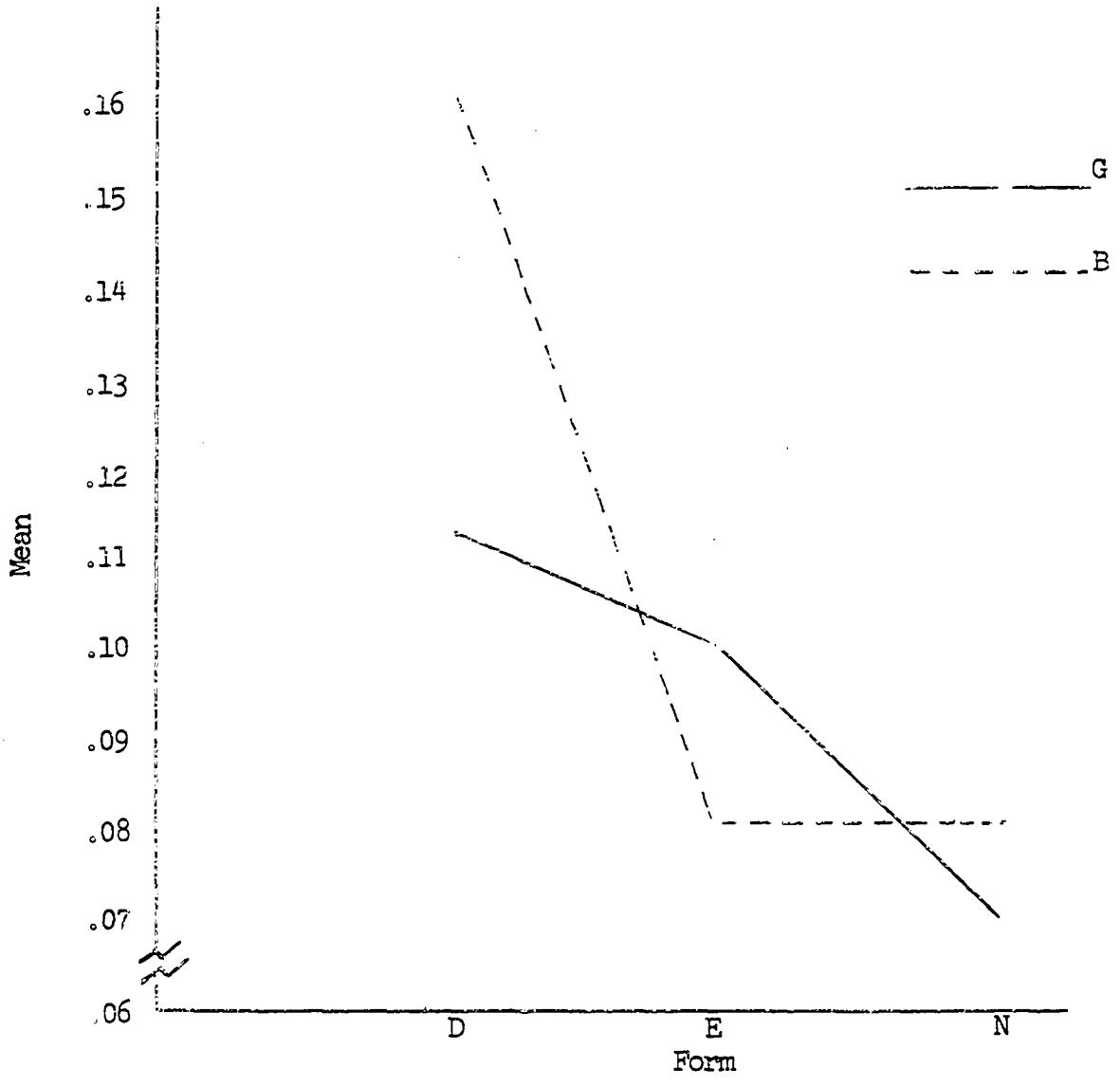


FIGURE 4 SIGNIFICANT INTERACTION OF SEX X FORM
CRITERION VARIABLE: COMPOUND SENTENCES (P)

TABLE 17

ANALYSIS OF VARIANCE OF COMPLEX SENTENCE (P)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	.0479	.0240	1.021	N.S.
Sex	1	.0498	.0498	2.081	N.S.
Form	2	5.5442	2.7721	117.962	.01
Grade X Sex	2	.0003	.0001		
Grade X Form	4	.0770	.0192		
Sex X Form	2	.0359	.0179		
Grade X Sex X Form	4	.0053	.0013		
Within Cells	432	10.1419	.0235		
Total	449	15.9024			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .035

	Order of Magnitude		
	N	D	E
Form	.105	.172	.366

TABLE 18

MEANS FOR COMPLEX SENTENCES (P)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	.18	.14	.16	.38	.38	.38	.09	.06	.07	.21	.19	.21
5	.19	.15	.17	.35	.37	.36	.11	.09	.10	.22	.20	.21
6	.20	.17	.18	.36	.36	.36	.16	.12	.14	.24	.22	.23
Group	.19	.15	.17	.36	.37	.37	.12	.09	.10	.22	.20	.21

Compound-Complex Sentences (P)

The analysis (Table 19) showed that the main effect, Form, was significant at the .01 level. The order of magnitude was N, D, E, and the comparison of individual means revealed significance between forms N and E, and D and E, but not between N and D.

There were no significant interactions. However, an inspection of the means chart (Table 20) showed that boys and girls wrote far more compound-complex sentences for the E form at each grade level.

Subordinate Adjective Clauses (P)

The analysis (Table 21) displayed a significant difference for the main effect, Form, at the .01 level. The order of magnitude was N, E, D, and each form was significantly different from the others.

There were no significant interactions. Examination of the means chart (Table 22) showed that both boys and girls wrote considerably more adjective clauses for the D form at all grade levels.

TABLE 19

ANALYSIS OF VARIANCE OF COMPOUND-COMPLEX SENTENCES (P)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	.0161	.0081		
Sex	1	.0002	.0002		
Form	2	.4783	.2392	23.920	.01
Grade X Sex	2	.0038	.0019		
Grade X Form	4	.0126	.0032		
Sex X Form	2	.0219	.0109	1.090	N.S.
Grade X Sex X Form	4	.0196	.0049		
Within Cells	432	4.3181	.0100		
Total	449	4.8706			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .023

	Order of Magnitude		
	N	D	E
Form	.036	.052	.112

TABLE 20

MEANS FOR COMPOUND-COMPLEX SENTENCES (P)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	.05	.04	.05	.09	.13	.11	.02	.02	.02	.05	.06	.06
5	.04	.06	.05	.12	.13	.12	.05	.02	.04	.07	.07	.07
6	.05	.06	.05	.11	.10	.11	.06	.04	.05	.07	.07	.07
Group	.05	.05	.05	.11	.12	.11	.04	.03	.04	.07	.07	.07

TABLE 21

ANALYSIS OF VARIANCE OF SUBORDINATE ADJECTIVE CLAUSES (P)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	.0073	.0037		
Sex	1	.0019	.0019		
Form	2	.2337	.1168	17.969	.01
Grade X Sex	2	.0014	.0009		
Grade X Form	4	.0062	.0016		
Sex X Form	2	.0127	.0063		
Grade X Sex X Form	4	.0047	.0012		
Within Cells	432	2.8122	.0065		
Total	449	3.0799			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .018

	Order of Magnitude		
	N	E	D
Form	.025	.039	.079

TABLE 22

MEANS FOR ADJECTIVE CLAUSES (P)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	.08	.08	.08	.04	.02	.03	.02	.01	.02	.05	.04	.04
5	.07	.08	.08	.04	.05	.05	.03	.02	.02	.05	.05	.05
6	.08	.10	.09	.04	.03	.04	.04	.02	.03	.05	.05	.05
Group	.08	.09	.08	.04	.03	.04	.03	.02	.02	.05	.05	.05

Subordinate Adverb Clauses (P)

The analysis (Table 23) revealed significance for two main effects: Grade at the .05 level and Form beyond the .01 level.

The order of magnitude for Grade was 4, 5, 6, and the Tukey Test showed significant differences between grades 4 and 6, and 5 and 6, but not between 4 and 5.

The order of magnitude for form was N, D, E, and each form was significantly different from the other.

There were no significant interactions. However, Figure 5 graphically presented the non-significant interaction of Sex X Form for the benefit of the reader. It was noted from the graph that both the direction and magnitude are similar and that parallelity exists.

In viewing the means chart (Table 24) it was obvious that both boys and girls wrote far more adverb clauses at each grade level for form E.

Subordinate Noun Clauses (P)

The analysis (Table 25) exhibited a significant difference for the main effect, Form, at the .01 level. The order of magnitude was D, N, E, and the Tukey Test revealed that each form was significantly different from the others.

The Sex X Form interaction was significant at the .01 level. Figure 6 showed the interaction graphically. Both sexes wrote the same number of noun clauses for the D form. They both increased the quantity for form E but the boys'

TABLE 23

ANALYSIS OF VARIANCE OF SUBORDINATE ADVERB CLAUSES (P)

Source	df	Sum of Square	Mean Square	F	Signifi-cance
Grade	2	.2986	.1493	3.530	.05
Sex	1	.0181	.0181		
Form	2	12.1749	6.0874	143.910	.01
Grade X Sex	2	.0056	.0028		
Grade X Form	4	.0098	.0024		
Sex X Form	2	.0648	.0324		
Grade X Sex X Form	4	.0025	.0006		
Within Cells	432	18.2839	.0423		
Total	449	30.8582			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .047

	Order of Magnitude		
	4	5	6
Grade	.2099	.2205	.2690

	N	D	E
Form	.086	.150	.463

TABLE 24

MEANS FOR ADVERB CLAUSES (P)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	.14	.12	.13	.42	.44	.43	.07	.06	.06	.21	.21	.21
5	.15	.11	.13	.44	.47	.46	.08	.06	.07	.23	.21	.22
6	.21	.16	.19	.49	.50	.49	.14	.11	.13	.28	.26	.27
Group	.17	.13	.15	.45	.47	.46	.10	.08	.09	.24	.23	.23

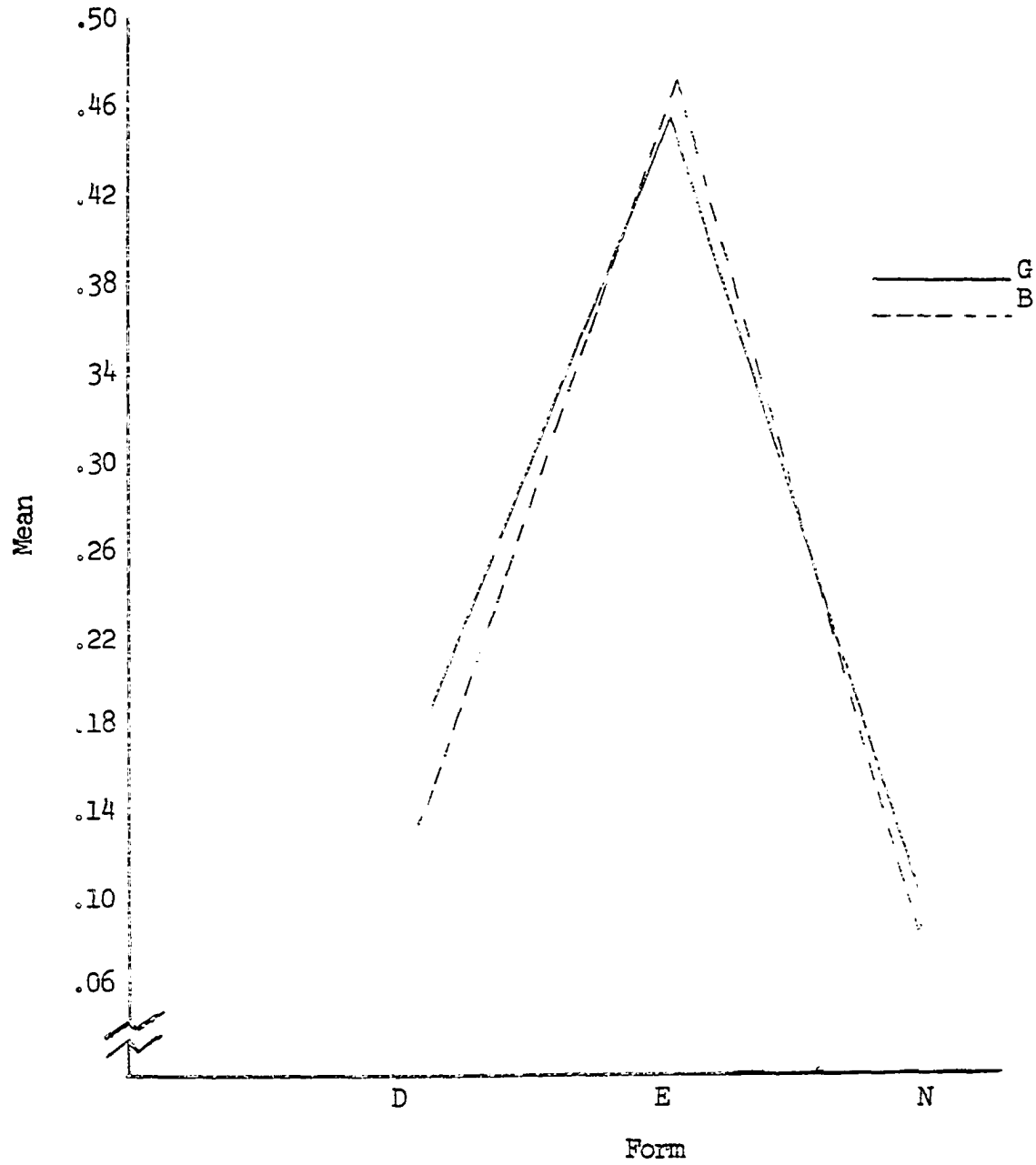


FIGURE 5 NON-SIGNIFICANT INTERACTION OF SEX X FORM
CRITERION VARIABLE: SUBORDINATE ADVERB CLAUSES (P)

TABLE 25

ANALYSIS OF VARIANCE OF SUBORDINATE NOUN CLAUSES (P)

Source	df	Sum of Squares	Mean Square	F	Signifi-cance
Grade	2	.0361	.0180	1.935	N.S.
Sex	1	.0054	.0054		
Form	2	.3074	.1537	16.527	.01
Grade X Sex	2	.0011	.0006		
Grade X Form	4	.0639	.0160	1.720	N.S.
Sex X Form	2	.0924	.0462	4.968	.01
Grade X Sex X Form	4	.0034	.0009		
Within Cells	432	4.0141	.0093		
Total	449	4.5237			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .022

	Order of Magnitude		
	D	N	E
Form	.029	.065	.093

TABLE 26

MEANS FOR NOUN CLAUSES (P)

	Descriptive			Expository			Narrative			All Forms		
Grade	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	.02	.02	.02	.08	.11	.09	.06	.02	.04	.05	.05	.05
5	.03	.03	.03	.10	.12	.11	.10	.04	.07	.08	.07	.07
6	.04	.04	.04	.06	.08	.07	.10	.06	.08	.07	.06	.06
Group	.03	.03	.03	.08	.10	.09	.09	.04	.07	.07	.06	.06

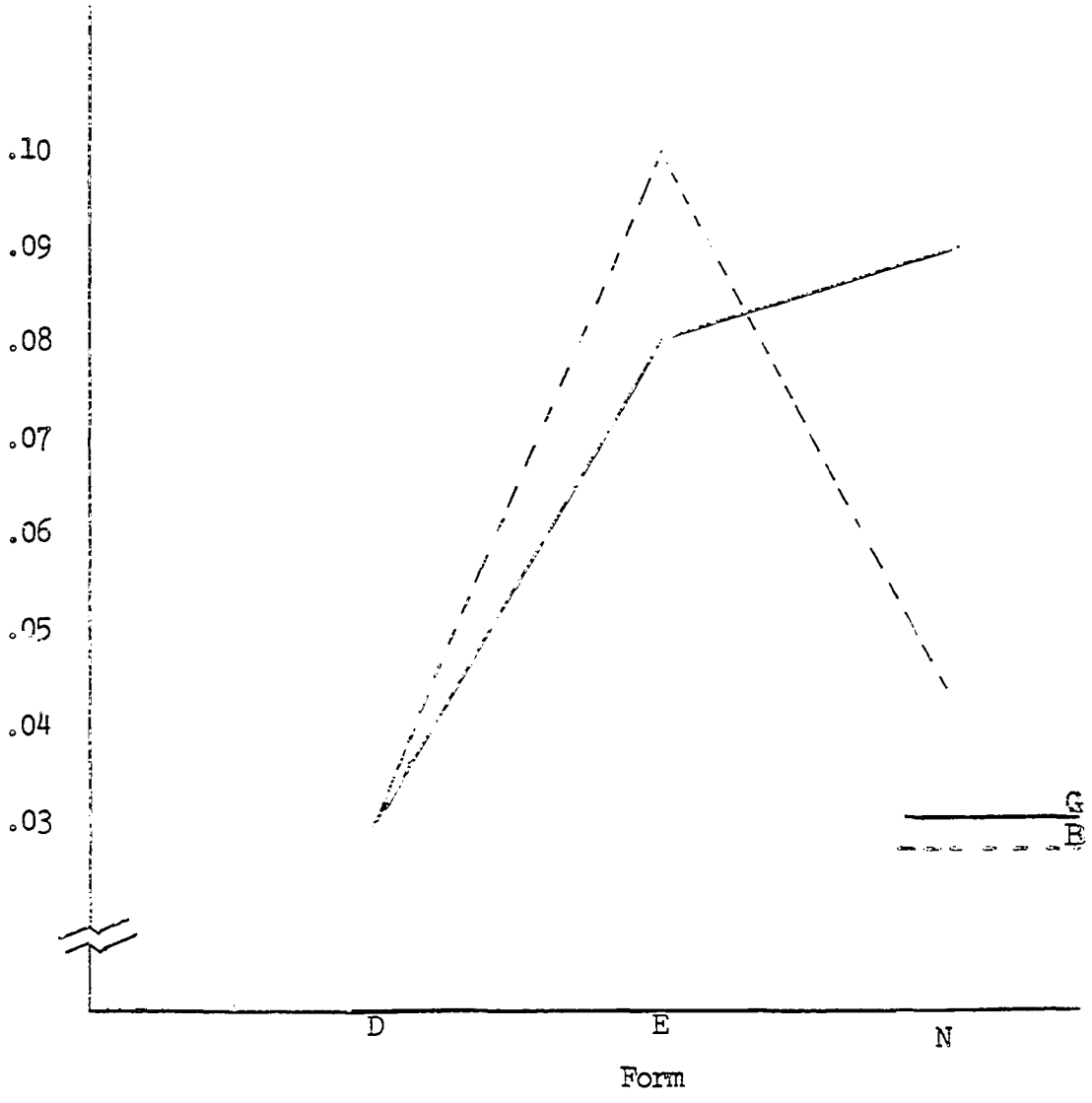


FIGURE 6 SIGNIFICANT INTERACTION OF SEX X FORM
CRITERION VARIABLE: SUBORDINATE NOUN CLAUSES (P)

writing exceeded the girls'. For form N the girls increased their volume but the boys' output declined sharply. This resulted in an intersection of plotted lines between forms E and N. The written form for boys and girls was most different for the narrative form.

Total Sentences

The analysis of total sentences (Table 27) showed that significance was beyond .01 for grade and sex.

A test for the comparison of individual means for the grade level indicated that significance was found between each level, and that the order of magnitude was grades four, five, six. The order of magnitude for sex was male, female.

The interaction of Grade X Form was significant at the .01 level and the interaction of Sex X Form was significant at the .05 level. The interactions were depicted in Figure 7.

Inspection of the Grade X Form graph revealed that the pupils wrote the most similarly at grade 5 and most differently at grade 6.

The narrative (N) form appeared to be the most affected by the grade level; the number of sentences written by children increased markedly for each higher grade level when using the N form of written language.

At the fourth grade level the children's quantity of writing was least for form N, but its vital increase caused it to surpass both of the other forms by grade five. This resulted in two line intersections on the graph between

TABLE 27

ANALYSIS OF VARIANCE OF TOTAL SENTENCES (R)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	573.47	286.74	12.49	.01
Sex	1	578.00	578.00	24.98	.01
Form	2	96.59	48.30	2.09	N.S.
Grade X Sex	2	14.44	7.22		
Grade X Form	4	452.68	113.17	4.99	.01
Sex X Form	2	140.92	70.46	3.04	.05
Grade X Sex X Form	4	25.84	6.46		
Within Cells	432	9,996.32	32.14		
Total	449	11,878.26			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = 1.09

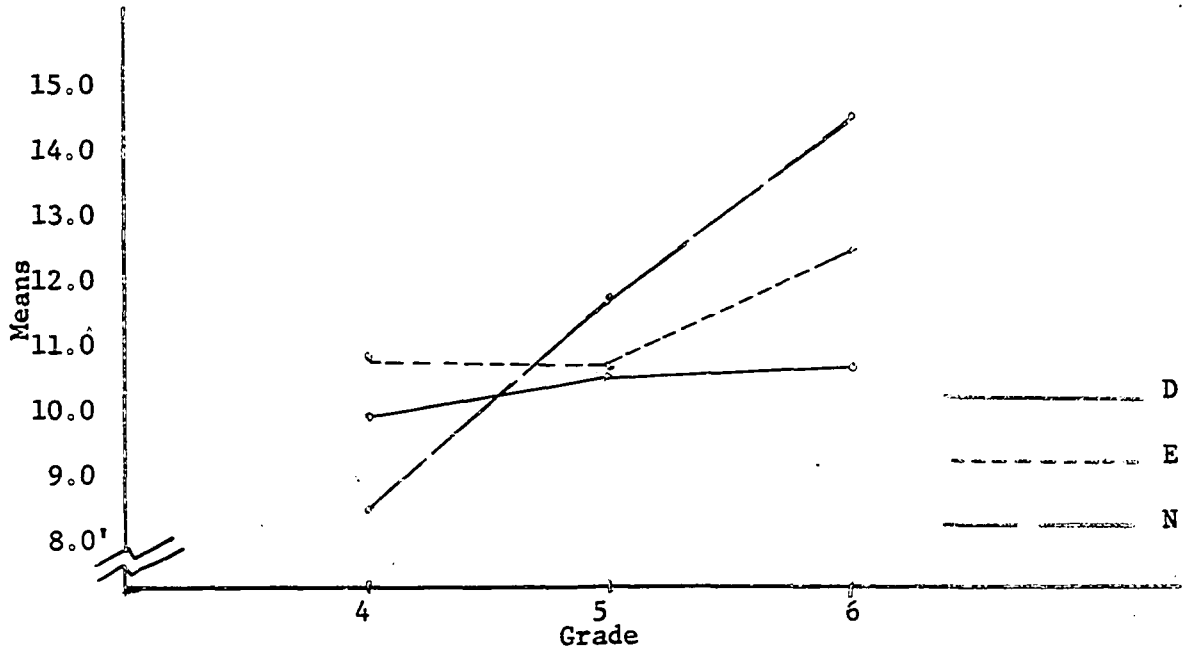
	Order of Magnitude		
	4	5	6
Grade	9.61	10.84	12.37

	M	F
Sex	9.80	12.07

TABLE 28

MEANS FOR TOTAL SENTENCES (R)

Grade	Descriptive			Expository			Narrative			All Forms		
	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group	Girls	Boys	Group
4	11.52	8.40	9.96	12.68	8.53	10.60	8.76	7.76	8.26	10.99	8.23	9.61
5	11.32	9.56	10.44	12.08	8.84	10.46	12.00	11.24	11.62	11.80	9.85	10.84
6	10.96	10.04	10.50	14.28	10.36	12.32	15.04	13.52	14.28	13.43	11.31	12.37
Group	11.27	9.33	10.30	13.01	9.24	11.13	11.93	10.84	11.39	12.07	9.80	10.94



SIGNIFICANT INTERACTION OF GRADE X FORM

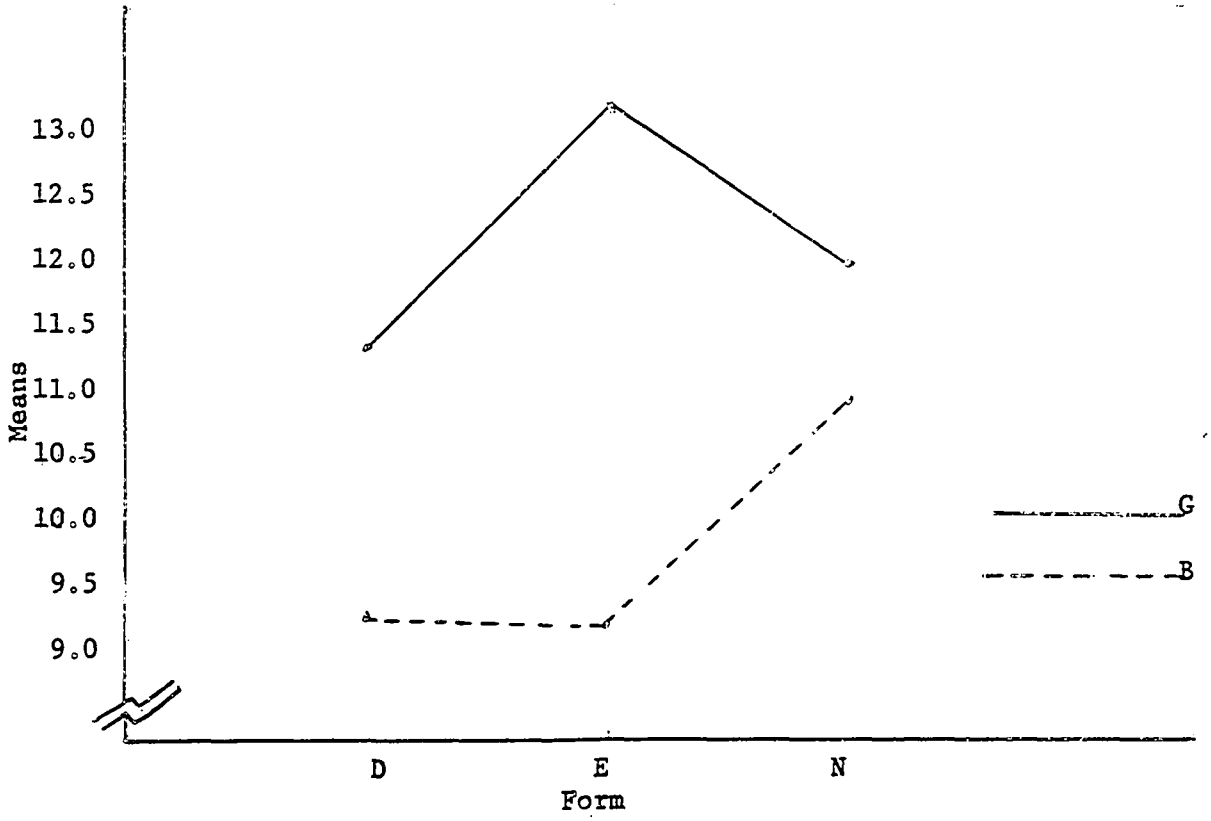


Figure 7 SIGNIFICANT INTERACTION OF SEX X FORM
CRITERION VARIABLE: TOTAL SENTENCES (R)

grades 4 and 5. By the sixth grade the children wrote substantially more sentences for the N form than they did for the E form which was also increasing, and the scores for the N form were farther ahead of the D form which showed little increase over the three grade levels.

The graphic presentation of the interaction for Sex X Form showed non-parallelity; the written patterns of boys and girls were obviously different. Girls wrote more for the three written language forms with an order of magnitude which was D, N, E. The boys' order of magnitude was E, D, N. The quantity of sentences written for the narrative (N) form surpassed their D and E form quantity. The marked increase of the boys' quantity of writing for the N form resulted in the sexes' exhibiting the most similar quantity for form N. It was noted that their writing quantities were most different for the expository form.

Other Raw Data Criteria

The remaining raw data criteria were reported through the inclusion of their analyses of variance tables (Tables 29-37). The tables included the significant order of magnitude of means and the significant gap.

TABLE 29

ANALYSIS OF VARIANCE OF TOTAL WORDS (R)

Source	df	Sum of Squares	Mean Square	F	Signifi-cance
Grade	2	82,023.54	41,011.77	14.05	.01
Sex	1	41,395.24	41,395.24	14.19	.01
Form	2	156,941.34	78,470.67	26.90	.01
Grade X Sex	2	2.234.52	1.117.26		
Grade X Form	4	53,482.42	13,370.61	4.58	.01
Sex X Form	2	10,150.62	5.075.31	1.73	N.S.
Grade X Sex X Form	4	5,083.14	1.270.79		
Within Cells	432	1,260,135.04	2,916.98		
Total	449	1,611,445.86			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = 12.259

Order of Magnitude

	4	5	6
Grade	105.79	122.75	138.85

	M	F
Sex	112.87	132.05

	D	N	E
Form	97.53	127.39	142.47

TABLE 30

ANALYSIS OF VARIANCE OF TOTAL T-UNITS (R)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	890.30	445.15	11.38	.01
Sex	1	859.74	859.74	21.98	.01
Form	2	395.20	197.60	5.05	.01
Grade X Sex	2	5.92	2.96		
Grade X Form	4	914.53	228.63	5.84	.01
Sex X Form	2	285.34	142.67	3.65	.05
Grade X Sex X Form	4	49.60	12.40		
Within Cells	432	16,894.00	39.11		
Total	449	20,294.63			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = 1.420

Order of Magnitude

	4	5	6
Grade	11.66	13.55	15.10

	M	F
Sex	12.05	14.82

	D	E	N
Form	12.26	13.49	14.55

TABLE 31

ANALYSIS OF VARIANCE OF TOTAL SIMPLE SENTENCES (R)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	124.84	62.42	4.46	.05
Sex	1	136.68	136.68	9.76	.01
Form	2	254.92	127.46	9.11	.01
Grade X Sex	2	22.43	11.22		
Grade X Form	4	105.88	26.47	1.89	N.S.
Sex X Form	2	65.07	32.54	2.33	N.S.
Grade X Sex X Form	4	12.90	3.23		
Within Cells	432	6,044.16	13.99		
Total	449	6,766.88			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .845

Order of Magnitude

	4	5	6
Grade	5.18	5.68	6.46

	B	G
Sex	5.22	6.32

	E	N	D
Form	4.89	5.71	6.73

TABLE 32

ANALYSIS OF VARIANCE OF TOTAL COMPOUND SENTENCES (R)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	15.45	7.73	3.00	N.S.
Sex	1	.18	.18		
Form	2	79.00	39.50	15.31	.01
Grade X Sex	2	5.16	2.58	1.00	N.S.
Grade X Form	4	30.67	7.67	2.97	.05
Sex X Form	2	18.76	9.38	3.64	.05
Grade X Sex X Form	4	9.28	2.32		
Within Cells	432	1,112.72	2.58		
Total	449	1,271.22			

Tukey's Procedures for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .364

	Order of Magnitude		
	E	D	N
Form	1.01	1.31	2.01

TABLE 33

ANALYSIS OF VARIANCE OF TOTAL COMPLEX SENTENCES (R)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	51.07	25.54	5.95	.01
Sex	1	79.38	79.38	18.50	.01
Form	2	383.59	191.80	44.70	.01
Grade X Sex	2	4.49	2.25		
Grade X Form	4	29.72	7.43	1.73	N.S.
Sex X Form	2	5.49	2.75		
Grade X Sex X Form	4	8.37	2.09		
Within Cells	432	1,853.04	4.29		
Total	449	2,415.16			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .470

Order of Magnitude

	4	5	6
Grade	2.51	2.71	3.30

	B	G
Sex	2.42	3.26

	D	N	E
Form	1.77	2.73	4.02

TABLE 34

ANALYSIS OF VARIANCE OF TOTAL COMPOUND-COMPLEX SENTENCES (R)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	5.60	2.80	1.95	N.S.
Sex	1	9.39	9.39	6.56	.05
Form	2	38.32	19.16	13.39	.01
Grade X Sex	2	1.92	.96		
Grade X Form	4	5.41	1.35		
Sex X Form	2	4.78	2.39	1.67	N.S.
Grade X Sex X Form	4	2.69	.67		
Within Cells	432	618.16	1.43		
Total	449	686.28			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .271

Order of Magnitude

	D	N	E
Form	.49	.94	1.20

	B	G
Sex	.73	1.02

TABLE 35

ANALYSIS OF VARIANCE OF SUBORDINATE ADJECTIVE CLAUSES (P)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	3.04	1.52	2.00	N.S.
Sex	1	8.00	8.00	10.52	.01
Form	2	5.05	2.53	3.33	.05
Grade X Sex	2	.16	.08		
Grade X Form	4	.22	.06		
Sex X Form	2	2.97	1.49	1.96	N.S.
Grade X Sex X Form	4	2.31	.58		
Within Cells	432	328.24	.76		
Total	449	350.00			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .198

Order of Magnitude

	E	N	D
Form	.45	.64	.70

	B	G
Sex	.47	.73

TABLE 36

ANALYSIS OF VARIANCE OF SUBORDINATE ADVERB CLAUSES (R).

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	98.96	49.48	7.05	.01
Sex	1	74.42	74.42	10.60	.01
Form	2	1,026.20	513.10	73.09	.01
Grade X Sex	2	.49	.24		
Grade X Form	4	15.52	3.88		
Sex X Form	2	14.45	7.23	1.02	N.S.
Grade X Sex X Form	4	7.37	1.84		
Within Cells	432	3,032.40	7.02		
Total	449	4,269.82			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .601

Order of Magnitude

	4	5	6
Grade	2.55	2.69	3.60

	B	G
Sex	2.54	3.36

	D	N	E
Form	1.55	2.25	5.01

TABLE 37

ANALYSIS OF VARIANCE OF SUBORDINATE NOUN CLAUSES (R)

Source	df	Sum of Squares	Mean Square	F	Significance
Grade	2	18.67	9.34	4.51	.05
Sex	1	20.91	20.91	10.10	.01
Form	2	141.56	70.78	34.19	.01
Grade X Sex	2	1.15	.57		
Grade X Form	4	19.74	4.94	2.39	N.S.
Sex X Form	2	32.76	16.38	7.91	.01
Grade X Sex X Form	4	1.71	.42		
Within Cells	432	894.48	2.07		
Total	449	1,131.00			

Tukey's Procedure for Comparing Individual Means

Significant Main Effect Means

Significant Gap = .299

Order of Magnitude

	4	5	6
Grade	.72	1.09	1.19

	B	G
Sex	.79	1.22

	D	E	F
Form	.33	.98	1.70

Analyses of Variances Summarized

Table 38, Criterion Variables Declared Significant, revealed the results of all the analyses of variance tests. The proportioned data had far fewer significant differences than the raw data.

GARBLES

Relatively few garbles were found; there were only 46 identified in the 450 compositions analyzed. Their correlation coefficients were meager, and they produced no significant results when analyzed by the analysis of variance. It was noted that more garbles were produced at each higher grade level: 12 in fourth (boys 7, girls 5), 15 in fifth (boys 8, girls 7), and 19 in sixth grade (boys 6, girls 13).

FREQUENCIES AND PERCENTAGES OF SENTENCE TYPES AND SUBORDINATE CLAUSES

Frequency and percentage information for sentence types and subordinate clauses (Table 39) showed patterns which were reported earlier in the analysis of variance reports.

It was revealed that intermediate grade children used the simple sentence with the greatest frequency. They used the following percentages of sentence types: simple 53%, complex 26%, compound 13%, and compound-complex 8%.

The utilization of subordinate conjunctions and/or groups of words which began subordinate clauses has been provided: adjectives (Table 40), adverbs (Table 41), and nouns (Table 42).

TABLE 38

CRITERION VARIABLES DECLARED SIGNIFICANT

Criteria	Grade	Sex	Form	Grade X Sex	Grade X Form	Sex X Form	Grade X Sex X Form
Proportioned Criteria							
Sentence Length & Words (P)			X				
Total T-units (P)	X		X		X		
T-Unit Length			X			X	
Simple Sentences (P)			X				
Compound Sentences (P)			X			X	
Complex Sentences (P)			X				
Compound-Complex (P)			X				
Adjective Clauses (P)			X				
Adverb Clauses (P)			X				
Noun Clauses (P)			X			X	
Raw Criteria							
Total Sentences (R)	X	X			X	X	
Total Words (R)	X	X	X		X		
Total T-units (R)	X	X	X		X	X	
Simple Sentences (R)	X	X	X				
Compound Sentences (R)			X		X	X	
Complex Sentences (R)	X	X	X				
Compound-Complex (R)		X	X				
Adjective Sentences (R)		X	X				
Adverb Sentences (R)	X	X	X				
Noun Sentences (R)	X	X	X			X	

TABLE 39

FREQUENCIES AND PERCENTAGES OF
SENTENCE TYPES AND SUBORDINATE CLAUSES

Criteria	Grade						Sex				Form					
	4		5		6		G		B		D		E		N	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Simple Sentences (R)	777	30	852	33	969	37	1423	55	1175	45	1009	39	733	28	856	33
Simple Sentences (P)	63	32	64	33	66	34	98	51	96	49	96	50	64	33	33	17
Compound Sentences (R)	180	28	224	34	247	38	330	51	321	49	197	30	152	23	302	47
Compound Sentences (P)	14	30	16	35	16	34	21	46	25	54	21	45	14	30	12	25
Complex Sentences (R)	376	29	406	32	495	39	733	57	544	43	265	21	603	47	409	32
Complex Sentences (P)	31	32	31	32	34	36	51	52	46	48	26	27	55	57	16	16
Compound-Complex (R)	108	27	144	37	143	36	230	58	165	42	74	19	180	45	141	36
Compound-Complex (P)	9	29	11	36	10	35	15	49	15	51	8	26	17	56	5	18
Adjective Clauses (R)	74	27	92	34	104	39	165	61	105	39	105	39	68	25	97	36
Adjective Clauses (P)	6	29	7	35	8	36	11	52	10	48	12	55	6	28	4	17
Adverb Clauses (R)	382	29	404	30	541	41	755	57	572	43	233	18	757	57	337	25
Adverb Clauses (P)	32	30	33	32	40	38	54	51	51	49	23	22	69	66	13	12
Noun Clauses (R)	108	24	179	40	164	36	274	61	177	39	49	11	147	33	225	56
Noun Clauses (P)	8	27	11	39	9	34	15	53	15	47	4	15	14	50	10	35

TABLE 40

FREQUENCIES OF SUBORDINATE ADJECTIVE CONJUNCTIONS

Conjunction	Fourth Grade		Fifth Grade		Sixth Grade	
	Boys	Girls	Boys	Girls	Boys	Girls
that	13	24	25	28	27	19
[ ]*	7	22	7	19	18	34
which	2	4	2	6	4	8
who	2	3	0	2	1	0
where	1	2	1	0	0	2
when	0	1	0	0	0	0
whom	0	0	0	1	0	0
Totals	25	56	35	26	50	63

* the omitted words could be that, which, or who

TABLE 41

FREQUENCIES OF SUBORDINATE ADVERB CONJUNCTIONS

Conjunction	Fourth Grade		Fifth Grade		Sixth Grade	
	Boys	Girls	Boys	Girls	Boys	Girls
when	75	104	64	98	79	130
if	34	40	33	54	48	54
because	14	23	23	21	14	16
'cause	0	0	0	0	0	5
after	11	4	4	8	8	13
until	3	7	8	3	3	9
till	1	6	0	3	4	2
while	5	2	3	6	5	6
so	4	8	7	5	7	4
so that	0	0	1	0	1	3
[so] that	0	1	0	1	0	0
before	2	5	5	6	4	7
like	1	3	3	4	8	6
as	0	1	4	2	12	9
as...as	2	1	3	2	8	1
where	4	2	1	7	1	8
since	0	0	0	3	4	2
unless	0	4	7	6	3	10
once	0	0	0	0	0	2
maybe	0	0	0	0	2	0
whenever	0	0	0	0	0	1
only if	0	0	0	0	0	1
even if	0	3	0	0	0	1
except if	0	0	0	0	0	1
so if	0	0	0	0	1	0
as if	0	0	0	0	0	1
like if	0	1	0	0	0	0
somewhat like	0	0	0	1	0	0
fast as	0	0	0	0	1	0
just like	0	0	1	1	0	0
just what	0	0	0	0	0	1
different than	0	0	2	0	0	1
of course	0	0	1	0	0	0
now that	0	0	0	0	1	0
even though	0	0	0	0	1	0
by the time	0	0	0	0	0	1
every time	0	0	1	0	0	1
for [because]	1	0	0	0	2	0
[ ]*	1	0	0	0	2	0
Totals	158	215	171	231	219	296

[ ]* the omitted words could be when or because

TABLE 42

FREQUENCIES OF SUBORDINATE NOUN CONJUNCTIONS

Conjunction	Fourth Grade		Fifth Grade		Sixth Grade	
	Boys	Girls	Boys	Girls	Boys	Girls
what	15	17	18	32	27	27
that	7	18	30	17	20	21
[ ]*	11	28	20	32	20	39
where	1	1	0	1	1	1
why	1	0	0	2	0	1
who	0	3	1	2	0	0
whoever	0	0	0	0	0	1
when	0	0	0	2	0	1
which	0	0	0	0	0	1
whatever	3	0	0	1	2	0
if (question)	0	1	0	15	0	9
how	0	2	0	2	2	0
Totals	38	70	69	106	72	101

[ ]* the omitted words could be that or what

CHAPTER IV

DISCUSSION OF THE RESULTS

The study tried to uncover whether or not differences occurred in the written language patterns used by intermediate grade children when they wrote three compositions for different purposes. The compositions written by each student were examples of descriptive, expository, and narrative writing.

Also of interest was whether or not there were differences in the written language patterns of boys and girls, and if there were differences in the written language patterns of fourth grade, fifth grade, and sixth grade pupils.

The motivational devices, tape recordings of unfinished stories, utilized in the study appeared to be very effective in stimulating an immediate written response. Only one pupil out of the original cross-sectional sample of nearly 300 pupils failed to respond, and there were only three sets of compositions discarded because of illegibility. Part of the success may have been due to the use of a prepared form upon which the children wrote. The lined form had all pertinent identificational information on it before it was given to the children. The orientation, motivational devices, and sample of the specimen form are contained in the Appendix.

The nine classroom teachers whose pupils were involved in the study indicated an opinion that "representative" samples of the children's writing were obtained.

While the need for the forms of writing, i.e., descriptive, expository, or narrative, seldom occur in a pure manner, the written compositions submitted by the students did produce the forms called for by the motivational devices.

The pupils in the study wrote so willingly that the quantity of their writing introduced an interesting question. Would the sheer magnitude of their writing affect the findings?

To answer this question all appropriate dependent variables were proportioned by dividing each by the scores for the criterion, Total Sentences.

That led to the establishment of a group of ten criteria which was referred to as the proportioned data criteria group. A second group of ten criteria with their raw scores was referred to as the raw data criteria. The proportionalizing process was described in detail near the end of Chapter II.

The written language structures selected as criteria were analyzed to note relationships. The correlation matrixes revealed that many of the criteria were highly related. Dependent and independent variables were both inter- and intra-related. A total of 316 of 820 correlation coefficients was found to be at or beyond the .05 level of significance for the raw data variables, while 118 of 435 correlation coefficients were significant for the proportioned data.

The results of analyses of variance for the raw data and proportioned data criteria were shown in Table 43. The proportioned data criteria group of ten criteria had a total of 11 significant differences for the three main effects. However,

TABLE 43

SIGNIFICANCE AND ORDER OF MAGNITUDE FOR ALL VARIABLES

Proportioned Data Criteria	FORM				GRADE				SEX		
	S[1]	O. M.[2]			S[1]	O. M.[2]			S[1]	O. M.[2]	
Sentence Length and Total Words	01	D	N	E	NS	4	5	6	NS	G	B
T-Units	01	N	D	E	05	4	5	6	NS	B	G
T-unit Length	01	D	N	E	NS	5	4	6	NS	G	B
Simple Sentence	01	N	E	D	NS	4	5	6	NS	B	G
Compound Sentences	01	N	E	D	NS	4	5	6	NS	G	B
Complex Sentences	01	N	D	E	NS	4	5	6	NS	B	G
Compound-Complex	01	N	D	E	NS	4	6	5	NS	G	B
Adjective Clauses	01	N	E	D	NS	4	5	6	NS	B	G
Adverb Clauses	01	N	D	E	05	4	5	6	NS	B	G
Noun Clauses	01	D	N	E	NS	4	6	5	NS	B	G
Raw Data Criteria											
Total Sentences	NS	D	E	N	01	4	5	6	01	B	G
Total Words	01	D	N	E	01	4	5	6	01	B	G
T-units	01	D	E	N	01	4	5	6	01	B	G
Simple Sentences	01	E	N	D	05	4	5	6	01	B	G
Compound Sentences	01	E	D	N	NS	4	5	6	NS	B	G
Complex Sentences	01	D	N	E	01	4	5	6	01	B	G
Compound-Complex	01	D	N	E	NS	4	6	5	05	B	G
Adjective Clauses	05	E	N	D	NS	4	5	6	01	B	G
Adverb Clauses	01	D	N	E	01	4	5	6	01	B	G
Noun Clauses	01	D	E	N	05	4	6	5	01	B	G

[1]Significance

[2]Order of Magnitude

the raw data group of ten criteria had a total of twenty-five (25) significant differences for the three main effects.

Noticeable changes occurred when the raw data were proportionalized and then reanalyzed. The statistical results for the raw data criteria and the proportioned data criteria differed markedly. It appeared that the total amount written on each composition influenced the results obtained for the raw data criteria. Thus, it was decided that the results for the proportioned data criteria were of greater validity because they were less influenced by the total amount written.

The results for the raw data and the proportioned data criteria will be discussed separately, and the proportioned data will be reported in greater detail. The discussion of results applied to the sample population used in the study.

RAW DATA CRITERIA RESULTS

The analyses of the raw data criteria revealed that when children wrote compositions for different purposes, their written language patterns changed.

In their expository compositions they used the most words, wrote the most complex and compound-complex sentences, and used the most subordinate adverb clauses. The frequent use of the complex sentence type in expository writing collaborated a finding reported earlier by Johnson (1967). Children used the least simple sentences, compound sentences, and subordinate adjective clauses. Their use of total sentences, T-units, and subordinate noun clauses in expository writing was greater

than in their descriptive compositions, but less than in their narrative writing.

When the children wrote narrative compositions, they used more T-units, compound sentences, and subordinate noun clauses. The children wrote quantities of words, complex sentences, compound-complex sentences, and subordinate adverb clauses which were less than in their expository writing, but more than in their descriptive composition. The quantities of simple sentences and subordinate adjective clauses written in narrative compositions were less than in the children's descriptive writing, but more than in their expository compositions.

Both Johnson (1967) and Wiswall (1926) found that far more total sentences were written in the narrative compositions. The phenomenon did not occur as no differences were found in the number of total sentences written for each of the three different forms of composition analyzed in the study.

Boys' and girls' written language patterns were different for nine of the ten raw data criteria; their use of compound sentences was similar. Girls wrote more words, total sentences, T-units, simple sentences, compound-complex sentences, subordinate adjective clauses, subordinate adverb clauses, and subordinate noun clauses. The occurrence of that phenomenon was consistent with the findings reported by Sam, Stine, and earlier researchers.

Children in the fourth, fifth, and sixth grades used different written language patterns for seven of the ten raw data criteria. The mean value scores increased in at least

one of the higher grade levels for the use of total sentences, words, T-units, simple sentences, complex sentences, and subordinate adverb clauses. The children's compound sentences, compound-complex sentences, and subordinate adjective clauses did not change in their writing done at the various grade levels.

PROPORTIONED DATA CRITERIA RESULTS

The analyses of variance programs for the proportioned data criteria revealed that when the children wrote compositions for different purposes, their written language patterns did indeed change.

In their expository compositions they wrote the longest sentences and T-units, and the most T-units, complex sentences, compound-complex sentences, subordinate adverb clauses, and subordinate noun clauses.

When the children wrote narrative compositions, they used the fewest T-units, simple sentences, compound sentences, complex sentences, compound-complex sentences, subordinate adjective clauses, and subordinate adverb clauses.

In the descriptive compositions the children wrote the shortest sentences, the shortest T-units, and the fewest noun clauses. However, they wrote the most simple sentences, compound sentences, and subordinate adjective clauses.

The assumption that "Language used by children for different purposes would very likely display somewhat different patterns." (O'Donnell, Griffin, Norris, 1967, p. 87) was verified.

Boys' and girls' language patterns were similar for the proportioned data criteria regardless of grade or form.

Children in the fourth, fifth, and sixth grades used similar written language patterns for eight of the ten proportioned data criteria. The exceptions were for T-units and subordinate adverb clauses where the occurrence of these structures increased in the intermediate grades. A significant difference in the length of T-units occurred in the writing of children; its length increased from fourth to fifth grade. The use of subordinate adverb clauses changed in the compositions of children; they used more in sixth grade than they did in fifth grade.

There were no significant findings for first order interaction of Grade X Sex, nor for the second order interaction of Grade X Sex X Form.

There was one significant Grade X Form interaction for the proportioned data criteria group. Children in the fifth and sixth grades used more T-units than fourth grade pupils used.

There were three significant Sex X Form interactions for the proportioned data criteria group. Both sexes wrote the longest T-units in expository writing but the boys' T-unit length was greater than the girls'. Boys and girls used the shortest T-units in their descriptive writing.

Boys used more compound sentences than girls did in their descriptive writing as both sexes wrote the greatest number of compound sentences for the descriptive form of composition.

In expository writing the girls' frequency of compound sentences was slightly greater than boys'. Boys and girls wrote their least number of compound sentences in narrative compositions and their pattern of use was similar.

Boys used the most subordinate noun clauses in their expository writing and their utilization exceeded the girls' use. Collectively the sexes used the most subordinate noun clauses in their expository compositions. In narrative writing the girls used far more subordinate noun clauses than boys. Boys and girls wrote the least and had the same mean scores for the descriptive form of composition.

Sentence complexity was viewed in two ways: (1) by noting patterns for T-units and sentences and (2) by noting patterns for sentence types.

The T-unit was alleged to be a better, or at least an easier, unit for noting written language changes (Hunt, 1965). The writer found that it was simpler to identify T-units than sentences. Also, the identification of the T-unit made the identification of subordinate clauses very simple. In the study the T-unit and sentence criteria followed similar written language patterns.

When considering all the compositions in the study, it was found that children used the following percentages of sentence types in their writing: simple 53%, complex 26%, compound 13%, and compound-complex 8%.

The children's use of subordination showed that they wrote the greatest number of adverb clauses, and that their

use of adverb clauses increased from fifth to sixth grade.

The 46 garbles found in the 450 compositions were not able to produce any significant results. Their frequency increased slightly at each higher grade level.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

SUMMARY

The study attempted to determine what, if any, differences occurred in the written language patterns used by intermediate grade children when they wrote compositions for different purposes, i.e., descriptive, narrative, and expository compositions.

The study also tried to uncover whether or not there were differences in the written language patterns of boys and girls, and if there were differences in the written language patterns of fourth grade, fifth grade, and sixth grade pupils.

The compositions were obtained by having the children of the cross-sectional sample listen to tape recorded, motivating devices. On three separate occasions the children listened to different stories which were designed to induce written responses in a specific form, i.e., descriptive, expository, or narrative writing.

The children in the sample responded very well to the writing situations. Their compositions were then analyzed and their scores tabulated according to the procedures previously listed.

The raw data were then proportioned and both sets of data were subjected to a correlation program and analyses of variance programs.

Discussion of the raw data criteria was included in Chapter IV because its inclusion was desirable to show the marked differences in written language patterns which occurred when raw data were proportioned and both sets of data were analyzed.

It appeared that the total amount written influenced the results obtained for the raw data criteria. Thus, the results for the proportioned data criteria were selected for reporting because they were less influenced by the sheer magnitude of the writing. This diminishes the possibility of extreme scores unduly influencing the patterns obtained from the analysis of the data.

CONCLUSIONS

The following conclusions, which may have implications for the general population, are drawn from the sample of the study which involved intermediate grade children:

1. The correlational matrixes reveal that many of the criteria are highly related and that the independent and dependent variables are intra-related and inter-related. Of 820 correlation coefficients 316 are found to be at or beyond the .05 level of significance for the raw data variables, while 118 of 435 correlation coefficients are significant for the proportioned data.
2. The written language patterns of intermediate grade children are significantly different when they write

for different purposes, i.e., descriptive, expository, or narrative compositions.

a. In expository writing the children write the greatest quantity, use the most complexity, and use the most subordination. They write:
   1) the longest sentences, the longest T-units, and T-units with the greatest frequency.
   2) complex and compound-complex sentence types with the greatest frequency.
   3) the complex sentence type with a frequency that approaches the simple sentence type's frequency.
   4) subordinate adverb and noun clauses with the greatest frequency.

b. The narrative writing of the children reveals the least complexity and subordination. They write:
   1) each sentence type with the least frequency.
   2) subordinate adjective and adverb clauses with the least frequency.

c. In descriptive writing the intermediate grade children use the least quantity; however, they use the greatest frequency of certain sentence types. They write:
   1) the shortest sentences and T-units.
   2) simple and compound sentence types with the greatest frequency.
   3) subordinate adjective clauses with the greatest frequency.

3. Intermediate grade boys and girls exhibit similar written language patterns regardless of their grade level or the form of their compositions.
4. Pupils in fourth, fifth, and sixth grade use similar written language patterns. Two exceptions are noted:
   a. T-units are written with greater frequency by fifth grade students than by fourth grade students.
   b. subordinate adverb clauses are written with greater frequency by sixth grade pupils than by pupils in fourth or fifth grade.
5. Analysis of data drawn from the study shows that the sentence and the T-unit criteria yield similar results; however, the T-unit is easier to identify and facilitates the identification of subordinate clauses.
6. Children's compositions reveal the following descending order of frequency for sentence types: simple, complex, compound, and compound-complex.
7. In the use of subordination the children write the subordinate adverb clause with the greatest frequency.
8. The compositions of intermediate grade pupils do not reveal a frequent use of garbles, words which do not fit into the content.

IMPLICATIONS

Under the proper conditions there is little trouble in obtaining compositions from children in the intermediate grades; they are eager to write like grownups. Generally,

they enjoy writing when they have something about which to write.

Teachers must provide situations which cause children to want to write; conversely, teachers must be careful not to force unpleasant writing tasks upon children.

Intermediate grade children tend to make certain written mistakes: (1) they do not punctuate well and (2) their over use of common conjunctions results in run-on, complicated sentence structures.

This is an undesirable condition because at the heart of communication is the need for clarity.

A teacher can easily identify the basic syntactical structures of the writer by viewing the written composition in terms of T-units. Since this apparently is true, it seems logical to consider the idea that children might learn to structure their written language better, or it might be easier for them to communicate with more clarity, if they use the T-unit rather than the sentence as the basic unit of expression. The works of Hunt (1965) and O'Donnell, Griffin, and Norris (1967) should be consulted.

It is also possible that clarity is obtained by partially deleting, or combining, or imbedding long phrases and clauses, thus changing them into simpler modifiers within the independent clause. Naturally, this process could be overdone. However, transformational grammar holds promise and the works of Hunt (1965), Chomsky (1962 and 1965), and O'Donnell, Griffin, and Norris (1967) should be consulted.

Teachers must be aware that intermediate grade children are primarily involved in writing experiences that require them to explain phenomena with which they are familiar, thus, to write expository composition.

The fact that children have had more practice in writing expository composition might explain their obtainment of the highest quantitative scores for that form. It would follow that teachers might facilitate a freer flow of writing in descriptive and narrative composition by providing more experiences for children to utilize these written forms in meaningful, satisfying situations.

IMPLICATIONS FOR EDUCATION

1. Careful analysis of children's written compositions will reveal their levels of written language ability and help identify their written language problems.
2. Teachers must indicate their awareness of the various forms and purposes of written language by exposing intermediate pupils to activities which will promote and provide situations which (a) provide for a variety of writing experiences that have different purposes and (b) are likely to be stimulating to children.
3. Teachers must strive to provide the appropriate materials, instruction, and activities which will:
   a. Stress the roles and the effective uses of syntactical patterns. It is possible that the T-unit can achieve the desired clarity of written language

better than the sentence.

b. Implement the use of transformational grammar to obtain effective communication.

c. Facilitate a freer flow of written language for the descriptive and narrative forms of composition.

IMPLICATIONS FOR FURTHER STUDY

In regard to the findings and conclusions of this study the recommendations for further research are:

1. The form of written language, i.e., descriptive, expository, and narrative, appears to affect the written language patterns used by children. Verification of the phenomenon is necessary; therefore, it is recommended that the study be replicated with a larger and more varied sampling of the general population.
2. The effects of proportionalizing of frequency data should be studied and should be employed in analysis of written language where appropriate.
3. The findings of the study should be investigated using oral language in order to further identify relationships between oral and written language patterns for intermediate grade children.
4. A study should be conducted to see if any differences occur in the sentence patterns identified by Paul M. Roberts when children write compositions for different purposes.

5. Data must be gathered to provide insight concerning the possibility and desirability of using the T-unit as the syntactical structure for clarity of communication.
6. Research must be conducted to establish the desirability of providing instruction in transformational grammar.

APPENDICES

APPENDIX A

ORIENTATION

I am visiting many different classrooms to meet fourth, fifth, and sixth grade children like you. I want to get samples of your best writing.

I'll be here three times and play three different tapes for you. Each time you will write an ending for the information on the tape. You can write your ending just the way you want, but you must follow the idea on the tape.

You don't have to worry about spelling, just spell the best you can, but please write so that I can read your paper.

What you write will not affect your school marks in any way. This has nothing to do with your regular school work.

You each have a pencil and now I'm giving you a piece of paper. As you can see, your name and other information is on the top of the paper. Let's check this information to make sure that it is correct.

(Check information.)

After you hear the tape you may write as much as you want. If you fill the front of your paper, you may turn it over and write on the back. If you need any more paper, just raise your hand.

Now we'll listen to the tape. Follow the idea on the tape so that you can write a good ending.

(Play tape.)

Do you have any questions about the tape? (Pause) I'll play the tape for you once more.

(Replay the tape.)

You are ncw ready to write. If you finish early, please do something quietly until all the pupils are finished and I collect the papers. You may start writing behind the word "begin." Do your best and don't worry about your spelling.

APPENDIX B

DESCRIPTIVE STORY

All of us are interested in animals or at least some kind of animal. Most of us have visited a farm, gone to a zoo, or been to a circus. Some of us have pets at home and we have all seen different kinds of animals on television.

Animals have interested man for as long as we know. We like to know how they live and how they are different from us. Some animals are friendly and tame; they easily become house or yard pets. Other animals are not friendly and can't become pets, but are found on farms, or kept in zoos and circuses.

I'd like to have you describe an animal and then I'll try to guess the animal without you giving me its name. You pick an animal and then write as many things about that animal as you can. Don't give me one or two clues, give me lots of clues so I'll know exactly what animal you are talking about. Tell how it looks and how it travels. Describe the noise it makes, what it eats, how it feels, or any other clues you can think of.

Do a good job of telling me about your interesting animal. Tell me everything about it so that I can guess what it is.

APPENDIX C

EXPOSITORY STORY

The classroom was a buzz of excitement because a new student had arrived.

The teacher introduced Kim, the new student, to the rest of the pupils.

All the students were happy to welcome Kim and at recess they were very friendly.

By the end of the day, however, Kim seemed to be troubled. Shortly before dismissal time the teacher took Kim aside and talked with him.

When the teacher finished talking to Kim, she addressed the class. She told the boys and girls that Kim was troubled because he wasn't sure of what he could do or what he couldn't do. He didn't know the rules and was afraid he'd do something wrong.

Make believe you are a student in the class where a new pupil, Kim, has come and the teacher has asked you to explain the rules of your school to him.

Be sure to give Kim all the rules. Tell him about the classroom rules and the rules on the playground. Tell him what is expected in the lunchroom, in the gym, and in the auditorium. Include all the rules which Kim will have to follow while coming to school, while at school, and while going home after school.

Let's see how helpful you can be to a new classmate. Remember that some day you may be a new student just like Kim.

APPENDIX D

NARRATIVE STORY

Let's pretend that you are an astronaut. Our country already has a space station operating on the moon and spaceships have been around Venus and Mars.

A soft-landing has been made on Mars to collect air, soil, and plants. No animal life was seen from the spaceship on that trip.

Today another spaceship is being launched to travel to Mars. It will make a soft-landing also, but this time the astronauts will leave the ship to explore the planet.

Look, they're almost ready to launch the ship --3, 2, 1; BLAST-OFF!

With a roar the spaceship leaves the launching pad and speeds towards Mars.

The ship approaches Mars near the Sea of Venus. The Sea of Venus is an area which has many plants; the crew will explore these plants.

The spaceship softly settles into a landing spot and the astronauts leave the ship wearing their special spacesuits and helmets.

Wow, something is moving in the plants; let's see what it is!

Make believe you are a member of the first crew exploring Mars. Tell us what you think will be found and what will happen on Mars.

APPENDIX E

SPECIMEN FORM

Name Grade: 4 5 6 D.R.B. 1969

Sex: M F Form: D E N Teacher: Date:

Begin:

APPENDIX F

DESCRIPTIVE SPECIMEN SAMPLE

Subject: Male, fifth grade, IQ = 110

The animal that I am taking about has different color fur. It also has a long nose so it can swell. The animal can track down rabbits, sqirrels, birds, and chipmunk for hunter's. It chase cat's and lives in a coop. It can lay pup's if it is a female. The animal sould always have a name. You can feed him food only a specail food. The sound is like a barking sound. There is a lot of kinds of these animals. They can be a pet. The animal has stronge jaws.

EXPOSITORY SPECIMEN SAMPLE

Subject: Male, fifth grade, IQ = 110

I was doing my work when the teacher said that Kim was troubled. She said to me would you tell Kim the rules about the school. First I talked about the playground rules that you should not fight on the playground and you should never throw stones. Than I talked about the halls. If you are running and can't stop you can run into someone and hurt them. If you are in the library you should keep quiet and no running in the library. Than I talked about the lunchroom and you should never yell and run in the lunchroom because if someone is getting out of the bench you can knock them off and hurt them. In the gym you should never full around on the equipment. In the classroom you should never yell or run

because someone will put your name on the blackbroad and you will have to write a story. When I was finished he said to me that his troubles were over.

NARRATIVE SPECIMEN SAMPLE

Subject: Male, fifth grade, IQ = 110

There in the plant something is moving. The astronot gets his special ray gun out. Closer and closer we get. All of the sudden a green animal steps out of the plant and we fell to the ground. The green animal came over and looked at us if as we were a new kind of rock. He looked like a rat with whisters as long as a foot on both sides of his face. We got up and tried too grab him, but he had a forcefield around him. So we went back to our spaceship and he fellowed us right into our spaceship we can't take hime home with us, I said. So we both tried to push him off. As soon as we got him off the spaceship we shut the door and took off for home so we could tell the world there is animal life on Mars.

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VITA

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He attended public schools in Bethlehem, Pennsylvania and graduated from Liberty High School in 1953. He received his Bachelor of Arts Degree from Moravian College in 1957 and his Master of Arts Degree from Lehigh University in 1961. He also attended East Stroudsburg State College, Penn State University, Wayne University, Syracuse University, and Rutgers University.

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After teaching in Bethlehem elementary schools for four years Mr. Bortz became an elementary principal in Nazareth, Pennsylvania. Five years later he joined the faculty of East Stroudsburg State College, where he serves as the Director of the Campus Learning Center.

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