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A DEVELOPMENTAL ANALYSIS OF SENTENCE PRODUCTION ERRORS IN THE WRITING OF SECONDARY SCHOOL STUDENTS

DISSERTATION

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This study measured the effect of mode of discourse and developmental factors on composition length, syntactic complexity, and sentence-production error rate in the writing of secondary school students. The study also included a descriptive analysis of syntactic and logical patterns found in the sentence production errors.

The 297 students whose writing samples provided the data for this study were enrolled in grades 7, 9, and 11. The students were divided into low and high within-grade developmental groups. Each student wrote two compositions, one in the descriptive mode and one in the persuasive mode.

Within the limitations of this study, the following conclusions have been formulated.

1. A positive relationship exists between composition length and age and ability of student writers. In this study, older and more skilled writers wrote longer compositions.

2. Mode of discourse affects compositions length and syntactic complexity in student writing. Descriptive

compositions were longer, but persuasive compositions were more syntactically complex.

3. Syntactic complexity is not a reliable measure of development in writing if mode of discourse is not considered. The compositions of younger writers were as syntactically complex as those of older writers when the assignment was in the persuasive mode.

4. Error rates are affected by mode of discourse and by developmental factors of age and ability. Students made more run-on sentence errors when writing in the descriptive mode than they did when writing persuasively. Students in the 11th grade and in the high within-grade developmental groups made fewer errors.

5. There are syntactic and logical patterns that characterize students' sentence production errors, and these patterns change developmentally.

6. Errors in student writing often reflect attempts at syntactic growth, such as coordination within a clause, subordination, or the use of appositives.

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CHAPTER 1

INTRODUCTION

Significance and Background

Although research in developmental writing has much "unexplored territory," one area of writing development, syntactic growth, has been analyzed in some depth. Hunt's (1965) work in identifying the T-unit* and proposing that the T-unit increases developmentally in written composition has been supported by other work in developmental writing (Blunt, Johnson, & Frederick, 1968; Braun & Klassen, 1973; Loban, 1976; O'Donnell, Griffin, & Norris, 1967; Veal, 1974). In addition, the T-unit and Hunt's findings have been used to set norms and measure syntactic development in numerous methodological studies (Maimon & Nodine, 1978; Mellon, 1969; O'Hare, 1973; Stotsky, 1975).

Recently, some researchers have proposed that, while measurement of syntactic development using the words per T-unit (W/TU) concept may be very useful, situational factors such as mode of discourse also affect complexity in writing. Rosen (1969) found that 15- and 16-year-old students produced longer T-units in referential writing

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*A T-unit is a single main clause (or independent clause) plus whatever dependent clauses or nonclauses are attached to or embedded within it.

than in expressive writing. San Jose (1973) and Perron (1977), in studies of the writing of elementary school students, determined that mean T-unit length was greatest in argument or persuasion, followed by exposition, narration, and description. Crowhurse and Piche (1979) found that T-unit length was significantly greater in argument than in narration at grades 6 and 10 and also that T-unit length did not increase significantly between grades 6 and 10 in the mode of narration. In order to provide for more information about the effect of mode of discourse on syntactic complexity, the present study examined written products, in the modes of persuasion and description, of students in grades 7, 9, and 11.

Another aspect of development in writing, mastery of syntactic error, was not included in Hunt's analysis. Hunt's stated purposes did not include the study of students' errors. Some researchers have proposed that an analysis of errors in writing would be a promising adjunct to work on syntactic development. These researchers and theorists have begun to use the analysis of errors in writing to make inferences about the writing process and how it develops (Barritt & Kroll, 1978; Kagan, 1980; Kroll & Schafer, 1977; Lamb, 1977; Shaughnessy, 1977). They point to valuable work using errors to study development in the fields of language acquisition (Berko,

1958; Brown, 1957; Brown & Bellugi, 1964), reading (Goodman, 1969, 1973), and second language acquisition (Burt, 1975; Corder, 1967, 1975a, 1975b; Dulay & Burt, 1972; Richards, 1973, 1974).

Some researchers (Barritt & Kroll, 1978; Maimon & Nodine, 1978) have proposed that writing, like other learning processes, is a risk-taking procedure and that syntactic growth may be accompanied by a rise in the occurrence of syntactic errors. Maimon and Nodine (1978) found that development in syntactic skills was associated with a greater incidence of certain types of syntactic errors, such as sentence fragments, run-on sentences, and faulty parallelism. However, the study by Maimon and Nodine was not a developmental one in the traditional sense. They studied the syntactic development and error rate of college students after the students' participation in a short course on sentence-combining. The present study described relationships among syntactic development, grade level, and sentence errors, specifically run-on sentences and sentence fragments, in the writing of secondary school students.

Statement of the Problem

The problem in this study was to describe syntactic complexity and sentence production errors in writing done in two modes of discourse by students at three grade levels.

Specific Purposes of the Study

Specifically, the purposes of this study were as follows:

1. To examine differences in syntactic development in the writing of students at three grade levels.

2. To examine the effects of mode of discourse on the syntactic complexity of students' writing at three grade levels.

3. To measure the rate of sentence production errors, specifically sentence fragments and run-on sentences, in students' writing at three grade levels and in two modes of discourse.

4. To identify and describe sentence production errors, specifically sentence fragments and run-on sentences, and examine developmental error patterns.

5. To identify and describe syntactic structures and logical patterns characteristic of the sentence production errors of student writers at three grade levels.

6. To describe relationships among rate and types of production errors, grade level, mode of discourse, and syntactic complexity.

7. To describe the acquisition of punctuation associated with sentence and clause boundaries.

8. To draw inferences about students' developing concepts of a sentence and its boundaries.

Research Questions

The following research questions were studied.

1. What is the effect of mode of discourse on syntactic complexity in writing at three grade levels?

2. What is the rate of syntactic error in writing at three grade levels and in two modes of discourse?

3. Is growth in syntactic complexity associated with changes in rates or types of sentence production errors, specifically run-on sentences and sentence fragments?

4. Are there syntactic structures that characterize students' sentence production errors?

5. Are there logical patterns that characterize students' sentence production errors?

6. Are there relationships among rate and type of sentence production errors, grade level, mode of discourse, and syntactic complexity in students' writing?

7. What can be determined about students' acquisition of the use of punctuation associated with sentence and clause boundaries?

8. What can be determined from students' sentence production errors about their concepts of a sentence and its boundaries?

Definition of Terms

Average within-grade developmental group--classes in which students have scored between the 20th and 64th percentiles on national norms of the Iowa Test of Basic Skills, Levels Edition (1978) (reading and language subtests) for middle schools and the Test of Achievement and Proficiency Form T (1978) (reading and written expression subtests) for high schools. Students who score below the 30th percentile on national norms are enrolled in corrective language arts classes and did not participate in this study.

Error analysis--the systematic identification, categorization, and analysis of errors in writing to determine underlying patterns.

High within-grade developmental group--classes in which students have scored between the 65th and 85th percentiles on national norms of the Iowa Test of Basic Skills, Levels Edition (1978) (reading and language subtests) for middle schools or the Test of Achievement and Proficiency, Form T (1978) (reading and written expression subtests) for high schools. Students scoring above the 85th percentile on national norms are enrolled in the honors program and did not participate in this study.

Logical patterns--the logical meaning patterns determined in an error analysis of college students' writing by Lamb (1977). These patterns represent an

inherent instinct to link closely-related ideas. Lamb's logical patterns are listed in the Procedures for the Analysis of Data section, Chapter 3.

Modes of discourse--the types, forms, or kinds of written prose: argument, exposition, narration, and description. The two modes of discourse used for the assignments in this study were description and argument (persuasion). As in the work of Lloyd-Jones (1977), the term "persuasion" or "persuasive discourse" was used instead of the more formal term, argument.

Run-on sentence--a sequence of words beginning with a capital letter, ending with a period, question mark, or exclamation mark, and consisting of two or more T-units which have been incorrectly joined. Comma splices, fused sentences, and sentences consisting of three or more T-units joined with conjunctions without the accompanying commas were counted as run-on sentences. Sentences consisting of only two T-units joined with a conjunction without the accompanying comma were not counted as run-on sentences in this study.

Sentence fragment--a sequence of words beginning with a capital letter, ending with a period, question mark, or exclamation mark, and consisting of one of the following types: a dependent clause or a phrase.

Syntactic complexity, syntactic development, syntactic maturity, and syntactic fluency--used interchangeably in this study and refer to Hunt's (1965, 1970) hypothesis that writing becomes more complex as children mature. Hunt's T-unit concept, in which the total number of words in a passage is divided by the total number of T-units to determine mean T-unit length is used in this study to measure syntactic development. Hunt claimed that, as students grow in writing ability, they tend to write longer T-units; that is, they begin to use syntactic structures to subordinate and otherwise consolidate T-units, making them longer and more complex. Hunt (1965) found that mean T-unit lengths in the writing of 4th, 8th, and 12th graders, and skilled adult writers were 8.51, 11.34, 14.4, and 20.3 respectively.

The four terms related to syntactic growth are often used interchangeably. "Syntactic maturity" is most widely used in the literature on developmental writing. However, because the term "maturity" seems to indicate age rather than development and because one of the purposes of this study was to examine the effects of writing modes as well as the writer's age, the terms "syntactic development" and "syntactic complexity" are used more often in this study.

T-unit (minimal terminable unit)--a single main clause (or independent clause) plus whatever dependent clauses or nonclauses are attached to or embedded within it. T means terminable. Punctuationally a T-unit can be terminated with a period or other terminal mark without creating a fragment. "Mean words per T-unit" (W/TU) has been used by many researchers (Hunt, 1965, 1970, 1977; Mellon, 1969; O'Donnell et al., 1967; O'Hare, 1973; Stewart, 1978) to measure development in writing. Hunt (1965) proposed that mean W/TU is a more reliable index of growth in writing than are sentence length, clause length, or subordination ratio. Procedures for identifying and counting T-units were taken from Hunt's (1965, 1970, 1977) work and are described in the Procedures for Analysis of the Data, Chapter 3.

CHAPTER 2

SURVEY OF RELATED LITERATURE

The significant literature for this study will be discussed in the following categories: (a) background, methods, and directions in research in written composition, (b) the use of error analysis to study writing, (c) developmental writing and the measurement of syntactic development, and (d) mode of discourse effects on syntactic complexity in writing.

Background, Methods, and Directions in Research in Written Composition

Emphasis on process in writing has been a recent development. Traditionally, research in the field of written composition has been concerned chiefly with the testing of classroom techniques and programs. Most research consisted of an application of some technique to a group of students and an analysis to determine if the technique resulted in "better" writing or fewer errors. This emphasis on methodology developed from practical needs associated with students' difficulties in learning to write but resulted in an absence of any real understanding of the way skill in writing really develops.

Of the 504 studies listed in a comprehensive review of research by Braddock, Lloyd-Jones, and Schoer (1963), 502 were instructional studies, and the other two were only indirectly concerned with theoretical matters. The authors concluded that

> research in composition, taken as a whole, may be compared with chemical research as it emerged from the period of alchemy . . . laced with dreams, prejudices, and makeshift operations. (p. 356)

They called for investigations into the composing process in their chapter on "unexplored territory." Other early reviews of research by Meckel (1963) and Parke (1961) contained similar calls for further research.

The authors of the most recent comprehensive review of research (Cooper & Odell, 1978) chose as their title Points of Departure and stated that

> ultimately, comparison group research may enable us to improve instruction in writing, but that research should be based on carefully tested theory and on descriptions of written discourse and the processes by which that discourse comes into being. (p. xiv)

Other researchers and teachers of writing have affirmed this need for descriptive rather than methodological research in the study of written composition (Graves, 1975; King, 1977; Nold, 1979; Odell, 1979; Sommers, 1978, 1979).

During the last decade, beginning with Emig's pioneering study of the composing processes of 12th graders in 1971, progress toward an understanding of writing as a process has begun. Case-study methodology has been used successfully to observe children and adults systematically as they actually engage in the process of composing (Beach, 1976; Emig, 1971; Graves, 1975, 1979a, 1979b; Metzger, 1979; Mischel, 1974; Perl, 1979; Stallard, 1974).

Emig's (1971) procedures in studying processes in writing involved a composing-aloud technique which enabled her to study the inner motivations and thoughts of her subjects. This procedure was refined and coupled with methodology from research in developmental psychology to yield a helpful new technique, protocol analysis, in which students compose aloud and their recorded protocols are transcribed and analyzed for evidence of reasoning strategies. Using this technique, researchers (Flower & Hayes, 1977, 1980; Hayes & Flower, 1978, 1979) identified, from their analysis of writing protocols, heuristic strategies associated with effective writing. These strategies included ways to respond to various aspects of the writing task such as the needs of the intended audience and the specific purposes of writing.

Very recently, cognitive psychologists have shown interest in writing as a thinking process as evidenced by the work of Bruce, Collins, Rubin, and Gentner (1978), who adopted a computer metaphor and terminology to describe composing processes. These theorists stressed the communicative function of writing, and their work in explaining composing as a cognitive process drew its research base from work on reading comprehension, memory, and cognition by researchers such as Haviland and Clark (1974), Mandler (1974), and Thorndyke (1977).

Research in which writers are observed as they actually engage in writing has been responsible for many valuable insights into the writing process, and some researchers propose that this is perhaps the only way writing should be studied (Graves, 1975; Murray, 1978). The past emphasis on analysis of writing products in composition research is decried by many researchers. Methods using modern technology such as videotaping equipment and special pens for timing the pauses in writing behaviors (Britton, 1978) have been developed, and researchers have developed elaborate observational records (Perl, 1979) to aid in observing the writing process. However, observational studies have certain methodological problems. In spite of the valuable work done with procedures such as protocol analysis and

composing aloud, the procedure of verbalizing inner thoughts may, in fact, interfere with the process. Some researchers have noted that the study of the written product for evidence of cognitive processes and rule-governed language behaviors used by writers should not be abandoned.

Odell (1977) and Odell and Sage (1978) used analyses of students' written products to identify cognitive strategies, such as the use of focus, sequence, classification, and contrast. Cooper and Courts (1980) describe an ongoing study in which several thousand student writing samples are being analyzed for the presence of words and structures indicating the use of these cognitive strategies. From an analysis of the students' use of the strategies, Cooper and Courts will determine level of cognitive development in writing.

In an extensive study of "writing across the curriculum" in the British schools, Britton, Burgess, Martin, McLead, and Rosen (1975) analyzed samples from all content areas and from thousands of students, ages 7-18. From an examination of the writing samples, Britton et al. developed categories for intended audience and function and studied developmental changes in writing.

Smith (1981) has just completed an analysis of students' written products, grades one through eight.

He found that, as children mature, they write longer and more complex compositions. Hunt's (1965) theory of syntactic development was supported by Smith's (1981) analysis. Smith also analyzed the writing samples for evidence of changes in concepts of audience, purpose, and in vocabulary usage. The findings concerning the written products were correlated with teachers' judgments of students' writing abilities.

Important contributions have been made to the study of writing through the analysis of written products. Almost all of the studies reviewed in the following sections on error analysis, syntactic maturity, and mode of discourse effects had, for their research methodology, the analysis of written products.

Error Analysis

Simply counting and categorizing errors in writing has been done, beginning with Hoyt (1906), throughout the history of research in composition. Error counts have been used to evaluate programs (Duffin, Kroll & Winkworth, 1977; Evans, 1979), teaching techniques (Gordon, 1979; Maimon & Nodine, 1978), and the national and statewide educational progress of students (National Assessment of Educational Progress, 1972, 1975; Second National Assessment of Educational Progress, 1978; Texas Assessment Project, 1978). Mellon's (1975) report on the first

National Assessment of Educational Progress (NAEP) contained a section describing frequency of errors such as spelling, punctuation, capitalization, sentence fragments, run-on sentences, awkward constructions, agreement, and word choice. Slotnick and Rogers (1973) used the error frequency counts and writing samples from the NAEP to investigate the relationships between mechanical features and factors such as choice of topic and ethnicity of the writer.

Higgens (1973) tabulated errors in the writing samples of remedial students in college and drew conclusions about students' needs in writing instruction. He reported that spelling and sentence logic pose the greatest problems for students. Fisher (1966) presented several detailed analyses of errors in college writing. Fisher noted the inadequacy of past research in this area and criticized past researchers for their failure to break down the errors within each classification. Fisher's compilation of 280 errors in syntax and morphology included features accompanying the errors in each category.

Some researchers have studied errors for their effect on teachers' quality ratings of compositions. Diederich (1966) and Rogers (1970) found that often teachers focus on errors in their evaluations of papers

to the exclusion of other factors such as organization and content. Crowhurst (1980) found that correct mechanical features in written compositions were more important to teachers in determining quality ratings than was syntactic fluency as measured by words per T-unit.

Students, as well as teachers, also seem to be concerned with errors in writing. Perl (1979) found that the remedial writers she studied were, at times, almost paralyzed in their efforts to move forward in writing because of their concern for correctness. These writers never developed the fluency and concern for audience and purpose which characterize proficient writers. Beach (1976) found that students, when asked to revise, often were more concerned with features of correctness than they were with the larger organizational aspects of their compositions. Beach concluded that this concern for correctness hampered revision.

Error counts have also been used to study the writing of speakers of certain dialects of English and to establish a case for dialect interference in writing (Fasold, 197; Wolfram & Fasold, 1974); however, the importance of dialect interference in writing has recently been challenged. Sternglass (1974) found, in her study of remedial writers, that, although they made fewer dialect errors, White students made the same types of errors as

did Black students. Hartwell (1980), in his thorough review of the literature on dialect interference in writing, asserted that very little evidence to substantiate such interference in writing has ever been reported. Most discussions of the subject simply assume interference and go on to deal with its pedagogical implications (Campbell & Meier, 1976; Rockas, 1977).

Hartwell (1980) cited research on the direct access hypothesis in reading (Franks & Bransford, 1974; Kolers, 1972) and proposed a "print code" hypothesis in writing, asserting that students less familiar with print, usually poor readers, have a less developed set of hypotheses about ways to deal with print. When they encounter a linguistic task for which they are unprepared, they actively deal with the task by applying the linguistic knowledge they have. Sometimes, when they have no adequate hypotheses, they fall back on speech patterns in writing. Thus, errors are a record of their active strategies and are not necessarily characterized by dialect "interference."

Error counts and analyses have been used for many purposes in writing research. Recently some researchers have urged the adoption of error analysis because of its value in the study of the intellectual processes involved in the development of writing ability. Barritt

and Kroll (1978) noted that Piaget's early interest in mental development began with his interest in children's wrong answers. This led him to explore the process by which children arrived at their responses. As Barritt and Kroll stated, in their call for research in writing from a cognitive-developmental viewpoint,

> Intellectual growth and language development are monuments to the efficacy of error. In the development of language and thought, we see a chain of "mistakes" that begins in infancy with errors about the nature of the physical world and continues through adulthood in errors about the abstract and hypothetical. The cognitive-developmental position values error, viewing it as a "window" into the mental processes involved in language use. (p. 53)

Error analysis focuses on the underlying mental operations as opposed to the surface error alone. The fact that a writer makes an error is less significant than how he or she came to make that error. As Kroll and Schafer (1977) said about error analysis, "errors are 'good,' interesting to the theorist and the teacher, and useful to the learner as active tests of his hypotheses" (p. 9).

This attitude toward error has been responsible for important insight into the reading process. Goodman (1969, 1973), in his miscue analysis, studied errors in children's oral reading performances as clues to their underlying systems of organized rules in language.

Rather than merely counting the errors children made as they read orally, Goodman used these errors to study the reading process itself.

Error analysis has been used successfully by researchers in English as a second language (ESL) to study the processes necessary for the acquisition of a second language (Burt, 1975; Corder, 1967, 1975a, 1975b; Dulay & Burt, 1972; Richards, 1971, 1974; Valdman & Walz, 1975). Kroll and Schafer (1977) suggested that the methodology developed in ESL research in error analysis could be successfully applied to research in written composition.

The use of error analysis in composition research and teaching has drawn impetus from the new insights on error proposed by Shaughnessy (1976, 1977). Her work has signaled a new respect for the study of errors in students' writing, and researchers such as Barritt and Kroll (1978), Duke (1979), Kroll (1980), Kroll and Schafer (1977), and Lamb (1977) have called for a study of errors for the cognitive processes they reveal. Also, insights gained from early analyses of writing errors have led to the formulation of positive methods for the teaching of writing (Bamberg, 1977; Bartholomae, 1981; Epps, Kirkpatrick, & Southwell, 1978; Halpern & Mathews,

1980; Harris, 1978; Moore, 1980; Shaughnessy, 1976, 1977; Sipple, 1978).

In composition research, errors offer more than the criteria on which to rate papers. From a developmental viewpoint, the learner is seen not as a passive slave to habits but as an active agent constructing a coherent view of the world. This attitude is analogous to Smith's (1978) view of reading as an active effort on the part of the reader to "make sense" of the world. Just as Goodman's (1969, 1973) premise is that mistakes are clues to a reader's inner system of language rules, the premise underlying error analysis is that errors are clues to a system of organized rules and strategies on which a writer draws to perform the composing task.

Error analysis is a new area of research in composing, and there are many types of errors to study. Some researchers have begun to explore students' problems with sentence boundaries as these problems manifest themselves in sentence fragments and run-on sentences. Kagan (1980) described these errors as "among the most persistent and irremediable errors in grammatically deficient prose" (p. 127). Duffin et al. (1977), in an analysis of students' errors for an evaluation of a class in "basic" writing, concluded that sentence fragments, run-on sentences, and comma splices gave

students the greatest problems initially and were the most resistent to improvement. Warriner and Griffith (1977), a well-known prescriptive grammar, listed these errors as common problems, and Shaughnessy (1977) discussed run-on sentences as one of the most prevalent problems in students' writing.

Kagan (1980) proposed that students may not be able to perceive sentence boundaries because of incorrect cues in the surface features of sentences. They may be using these miscues to direct their own production of sentences.

Kagan (1980) gave remedial writing students a run-on sentence test and a sentence fragment test in which students were asked to label word strings that were mislabeled as sentences to determine what factors made the students misperceive them as sentences. She found that word strings of a certain length containing a verb-noun sequence were most often mislabeled as sentences. She also found that the sentence fragments and run-on sentences chosen by the students had one other structure in common; the word strings all contained at least one prepositional phrase. The fragment most labeled as a sentence was made up of two prepositional phrases. Students seemed to be using certain cues, notably prepositional phrases, to signal sentence boundaries.

Kagan (1980) noted that in reading it has been shown that patterns and cues are actively sought by readers to simplify the perceptual field. She proposed that similar perceptual tendencies are involved in the encoding of written language. Researchers have found a tendency among children to generalize rules while learning and using a language (Berko, 1958; Brown, 1957; Dale, 1976; Zutell, 1978). Perhaps, as a result of attention to miscues, deficient writers have inferred a set of incorrect rules regarding the nature of complete sentences (Kagan, 1980).

Lamb (1977) studied sentence errors: comma splices and fused sentences. Her analysis of student writing led to six logical patterns which could be accountable for students' production of these sentence errors. She proposed that many students formulate erroneous theories of sentence structure and punctuation based on spoken language experience or on misleading definitions.

Lamb's (1977) analysis was not a controlled study. Lamb presented the sentence types and examples from student compositions; she did not list percentages for the types or explain her procedures. Kagan (1980) presented data and statistical support for findings; however, she did not examine the actual writing of students. She gave the students a run-on sentence and

sentence fragment test. Both Lamb (1977) and Kagan (1980) studied college students to determine error patterns. The present study of sentence errors related the work on syntactic structures by Kagan and the work on logical and meaning patterns by Lamb to the written products of secondary school students.

Developmental Writing and the Measurement of Syntactic Development

Research in developmental writing is a very promising field. Barritt and Kroll (1978) noted that one of the most fruitful ways to understand any mature mental activity is to study the growth of that process in a child. "Only when we have charted the genesis and development of an intellectual activity do we approach complete understanding of the 'behavior' in mature human beings" (p. 50). The developmental approach to writing research posits underlying cognitive structures to explain observable actions.

Much of the work in developmental writing has been done with young children (C. Chomsky, 1970, 1971; Graves, 1975, 1979a, 1979b; Petty, 1980). C. Chomsky (1971) explored the rule-governed, systematic, and logical behaviors demonstrated by young children in their early writing, especially in their "invented spellings." C. Chomsky also contended that writing develops before

reading and that instruction should proceed in that order. Goodman and Burke (1980) reviewed work on the developmental reading and writing of young children and proposed that reading and writing develop in a parallel fashion. Graves (1975, 1979a, 1979b) observed young children's composing behaviors in classroom situations and analyzed writing samples. He drew conclusions about the motivations of young children for writing and about their concepts of aspects of the writing process such as revision. He concluded that the developmental level of the child is the best predictor of writing process behaviors, and therefore transcends the importance of environment, materials, and methodologies in influence on children's writing (Graves, 1975).

Clay (1979) observed 5-year-old children and examined their writing samples. She described children's writing as a developmental language system and suggested that many "errors" are actually signs of progress reflecting developing rules of language or ambitious attempts to communicate meanings.

Hunt's (1965) findings indicated that mean words per T-unit tend to increase with age. Hunt studied student writers at three grade levels and skilled adult writers, authors for The Atlantic and Harper's. Hunt concluded that mean T-unit length was a more reliable

index of growth in syntactic ability than orthographic sentence length, clause length, or subordination ration.

O'Donnell et al. (1967) studied the syntactic development of students at three grade levels in elementary school. His findings about developmental tendencies in mean T-unit length supported Hunt's work.

In 1970, Hunt studied syntactic maturity through the use of a rewriting passage as opposed to the free-writing used in the earlier study. He studied grades 4, 6, 8, 10, 12, average and skilled adult writers. He found the same developmental tendencies, although the mean T-unit length was much lower for all groups on the rewriting task.

Hunt's (1965, 1970) work in establishing procedures for measuring syntactic maturity is very well known and has been supported by other investigators (Blount, Johnson, & Frederick, 1968; Braun & Klassen, 1973; O'Donnell et al., 1967; Stewart, 1978; Veal, 1974). Hunt's findings led to the formulation of methodology, specifically sentence-combining, which aims to develop students' abilities to manipulate syntax in efforts to improve overall quality of writing (Mellon, 1969; O'Hare, 1973; Strong, 1973). Also Hunt's findings have been used as "norms" to measure growth in syntactic development in numerous methodological studies of

sentence-combining (Maimon & Nodine, 1978; Mellon, 1969; O'Hare, 1973; Stotsky, 1975).

In 1977, Hunt reviewed studies on measuring syntactic development done since his 1965 study and presented new research on his own. He reaffirmed his belief in the procedures developed in the earlier study and cited new applications of sentence-combining to other fields, such as instruction in English as a second language (Burruel, 1974#. Very recently, efforts have been made to use sentence-combining to enhance reading comprehension (Straw, 1979) because the development of ability to use various syntactic structures in writing may carry over to an understanding of these structures when they are encountered in reading.

Loban (1976), in an extensive longitudinal study of language development, used the communication unit, which is essentially the same as Hunt's T-unit, to study development in speech and writing. His findings about syntactic development confirmed those of Hunt's (1965).

Other studies dealing with the development of writing abilities include those done by Britton et al. (1975) and Smith (1980). Rubin and Piche (1979) studied developmental writing through an analysis of the ways students and adults adapt syntactic elements and persuasive strategies for different audiences.

development in young children. In addition, Cooper and Courts (1980), Odell (1977), and Odell and Sage (1978) proposed categories of cognitive strategy use associated with growth in writing maturity.

There have been few studies relating syntactic development to errors that accompany growth in syntactic ability. Maimon and Nodine (1978) studied college students whose syntactic development was measured before and after their participation in a short course in sentence-combining. Maimon and Nodine found the incidence of sentence production errors to be related to growth in syntactic maturity. They pointed out that when Hunt (1965) developed his original T-unit formula, he excluded sentence errors like sentence fragments. Stewart and Grove (1979) compared change in certain syntactic maturity factors and change in selected skills in the mechanics of writing. To gain a greater understanding of writing and how it develops, the present study consisted of a description of two types of sentence production errors found in the writing of middle and high school students and provided for a discussion of the relationship between these errors and syntactic growth.

Mode of Discourse Effects on Syntactic Development

Generally, the modes of discourse are identified as the forms of discourse or the four kinds of written prose: description, narration, exposition, and argumentation. From classical rhetorician to modern researchers, modes or types of discourse have been identified and, of course, designations differ. Britton et al. (1975) chose the term "functions" to describe the types of writing found in their studies of school writing. Bramer (1970) maintained that all of the modes of discourse are subdivisions of persuasion. Moffett (1968) presented a way of classifying discourse based upon the relations among a speaker (first person), a listener (second person), and a subject (third person). His modes of discourse reflect varying distances of time and space between the speaker and the intended audience, and consist of reflection, conversation, correspondence, and publication.

One of the most significant recent approaches to the notion of modes of discourse is the one presented by Kinneavy (1971), who proposed that reasons for the existence of each mode of discourse can be found in the human uses of language and the purposes to which this language is put. Kinneavy used the term "aims" of discourse and identified these aims based on four elements

of communication: the speaker or writer (the encoder), the audience or reader (the decoder), the outer world (the reality), and the text itself (the message). Lloyd-Jones (1977) presented categories consisting of explanatory discourse (subject-oriented), expressive discourse (discourser-oriented), and persuasive composition discourse (audience-oriented). Current theorists generally stress process-centered categories in describing writing and prefer the audience-subject-purpose concept rather than the more static concept of mode of discourse. But, as Kinneavy (1971) argued, the modes are important as the means by which one attempts to accomplish a given purpose or aim.

Modes of discourse have been used not only to describe and classify types of writing but also for writing instruction. Practical style books and composition texts generally pay a great deal of attention to the modes of discourse. D'Angelo (1976) noted, as did Perron (1977), that most discourse consists of a combination of modes, and stated that the use of modes for writing instruction can, at its worst, lead to mere formalism, with undue emphasis on static conventions, rather than a more proper emphasis on the processes of discourse. At its best, an emphasis on mode in writing instruction forces one to attend more closely

to difference in rhetorical purpose, attitudes, values, and audience.

Some researchers identified significant changes in students' writing when assignments were in different modes. Seegars' (1933) study was conducted with elementary school children who wrote essays using the four traditional forms of discourse. Their papers were then examined to determine the relative number and kinds of dependent clauses used as a result of writing in the various modes. The study concluded that the form of discourse did have a definite influence on the kind of clause structure used. Seegars suggested that students may gain facility in the use of various kinds of sentence structure by being asked to write in different modes. He also suggested that in assigning and grading papers, teachers should consider the mode of discourse.

A number of recent studies have examined the effect of situational factors such as mode of discourse on syntactic complexity in writing. San Jose (1972) and Perron (1977) examined the effect of mode of discourse on the syntactic complexity of fourth-graders, and third-, fourth-, and fifth-graders, respectively. In both studies, mean T-unit length was greatest in argument, followed by exposition, narration, and description. Rosen (1969) found that 15- and 16-year-old subjects

produced longer T-units in referential writing than in expressive writing. Crowhurst and Piche (1979) found that T-unit length was significantly greater in argument than in narration at both grades 6 and 10, and also that T-unit length did not increase significantly between grades 6 and 10 in the mode of narration.

Crowhurst (1980) found that teachers' quality ratings were highest for syntactically more complex papers in the mode of argument but not in the mode of narration. She proposed that when individuals write persuasive or argumentative discourse, they are engaging in an activity which inherently requires the logical interrelationship of propositions. This results in T-units which are lengthened by the subordination of clauses and less-than-casual elements. Crowhurst (1980) and Crowhurst and Piche (1979) concluded that argument or persuasion places greater demands on writers to make use of their syntactic resources than does narration, and that there is a positive relationship between effective argumentative discourse and the ability to relate propositions syntactically.

Crowhurst (1980) found that there was little relationship between syntactic complexity and quality ratings in the mode of narration at the three grade levels she studied. In fact, at grade 12, narrations of low

complexity were judged by teachers to be qualitatively superior to narrations of high complexity. This finding is consistent with observations made by Hunt (1965). Hunt calculated the mean T-unit length for two stories by Hemingway and one by Faulkner and found that the scores for the Hemingway stories were 9.41 and 14.44, and for the Faulkner story, 22.62. Hunt's eighth-graders produced writing more syntactically complex than Hemingway's. The scores illustrate the fact that syntactic complexity varies widely in narratives of recognized quality.

The present study was designed to examine the effect of mode of discourse on the syntactic complexity of compositions written by 7th-, 9th-, and 11th-graders and to determine whether there were increases in syntactic complexity between 7th and 9th grade and between 9th and 11th grade. The two modes of discourse chosen for this study were argument or persuasion, and description. These were selected because description was the least syntactically complex and persuasion was the most syntactically complex, in the studies of San Jose (1973) and Perron (1977); therefore, it was proposed that maximum difference between modes would be exhibited. Grades 7, 9, and 11 were selected with the expectation that growth between grades 7 and 9 would be greater than

that between grades 9 and 11,corresponding with the spurt in syntactic development which apparently occurs during the junior high school years (Loban, 1976; Palermo & Malfese, 1973).

CHAPTER 3

METHODS AND PROCEDURES

Sample

The students whose writing samples provided the data for this study were enrolled in two high schools and one middle school in a large metropolitan school district. A total of 295 students in four 7th-grade classes (95 students), four 9th-grade classes (104 students), and four 11th-grade classes (96 students) each wrote two compositions. This provided 590 writing samples,which were analyzed for the purposes of this study. Two of the classes at each grade level were identified as the high developmental group, and two classes at each grade level were identified as the average developmental group. Explanations of the terms high and average, as they apply to the classes in this study, are contained in the Definition of Terms section, Chapter 1.

This study does not have as its aim the identification of differences in writing development due to ethnic group membership; however, information about the ethnic composition of the groups of students whose writing samples were analyzed in this study is presented

in Table 1. All students designated Hispanic who participated in this study were native-born Americans.

Table 1

Ethnic Composition of Grade Level Groups in Sample

	Grade					
	7		9		11	
Ethnicity	N	%	N	%	N	%
Anglo	43	45.26	48	46.15	52	54.17
Black	43	45.26	39	37.50	34	35.42
Hispanic	8	8.42	16	15.38	6	6.25
Asian	1	1.05	1	0.96	4	4.17

Writing Assignment Items

The writing assignment items used in this study were selected from those developed for the 1973-1974 National Assessment of Educational Progress (NAEP). The writing items for the NAEP were developed by the Educational Testing Service and then subjected to extensive reviews by subject-matter specialists. The items were administered, before their inclusion in the NAEP, to probability samples, and, in the NAEP itself, to approximately 2,500 students (NAEP, 1980, p. v). The three items used in this study were also used in the Texas Assessment Project (1978). In the present study the item chosen for descriptive writing was administered to all three grade

level groups (Appendix A). Two items were chosen to provide for persuasive writing. The two assignments were used as they were used in the NAEP and in the Texas Assessment Project. In these assessments, the item in which the writer is asked to write to the school principal (Appendix B) was administered to 13-year-olds, and the item asking the writer to write to apply for a job (Appendix C) was administered to the 17-year-olds. In the present study, the 7th and 9th graders wrote on the school principal items (Appendix B), and the 11th graders wrote on the job letter item (Appendix C).

Procedures for the Collection of Data

The data for this study were collected during a 2-month period in the first semester of the school year, 1980-1981. Each group of students wrote in response to the descriptive item and, within 1 week, wrote in response to the persuasive item.

In each administration, the students received copies of the assignment items. They were told to write their compositions on regular notebook paper in ink or pencil. The directions and the writing assignment were read to the students as they read the assignment silently. The additional instructions in Appendixes D, E, and F were read to the students to help them get started. The instructions encouraged the students to persuade or to

describe so that a true demonstration of the students' abilities to write in the two modes would be exhibited. Students were told that no help could be provided by the administrator or their teacher. They were asked to do their best writing, but were told that the assignment was not a test. This was done to lessen writing anxiety.

The reference to spelling in the instructions (Appendixes D, E, and F) was made because in a pilot testing of the items with other students, the seventh-graders spent so much time and effort on spelling that it seemed to distract them from the writing task. Students were allowed one class period, approximately 50 minutes, to complete the task.

Procedures for Analysis of the Data

The analysis of the data for this study consisted of two parts. The first part was a study of the relationship among syntactic maturity, grade level, sentence error rate, and within-grade developmental level. The second part of the analysis consisted of a descriptive error analysis of two types of sentence production errors, specifically sentence fragments, and run-on sentences.

Part 1

Length of composition. Since a positive relationship between composition length and development in writing has frequently been noted (Diederich, 1961; Gebhardt, 1978; Richardson, Calnan, Essen, & Lambert, 1976; Smith, 1980; Stewart & Grove, 1979), the first step in this study was the counting of the words in each composition and the calculation of mean number of words per composition. The word counts were done by this investigator using the criteria developed by O'Hare (1971) which are listed below.

All words were counted; all compound nouns written as one word were counted as one word. Compound nouns written as two words and hyphenated word pairs were counted as two words. Phrasal proper names were counted as one word. Dates like June 21 and July 2 were counted as two words. Contractions like "he'd" or "shouldn't" were counted as two words. After the words were counted, the mean lengths of the compositions by grade level, by mode of discourse, and by developmental level were determined.

Syntactic complexity--words per T-unit (W/TU). All of the writing samples were segmented into T-units, and mean W/TU was determined for each paper. A T-unit is an independent clause (main clause) plus whatever subordinate

clauses or phrases that accompany it. Mean W/TU was determined for each paper. In simple terms, a T-unit is the smallest group of words in a piece of writing that could be punctuated as a sentence. The T in T-unit stands for terminable. Grammatically, a T-unit could be ended by a period or any other terminable punctuation mark. The following example (Spandel & Stiggins, 1980), p. 27) illustrates the T-unit concept. This passage contains only one terminable mark of punctuation as written.

> I yelled at my cat Manfred and he ran away, but he came home when he got hungry.

The passage actually contains three T-units:

> . I yelled at my cat Manfred
> . and he ran away
> . but he came home when he got hungry.

Spandel and Stiggins (1980) pointed out that each of the T-units could be punctuated as a sentence, and they stressed, as did Hunt (1965, 1970) that T-unit analysis is independent of punctuation. A writer may or may not punctuate T-units as sentences.

Hunt (1965) noted that it would be safe to think of T-units as the shortest grammatically complete sentences that a passage can be cut into without creating fragments. He cautioned those identifying T-units to remember that two main clauses must be counted as two T-units.

Hunt (1977) used the following passage to illustrate the methodology for determining mean W/TU. He presented this passage written by a fourth grader.

> I like the movie we saw about Moby Dick the white whale the captain said if you can kill the white whale Moby Dick I will give this gold to the one that can do it and it is worth sixteen dollars they tried and tried but while they were trying they killed a whale and used the oil for the lamps they almost caught the white whale. (pp. 92-93)

Hunt (1977) segmented the passage into the following six T-units. The numbers indicate the beginning of a T-unit, and the slash marks indicate the beginning of a clause.

> 1 I like the movie/we saw about Moby Dick the white whale
> 2 the captain said/if you can kill the white whale Moby Dick/I will give this gold to the one/that can do it
> 3 and it is worth sixteen dollars
> 4 they tried and tried
> 5 but while they were trying they killed a whale and used the oil for the lamps
> 6 they almost caught the white whale. (p. 93)

Hunt (1977) noted that the T-units above are grammatically complete sentences, regardless of the fact that one begins with "and" and another with "but." They are also the shortest stretches of wordage that the passage can be cut into without creating some fragment. They cannot be reduced further; each contains only one main clause.

Hunt (1977) pointed out that if the first of these two pieces is cut, one of the pieces would be a fragment.

I like the movie (grammatically a sentence)
we saw about Moby Dick, the white whale
(grammatically a fragment)

In order to arrive at mean W/TU for the passage above, one counts the total number of words (in this case 68) and divides by the number of T-units (in this case 6) giving a score of 11.3. The score for any other passage could be arrived at in the same way.

Hunt (1965, 1970, 1977) and O'Donnell (1967) indicated that mean W/TU tends to increase with age and skill of the writer. They both studied student writers at three grade levels, and Hunt included skilled adult writers, authors for The Atlantic and Harpers. Hunt and O'Donnell concluded that mean T-unit length was a more reliable index of growth in syntactic ability than orthographic sentence length, clause length, or subordination ratio.

To segment the composition into T-units, Hunt's instructions about measuring words per T-units were used. In addition, Mellon's (1969) instructions concerning the treatment of sentence fragments in T-unit counts were used in this study. Orthographic sentence fragments were counted as part of the T-unit to which they belonged. Fragments resulting from the omission of a single word counted as T-units. Other fragments were discarded as in the Hunt (1965, 1970), Mellon (1969),

and O'Hare (1973) studies. However, since one of the purposes of this study was an analysis of sentence fragments, sentence fragments were considered orthographic fragments if they were appositives. Neither Hunt (1965, 1970), Mellon (1969), or O'Hare (1973) discussed whether or not they counted appositive fragments as part of the preceding sentence. In this study, these fragments were counted as part of the T-unit to which they belonged.

This investigator analyzed every paper for T-unit length. In addition, a random sample of 60 of the papers was selected for analysis by four other investigators. All investigators were secondary-school English teachers. The mean number of years of experience in teaching English was 9.

The investigators participated in a 3-hour training session conducted by this investigator. The training consisted of a discussion of the T-unit concept, a demonstration of the process of identifying T-units, and practice with student papers. The practice was done with papers not involved in this study. The teachers discussed their work on the T-units as they worked on these practice papers. They worked until they came to consensus on most of the papers. Each of the teachers received copies of articles by Hunt (1977) and by

Spandel and Stiggins (1980), which explained T-unit segmentation and gave examples. The articles were read and discussed by the investigators.

After the training was completed, each investigator received copies of the 60 papers which had been numbered 1-60, a list of instructions (Appendix G), and a sheet of paper numbered 1-60. The investigators were asked to write the number of T-units found on each paper beside the number of that paper on the numbered sheet. Each investigator worked independently. Hunt (1965) noted that if investigators receive clear instructions, they can achieve a higher degree of agreement on T-unit segmentation. In this study, three of the investigators agreed with the primary investigator on the number of T-units in all 60 of the papers. The fourth investigator agreed with this investigator on 57 of the papers. The percentage of agreement between the four investigators and the principal investigator was 99%.

Error rate. Two types of sentence errors were chosen for analysis in this study. These two types of errors, sentence fragments and run-on sentences, were chosen for analysis in this study because they are common errors (Kagan, 1980; Shaughnessy, 1977) and because they

probably reflect students' efforts to consolidate T-units. Several researchers, Maimon and Nodine (1978) and Stewart and Grobe (1978), called for a study of sentence errors in relation to growth in syntactic maturity.

Run-on sentences and sentence fragments were identified in each paper. The number of errors in each paper was divided by the number of T-units in each paper to arrive at a ratio of run-on sentences per T-unit (R/TU) and sentence fragments per T-unit (S/TU). The ratio of R/TU was determined by counting the number of T-units in run-on sentences rather than just the number of run-on sentences in the paper. This procedure was used because if run-on sentences were simply counted instead of T-units in run-on sentences, a paper that was one long run-on sentence would have the same ratio of R/TU as a paper with one short run-on sentence.

A randomly-selected sample of 60 papers was submitted to four independent investigators. They were given the originals of the papers and a set of instructions (Appendix H). The papers were assigned to the investigators in sets which were later rotated because of the necessity, in this part of the analysis, for the investigators to read the originals of the papers. They were asked to make no marks on the papers, but to write run-on sentences and sentence fragments on an

accompanying sheet. Some of the papers contained no fragments or run-on sentences. The average percentage of agreement between the four investigators and the principal investigator was 96%.

Statistical analysis. Means and standard deviations were determined for each grade level, each within-grade developmental level, and each mode of discourse for the four dependent variables: composition length (W), words per T-unit (W/TU), T-units in run-on sentences per T-unit (R/TU), and fragments per T-unit (F/TU). A 2 (mode of discourse) X 3 (grade level) X 2 (within-grade developmental level) analysis of variance was done. Where a significant *F* ratio was obtained, Tukey's multiple comparison test was administered to determine significant differences. To determine relationships among the four dependent variables, simple correlations were done.

Part 2

Descriptive error analysis of run-on sentences and sentence fragments. The second part of this study consisted of a descriptive error analysis of the sentence fragments and run-on sentences in the written compositions of secondary school students. Each error was typed on another sheet to aid in its analysis. Sentence fragments

were typed with the sentences with which they belonged, if such sentences were present.

A total of 472 sentence errors were analyzed in the descriptive analysis. There were 113 run-on sentences in the 7th-graders' papers, 141 in the 9th-graders' papers, and 93 in the 11th-graders' papers, for a total of 347. There were 33 sentence fragments in the 7th-graders' papers, 55 in the 9th-graders' papers, and 37 in the 11th-graders' papers, for a total of 125 sentence fragments.

Some of the most important contributions toward an understanding of composing processes were made through a thorough analysis of errors in students' compositions without the use of preconceived categories of errors. Soven (1979), in a discussion of ethnography and the teaching of composition, stressed the benefits of research that avoids the use of a predetermined system of categories but instead organizes data on the basis of the conceptual framework of the subject. Other researchers, in the fields of written composition (Hayes & Flower, 1978) and in other fields (Glasser & Strauss, 1967) discussed the value of research that does not force data into categories but recognizes categories that emerge from a thorough and systematic examination of the data. Categories from several sources

were used in the descriptive analysis undertaken in this study, but patterns were added from an analysis of the data.

Run-on sentences. From an analysis of the run-on sentences, five aspects of the students' use of language and the conventions of writing were explored. First, the words in the first T-unit in each run-on sentence were counted, and the words in subsequent T-units were counted. The mean words per T-unit was determined for each group. This was done to determine the position in a sentence where errors may occur. Daiute (1981) proposed that the reason for some syntactic errors is an overloading of the short-term memory. She presented data from students' written products to support the idea that the error is likely to appear late rather than early in the sentence. On the other hand, Kagan (1980) found that a short first sentence fused to a long second sentence was more likely to be mistaken by students for a correct sentence. The present study sought to add information about the position of sentence errors to that presented in the Daiute (1981) and Kagan (1980) studies.

Second, the analysis of the data indicated that run-on sentences were shorter at each higher grade level. A count was made of the number of T-units in each run-on sentence. Grade level means, medians, and ranges were

determined. Third, a comparison was made between mean words per T-unit in the run-on sentences and in the whole composition.

Fourth, a study was made of the ways students used to join sentences when run-on sentence errors were made. Methods used to join sentences together were categorized as fusions (no punctuation), comma splices, and conjunction/no comma. The instances in which only two T-units were joined with a conjunction/no comma were not counted as run-on sentences in this study. If a conjunction/no comma was used to join T-units in a sentence with three or more T-units, the error was counted.

Fifth, from a study of the run-on sentences, it was determined that many of the T-units began with pronouns. A count was made of T-units beginning with pronouns, and this count was compared with a count of pronouns beginning correctly punctuated sentences. The most common pronouns associated with the incorrectly fused T-units were identified.

In addition to the analysis of the students' use of language and the conventions of written composition, a system was used to categorize errors based on Lamb's (1977) exploratory error analysis of the writing of college students. Lamb proposed that run-on sentences reflect the need students have to link closely-related

ideas. She developed a list of six patterns representing these logical relationships. These patterns were used to analyze the run-on sentences in this study, and, since Lamb studied college students and the students in this study were younger, developmental aspects were discussed. Additional categories were identified and described from an analysis of the data in this study.

Lamb's (1977) logical patterns are listed and described below.

> Pattern 1 consists of sentences joined by adverbs like "however," "indeed," or "therefore," or by prepositional phrases like "at this time," or "in addition."
>
> In Pattern 2 the first section of a comma splice or fused sentence presents data, and the second section draws a conclusion from this data. Often, the idea of "therefore" is present but not expressed.
>
> In Pattern 3 the second section of a comma splice or fused sentence supports or gives reasons for the first section. The idea of "because" or "since" is present but not expressed.
>
> In Pattern 4 a negative statement is followed by a positive statement. Once a student writes what did not happen, he tells what did.
>
> In Pattern 5 comma splices and fused sentences result from descriptions of steps in a process. Often the connecting idea, expressed or unexpressed, is "then."
>
> In Pattern 6 a sentence will be added to explain or expand upon a word in the first part of the comma splice or fused sentence. (p. 3)

Sentence fragments. The sentence fragments were categorized according to the syntactic structure

categories used by Kagan (1980) in a sentence fragment test used to provide for an error analysis. The categories are listed below. Additional categories were determined from an analysis of the data.

N + PARTICIP (noun + participial phrase)

N + REL CL (noun + relative clause)

N + SUB CL (noun + subordinate clause)

N + INFIN PH (noun + infinitive phrase)

V + PARTICIP (verb + participial phrase)

V + DO (verb + direct object)

V + DO + PREP PH (verb + direct object + prepositional phrase)

V + SUB CL (verb + subordinate clause)

PARTICIP (participial phrase)

REL CL (relative/adjective clause)

2 PREP (2 prepositional phrases)

SUB CL (subordinate clause)

N + ADJ (noun + adjective)

PREP (1 prepositional phrase)

COMP VERB (compound verb)

Frequencies and percentages of errors in each category by grade level were determined. The most common patterns were identified and described.

The analysis of the sentence fragments indicated that the sentence fragments were more often related to

the preceding sentence than the following one. This aspect was explored, and the functions of the sentence fragments in relation to the sentences around them were determined. All of the information about the sentence errors is discussed in the context of the students' developing syntactic abilities and concepts of a "sentence."

CHAPTER 4

RESULTS

Part 1

The first part of this study consisted of an analysis of the relationships among syntactic complexity, sentence error rate, and mode of discourse. Results related to the following research questions are addressed in Part 1.

1. What is the effect of mode of discourse on syntactic complexity, length of composition, and incidence of run-on sentences and sentence fragments?

2. Are there grade level differences in syntactic complexity, length of composition, and incidence of run-on sentences and sentence fragments?

3. Are there within-grade level differences in syntactic complexity, length of composition, and incidence of run-on sentences and sentence fragments?

4. Is growth in syntactic complexity associated with changes in rates of sentence production errors?

5. Are there relationships among rate and type of sentence production errors, grade level, mode of discourse, and syntactic complexity?

The four dependent variables in this study were number of words in the composition (W), words per T-unit

(W/TU), number of T-units in run-on sentences per T-unit (R/TU), and fragments per T-unit (F/TU). The rationale for using the ratio of T-units in run-on sentences to total T-units instead of simply the ratio of run-on sentences to total T-units was explained in the Procedures for Analysis of Data section, Chapter 3. Briefly, this approach was used because simply counting numbers of run-on sentences does not account for the extent of run-on sentence errors in writing. If run-on sentences were simply counted and the ratio to T-units determined, a composition which was one long run-on sentence would receive the same score as one which was correct except for one run-on sentence. Tables 2, 3, and 4 summarize means and standard deviations for the four dependent variables by grade level (Table 2), mode of discourse (Table 3), and within-grade developmental levels (Table 4).

A 2 (mode of discourse) x 3 (grade level) x 2 (developmental level) analysis of variance was done for each of the four dependent variables. The analysis for length of composition (W) is summarized in Table 5. The analysis yielded a significant main effect for mode of discourse, $\underline{F}$ (1,578) = 159.05, $\underline{p} < .0001$, grade level $\underline{F}$ (1,578) = 89.48, $\underline{p} < .0001$, and developmental level $\underline{F}$ (1,578) = 47.99, $\underline{p} < .0001$. Tukey's HSD test for

Table 2

Means and Standard Deviations for Number of Words (W), Words per T-unit (W/TU), T-units in Run-on Sentences per T-unit (R/TU), and Sentence Fragments per T-unit (F/TU) with F-Ratios for Grades 7, 9, and 11

Variable	Grade 7 n = 190		Grade 9 n = 208		Grade 11 n = 192		F-Ratio
	M	SD	M	SD	M	SD	
W	75.46	51.53	99.79	45.81	141.04	78.75	89.48*
W/TU	12.43	11.45	13.66	4.28	13.30	3.57	1.74
R/TU	0.23	0.33	0.20	0.27	0.08	0.17	18.85*
F/TU	0.04	0.12	0.05	0.12	0.02	0.07	3.21

*Significant beyond the .0001 level.

Table 3

Means and Standard Deviations for Number of Words (W), Words per T-unit (W/TU), T-units in Run-on Sentences per T-unit (R/TU), and Sentence Fragments per T-unit (F/TU) with F-Ratios for Persuasive and Descriptive Modes

Variable	Descriptive (n = 295)		Persuasive (n = 295)		F-Ratio
	M	SD	M	SD	
W	130.60	77.58	80.16	38.72	159.05*
W/TU	11.85	3.80	14.43	9.39	19.11*
R/TU	0.20	0.29	0.14	0.25	8.66
F/TU	0.03	0.09	0.04	0.12	0.05

*Significant beyond the .0001 level.

Table 4

Means and Standard Deviations for Number of Words (W), Words per T-unit (W/TU), T-units in Run-on Sentences per T-unit (R/TU), and Sentence Fragments per T-unit (F/TU) with F-Ratios for High and Average Levels

Variable	High (n = 280)		Average (n = 310)		F-Ratio
	M	SD	M	SD	
W	199.01	72.35	93.06	56.38	47.99*
W/TU	13.61	3.91	12.72	9.31	2.71
R/TU	0.12	0.21	0.22	0.31	28.36*
F/TU	0.02	0.06	0.05	0.13	17.67*

*Significant beyond the .0001 level.

Table 5

Analysis of Variance Summary Table for Length of Composition

Source	df	Mean Square	F	p
Between	11	105071.27		
Mode	1	398094.34	159.05	.0001
Grade	2	223966.91	89.48	.0001
Levels	1	120128.17	47.99	.0001
Mode-Grade	2	57208.63	22.86	.0001
Mode-Level	1	53465.30	21.36	.0001
Grade-Level	2	5830.83	2.33	.0983
Mode-Grade-Level	2	5041.72	2.01	.1343
Within	578	2502.97		
Total	589	4418.50		

multiple comparisons indicated that there were significant differences between the means of the two modes, the two developmental levels, and the three grade levels, $p < .05$. Longer compositions were written in the descriptive mode and in the high developmental group, $p < .05$. There were significant differences, $p < .05$, between each combination of grade level groups, 7 and 9, 9 and 11, and 11 and 7, $p < .05$. The longest compositions were written by the 11th-grade students; the next in length were the compositions of 9th-grade students;

and the shortest papers were written by 7th-grade students. (See Tables 2, 3, and 4 for means and standard deviations by modes, grade levels, and within-grade developmental levels.)

The interaction was significant between grade and mode, F (2,578) = 22.86, $p < .0001$. An analysis of simple effects indicated that there were significant differences among the grade levels in the descriptive mode F (2,292) = 46.82, $p < .0001$. Tukey's HSD test yielded significant differences between grades 7 and 11 and 9 and 11, $p < .05$ but no significant differences between grades 7 and 9. Another analysis of simple effects indicated that there were significant differences among the grade levels in the persuasive mode F (2,292) = 47.72, $p < .0001$. Tukey's HSD test yielded significant differences between all three grade level combinations, 7 and 9, 9 and 11, and 7 and 11, $p < .05$. The 11th-grade papers were the longest, the 9th-grade papers were next in length, and the 7th-grade papers were shortest. The interaction between mode of discourse and grade level is presented in Figure 1.

The interaction was also significant for modes and levels, F (1,578) = 21.36, $p < .0001$. An analysis of simple effects revealed that there were significant differences between high and average groups in the

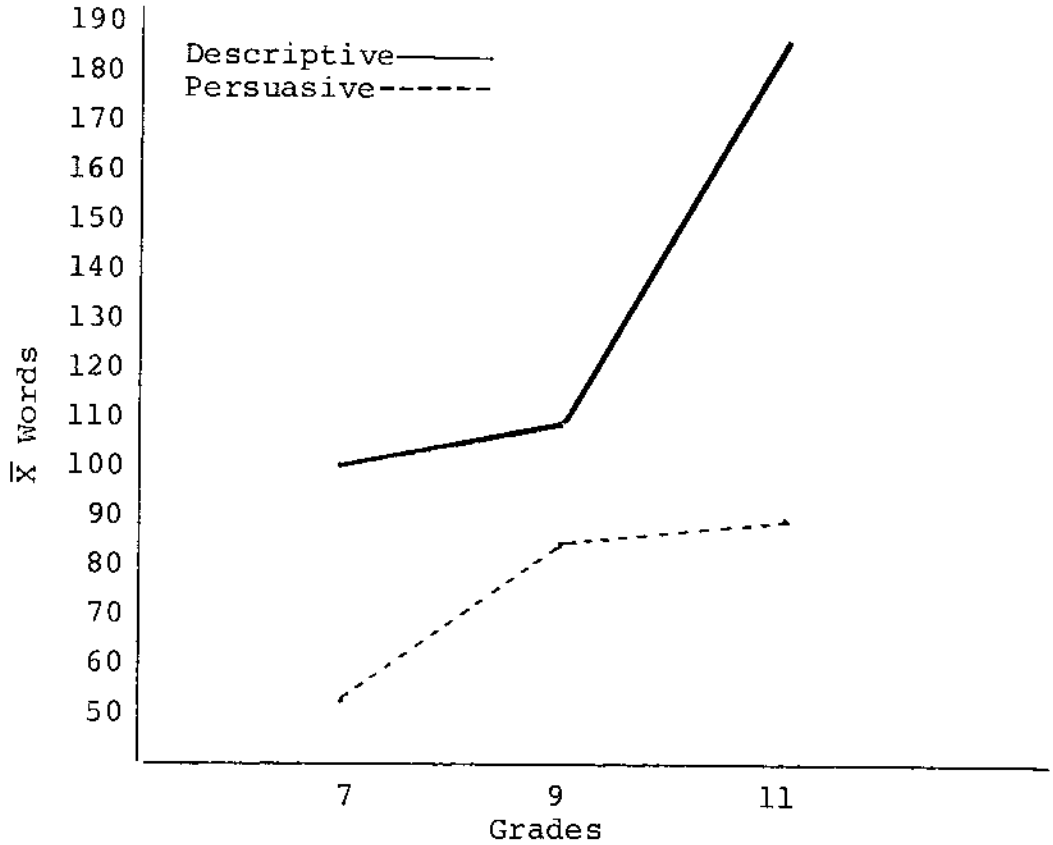

Figure 1. Length of Composition

descriptive mode, F (1,292) = 25.55, p < .0001. In the descriptive mode, the high group produced significantly more words than the average group. In the persuasive mode there were no significant differences between high and average groups. The interaction between mode and developmental level is presented graphically in Figure 2.

The 2 (mode of discourse) x 3 (grade level) x 2 (developmental level) analysis of variance for words per T-unis is summarized in Table 6. The analysis

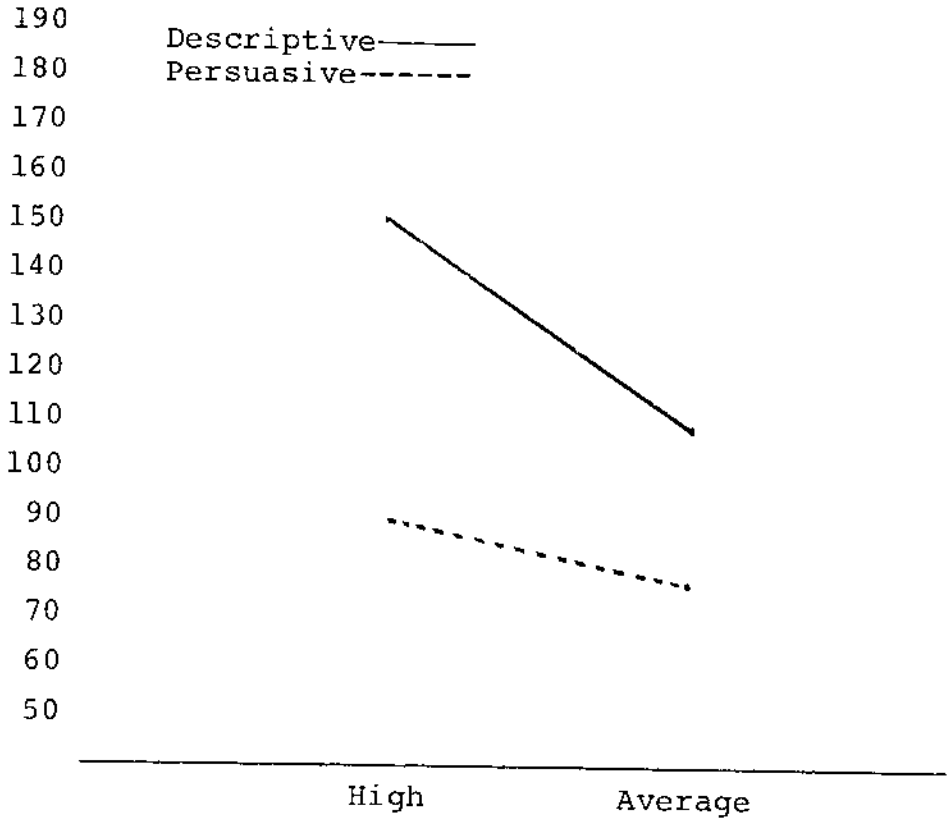

Figure 2. Interaction between mode and developmental level.

yielded a significant main effect for mode of discourse, F (1,578) = 19.11, p < .0001. Tukey's HSD multiple comparison test indicated that there were significantly more words per T-unit in the persuasive mode than in the descriptive mode, p < .05.

The interaction was significant for mode of discourse and grade level F (2,578) = 16.63, p < .0001. Table 7 presents the means and standard deviations for W/TU by grade levels, modes, and developmental levels. Grade level differences were more marked in the descriptive mode. An analysis of simple effects revealed that there

Table 6

Analysis of Variance Summary Table for Words per T-Unit

Source	df	Mean Square	F	p
Between	11	285.12		
Modes	1	928.12	19.11	.000
Grades	2	84.34	1.74	.177
Levels	1	131.40	2.71	.101
Modes-Grades	2	807.65	16.63	.000
Modes-Levels	1	134.92	2.78	.096
Grades-Levels	2	67.08	1.38	.252
Modes-Grade-Level	2	11.89	0.24	.783
Within	578	48.56		
Total	589	52.98		

were significant differences among grade levels in the descriptive mode. The results of this analysis are summarized in Table 8. This analysis yielded a significant main effect for grade level, F (2,292) = 47.64, $p < .0001$. Tukey's HSD multiple comparisons test indicated that there were significant differences between all three grade level combinations, 7 and 9, 9 and 11, and 11 and 7, $p < .05$. Papers in the 11th grade contained more W/TU than the 9th-grade papers, and the 9th-grade papers contained more W/TU than the 7th-grade

Table 7

Means and Standard Deviations for Words per T-unit (W/TU) by Mode of Discourse (Descriptive and Persuasive), Grade Level (7, 9, 11), and within Grade Developmental Levels (High and Average)

Mode	Grade 7 (n=190)		Grade 9 (n=208)		Grade 11 (n=192)		Average
	High (n=48)	Average (n=47)	High (n=49)	Average (n=55)	High (n=43)	Average (n=43)	
Descriptive							
M	10.54	8.77	12.07	11.15	15.99	12.95	11.86
SD	2.63	2.22	2.88	3.34	3.62	3.88	3.80
	n = 95		n = 104		n = 96		
	M = 9.66		M = 11.58		M = 14.31		
	SD = 2.58		SD = 3.15		SD = 4.04		
Persuasive							
M	14.56	15.87	15.56	15.89	13.15	11.58	14.43
SD	4.59	21.72	3.51	4.89	2.95	2.25	9.39
	n = 95		n = 104		n = 96		
	M = 15.19		M = 15.73		M = 12.28		
	SD = 15.54		SD = 4.27		SD = 2.69		
Average							
n	96	94	98	110	86	106	
M	12.55	12.30	13.81	13.52	14.57	12.27	
SD	4.23	15.76	3.64	4.79	3.58	3.23	

Table 8

Analysis of Variance Summary Table for W/TU, Descriptive Mode for Grades 7, 9, and 11

Source	df	Mean Squares	F	p
Between	2	522.5667	47.64	.0000
Within	292	10.9703		

papers. Developmental tendencies like those found by Hunt (1965) and O'Donnell et al. (1967) were present in papers written in the descriptive mode. The analysis of simple effects revealed that there were no significant differences among the grade levels in the persuasive mode. All papers were high in W/TU in the persuasive mode: 7th grade, 15.19; 9th grade, 15.73; and 11th grade, 12.28. The drop in the W/TU in the 11th-graders' papers could have been caused by the change in the items. The 11th graders wrote in response to a different persuasive item. The interaction between grade level and mode of discourse is presented graphically in Figure 3.

The 2 (mode of discourse) x 3 (grade level) x 2 (developmental level) analysis of variance for T-units in run-on sentences per total T-units is summarized in Table 9. The analysis yielded significant main effect

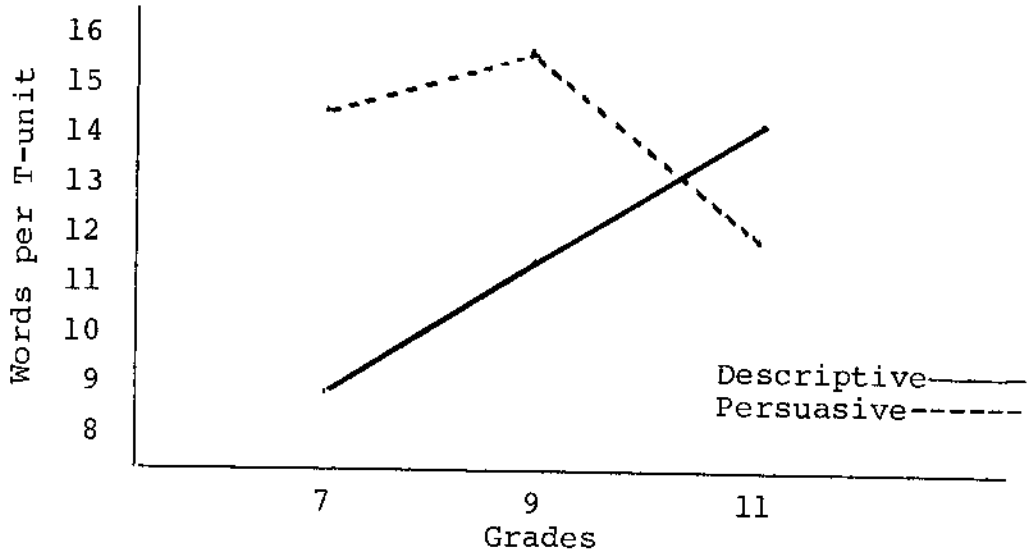

Figure 3. Words per T-Unit

Table 9

Analysis of Variance Summary Table for Run-on Sentences per T-Unit

Source	df	Mean Square	F	p
Between	11	0.62		
Modes	1	0.55	8.66	.0003
Grades	2	1.20	18.85	.0001
Levels	1	1.81	28.36	.0001
Mode-Grade	2	0.12	1.84	.1601
Mode-Level	1	0.14	2.12	.1460
Grade-Level	2	0.84	13.22	.0001
Mode-Level-Grade	2	0.01	0.22	.8042
Within	578	0.06		
Total	589	0.07		

for grade level, F (2,578) = 8.66, $p < .01$, and developmental level, F (1,578) = 28.36, $p < .0001$.

Tukey's HSD multiple comparison test indicated that there were significant differences, $p < .05$, between the two modes of discourse, between the two developmental levels, and between grades 7 and 11 and 9 and 11. There were no significant differences between grades 7 and 9. There were more errors in the descriptive mode, in the average developmental group, and in grades 7 and 9.

The interaction between grade level and developmental level was significant, F (2,578) = 13.22, $p < .0001$. An analysis of simple effects indicated that there were significant differences between the two developmental levels at each grade level, F (2,307) = 17.01, $p < .0001$. Tukey's HSD test indicated that each higher grade level had fewer run-on sentences. The interaction between grade level and developmental level is presented graphically in Figure 4.

The 2 (mode of discourse) x 3 (grade level) x 2 (developmental level) analysis of variance for fragments per T-unit is summarized in Table 10. The analysis yielded a significant main effect for developmental level, F (1,578) = 17.67, $p < .0001$. Tukey's HSD multiple comparison test indicated that there were

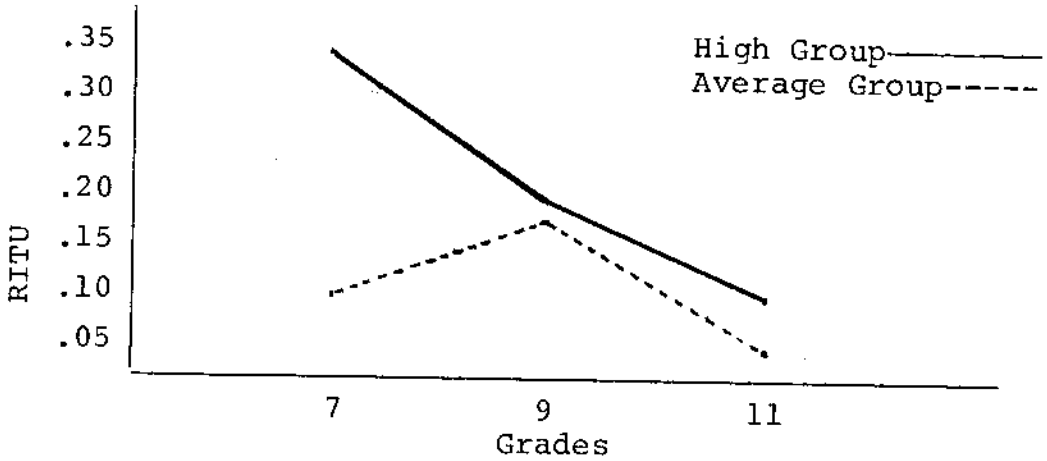

Figure 4. Run-on Sentences

Table 10
Analysis of Variance Summary Table
for Fragments per T-Unit

Source	df	Mean Square	F	p
Between	11	.04		
Modes	1	.00	0.05	.815
Grades	2	.04	3.21	.041
Levels	1	.20	17.67	.0001
Mode-Grade	2	.03	2.44	.088
Mode-Level	1	.03	2.70	.101
Grade-Level	2	.01	1.02	.360
Mode-Grade-Level	2	.04	3.84	.022
Within	578	.01		
Total	589	.01		

significant differences between grades 9 and 11, $p < .05$. Compositions from grade 9 contained significantly more fragment errors than papers from grade 11. Papers from the high developmental group contained significantly fewer fragment errors than those from the average developmental group. There was no significant difference between the two modes.

Table 11 gives the Pearson correlation coefficients for the four variables selected for study. No systematic relationship among the variables was indicated in most of the 24 correlations. No correlation was above $r = .54$. There was a low positive correlation between W/TU and F/TU, $r = .37$, when all grades were considered. In the seventh grade, there was a low positive correlation between W/TU and F/TU. At grades 9 and 11, there were low negative relationships, $r = -28$ and $r = -23$, respectively, between W/TU and R/TU.

Part 2

Descriptive Error Analysis

Barritt and Kroll (1978) noted that

> errors are clues to the system of organized rules and strategies that a student draws on to perform a composing task. Since one important research goal is to study the emergence of these strategies, error would seem to offer an important research tool. (p. 54)

Table 11

Simple Correlations for Variables
for Grades 7, 9, and 11

	W	W/TU	R/TU	F/TU
W				
All Grades		-.01	-.06	-.12*
Grade 7		-.12*	-.05	-.13*
Grade 9		-.05	.10	-.14*
Grade 11		.13	.09	-.05
W/TU				
All Grades			-.16*	.37*
Grade 7			.12	.54*
Grade 9			-.29*	.20*
Grade 11			-.23*	.11
R/TU				
All Grades				-.14*
Grade 7				-.16*
Grade 9				-.21*
Grade 11				-.09
F/TU				
All Grades				
Grade 7				
Grade 9				
Grade 11				

*Probability beyond .01.

Shaughnessy (1977) proposed that teachers might well begin teaching writing by trying to understand the logic of students' mistakes in order to determine at what point or points along the developmental path error should or can become a subject for instruction. One purpose of this study was to describe errors in students' sentence production and to note developmental differences as manifested by two types of sentence errors: sentence fragments and run-on sentences.

The following research questions were addressed in Part 2 of this study.

1. Are there syntactic structures that characterize students' sentence production errors?

2. Are there logical patterns that characterize students' sentence production errors?

3. What can be determined about students' acquisition of the use of punctuation associated with sentence and clause boundaries?

4. What can be determined from students' sentence production errors about their concepts of a sentence and its boundaries?

A total of 590 student compositions were analyzed for the purposes of this study. One-half of these compositions were in the descriptive mode, and one-half were in the persuasive mode. A total of 295 students

wrote the compositions for this study, 95 7th graders, 104 9th graders, and 96 11th graders.

A total of 472 sentence errors, 347 run-on sentences, and 125 sentence fragments was analyzed in this study. The error analysis yielded 33 sentence fragments in the 7th-graders' compositions, 55 in the 9th-graders' compositions, and 37 in the 11th-graders' compositions. There were 113 run-on sentences in the 7th-graders' compositions, 141 in the 9th-graders' compositions, and 93 in the 11th-graders' compositions. The errors by mode, grade level, and within-grade-level groups are presented in Table 12.

Ratios of errors by modes, grade level, and developmental level were discussed in Part 1 of this chapter. This section will be concerned more with the errors themselves than with the relationship among mode, grade level, and developmental level, but these relationships will be discussed when applicable.

In the student compositions analyzed for this study, run-on sentences were more common than sentence fragments. Of the 472 errors analyzed in this study, 73.52% were run-on sentences and 26.48% were sentence fragments.

Run-on sentences. One of the methods used to analyze the run-on sentences was to determine the place

Table 12

Numbers of Run-on Sentences and Sentence Fragments by Grade Level, Mode of Discourse, and Developmental Levels

	Run-on Sentences				Sentence Fragments			
	Descriptive	Persuasive	Total by Levels	Total by Grades	Descriptive	Persuasive	Total by Levels	Total by Grades
Grade 7								
High	37	8	45	113	14	3	17	33
Average	46	22	68		9	7	16	
Grade 9								
High	45	23	68	141	10	6	16	55
Average	53	20	73		20	19	39	
Grade 11								
High	15	11	26	93	3	0	3	37
Average	43	24	67		30	4	34	
Total by Modes	239	108		347	97	30		125

in the sentence where the syntactic error occurred. Kagan (1980) found that remedial writing students were more inclined to identify a fused sentence as a correct sentence when it consisted of a short sentence followed by a longer sentence. On the other hand, Daiute (1981) proposed that the syntactic error was more likely to occur later in the sentence because of an overload of short-term memory. To investigate this aspect of run-on sentences, the words in the first T-unit were counted and a mean was determined for each grade level. The words in the subsequent sentences were counted and a mean was determined. There was much variation in sentence length. The sentences ranged from 2 to 74 words long. The means by grade level were for the 7th graders, first sentence 9.63 and subsequent sentences 8.28; 9th graders, first sentence 10.69 and subsequent sentences 9.77; and 11th graders, first sentence 8.94 and subsequent sentences 8.76. First sentences were somewhat longer, but the difference was not great. The younger students did produce many short second sentences. Patterns associated with the students' use of short second sentences will be discussed later in this chapter in the section on logical patterns in run-on sentences.

The analysis of the data indicated that run-on sentences were shorter in the 11th grade; so as count

was made of the number of T-units in each run-on sentence. Grade level means and medians were determined. The median number of T-unit per run-on sentence in all three grade levels was 2, but there was a tendency for students to put fewer T-units in each run-on sentence at the highest grade level, grade 11, and in the higher developmental levels within each grade level. The mean number of T-unit per run-on decreased in the papers of the students at the highest grade level. Also, the percent of run-on sentences containing more than three T-units dropped in the 11th grade (see Table 13). Tables 13, 14, and 15 summarize information related to length of run-on sentences.

A comparison was made between the mean T-unit length of the run-on sentences and the mean T-unit length for the entire composition. The mean W/TU in the run-on sentences (see Table 12) for each grade level was less than the mean W/TU for the total composition. The W/TU means for the whole compositions for the 7th grade was 12.43; for the 9th grade, 13.66; and for the 11th grade, 13.30. The W/TU means in the run-on sentences were 8.78, 9.05, and 9.05 for grades 7, 9, and 11, respectively. The level of syntactic complexity for the whole compositions was greater than in the run-on sentences.

Table 13

Lengths of Run-on Sentences by Grade Level

	Mean T/RO	Range T/RO	Median T/RO	Mean W/TU in RO	Mean W/RO	% RO with more than 3 TU
Grade 7	2.90	2-12	2	8.78	25.46	16.81
Grade 9	2.76	2-10	2	9.05	24.98	16.31
Grade 11	2.54	2-6	2	9.05	22.99	9.68

Table 14

Lengths of Run-on Sentences by Ability Level

	Mean T/RO	Range T/RO	Median T/RO	Mean W/TU in RO	Mean W/RO	% RO with more than 3 TU
Average	2.92	2-12	2	9.18	26.79	13.46
High	2.47	2-7	2	13.16	32.50	10.07

Table 15

Lengths of Run-on Sentences by Mode of Discourse

	Mean T/RO	Range T/RO	Median T/RO	Mean W/TU in RO	Mean W/RO	% RO with more than 3 TU
Descriptive	2.62	2-12	2	10.12	26.46	8.74
Persuasive	2.59	2-7	2	10.71	27.74	14.72

Comma splices accounted for a larger percentage of the run-on sentence errors at each higher grade level. The younger students more often simply fused sentences together with no punctuation, or they used a conjunction and no punctuation. The papers of the 11th-grade students in this study contained many more comma splices than fused sentences. These students seemed to have determined that a sentence, although it might be joined to another, must have some sort of boundary marked by punctuation.

The methods used to coordinate T-units in the run-on sentences present in the writing samples were categorized as follows: fusion (no punctuation), comma splice, and conjunction/no comma. Table 16 presents the use of punctuation and conjunctions in the run-on sentences analyzed in this study. The figures in Table 16 represent the percent of errors at that grade level and developmental level by particular types. The incidence of fused sentences decreased in relation to comma splices in grades 9 and 11. Fusions accounted for 39.81% of the 7th-graders' run-on sentence errors, 27.82% of the 9th-graders' run-on sentence errors, and 12.23% of the 11th-graders' errors. On the other hand, comma splices accounted for 67.63% of the 11th-graders' run-on sentence errors, 38.31% of the 9th-graders'

Table 16

Punctuation and Conjunctions in Run-on Sentences

	Fusions		Comma Splices		Conjunction No Comma		Conjunction with Comma*		Therefore, However Type	
	N	%	N	%	N	%	N	%	N	%
Grade 7										
Average (n=150)	67	44.67	24	16.00	52	34.67	7	4.67	0	0.00
High (n=66)	19	28.79	38	57.58	5	7.58	4	6.06	0	0.00
Total (n=216)	86	39.81	62	28.70	57	26.39	11	0.05	0	0.00
Grade 9										
Average (n=140)	54	38.57	34	24.29	43	30.71	8	5.71	1	0.07
High (n=108)	15	13.89	61	56.48	26	24.07	6	5.56	0	0.00
Total (n=248)	69	27.82	95	38.31	69	27.82	14	5.65	1	0.04
Grade 11										
Average (n=109)	14	12.84	70	64.22	20	18.35	5	4.59	0	0.00
High (n=30)	3	10.00	24	80.00	1	3.33	0	0.00	2	6.67
Total (n=139)	17	12.23	94	67.63	21	15.11	5	3.60	2	1.44

*These are correct joinings of T-units with a comma and a conjunction. They were only counted here because they were part of multiple T-unit run-on sentences.

run-on sentence errors, and 28.70% of the 7th-graders' errors. Also, the incidence of conjunction only with no comma tended to decrease from grade 7 to grade 11 although there was a slight increase in this type in grade 9. In all three grade levels, there was a greater incidence of the use of comma splices in the high group and a lesser incidence of the use of fused sentences and conjunction/no comma errors. Information pertaining to incidence of comma splices and fusions is taken from Table 16 and summarized by grade level in Table 17.

Table 17

Fusions and Comma Splices by Grade Level

	Fusions		Comma Splices	
	N*	%**	N	%
Grade 7	86	39.81	62	28.70
Grade 9	69	27.82	95	38.31
Grade 11	17	12.23	94	67.63

*N = number of errors (fusion, or comma splice).

**% = % of total errors that were of a particular type (fusion, or comma splice)

In an analysis of the run-on sentences themselves and the types of words used in the errors, it was determined in this study that a large percentage of the T-units after the coordination error started with

pronouns. Personal pronouns were most often used. Table 18 summarizes this information along with the percent of the two most commonly used pronouns, "it" and "I." These figures do not include the use of the expletive, "it."

Table 18

Pronouns after Coordination Errors in Run-on Sentences

	with Pronouns	% Beginning with "It"	% Beginning with "I"
Grade 7 (n=216)	78.24	25.93	17.59
Grade 9 (n=248)	70.16	19.76	10.89
Grade 11 (n=140)	77.14	15.71	41.43

Hunt (1965) observed that younger writers use more personal pronouns in their writing than older writers do. The use of pronouns to start the second or third T-unit or a run-on sentence was prevalent in the run-on sentences analyzed in this study. To determine if this use was any higher than the use of pronouns to start correctly punctuated sentences, 360 sentences were randomly selected from the writing samples, 120 from each grade level. The percentage of correctly punctuated sentences beginning with pronouns is listed in Table 19.

Table 19

Percentage of Correctly Punctuated Sentences Beginning with Pronouns Including Percent Beginning with Personal Pronouns "It" and "I"

	% Beginning with Pronouns	% Beginning with "It"	% Beginning with "I"
Grade 7 (n=120)	65.83	17.50	30.00
Grade 9 (n=120)	60.83	15.83	19.16
Grade 11 (n=120)	48.33	9.16	25.00

The percentages are large when all sentences are considered but somewhat smaller than the run-on sentences. Also, the overall use of the pronoun to start sentences seems to decline as Hunt (1965) noted.

One of the purposes of this study was to examine students' run-on sentence errors to determine the presence of certain logical patterns proposed by Lamb (1977) and to describe other run-on sentence patterns that seemed to characterize students' tendencies to express logical relationships in writing. Lamb identified six patterns. These patterns will be discussed in relation to the errors found in this study. Also, seven run-on sentence error patterns determined from an

analysis of the data in this study will be presented and described.

Lamb (1977) identified Pattern 1 as the most common one in the college students' papers. She described this pattern as one in which sentences were joined by adverbs like "however," "indeed," or "therefore," or by prepositional phrases like "at this time," or "in addition" (p. 6). Unlike the college students' run-on sentences, the 357 run-on sentences examined in this study provided only two examples of the use of "therefore" and one example of the use of "however." No errors used the word "indeed." Also, these words were not present in any of the other correct sentences. All three of the "however/therefore" type errors were found in the papers of students in the high developmental group, two at the 11th-grade level and one in the 9th-grade level. Two examples from students' compositions are listed below.

> The Mississippi River is the second largest river in the world, therefore it could not be said there is only one bridge which crosses over it.

> Both jobs were summer, temporary, part-time, however, this was only because of my fall and spring studies.

Lamb's (1977) Pattern 2 was found more often in the secondary-school students' compositions. In this pattern, the first section of a comma splice or fused

sentence presents data, and the second section draws a conclusion from these data. The idea of "therefore" is present but not expressed. There were 25 examples of this type in the papers examined in this study. Examples from students' compositions are written below and in Appendix I.

> Insects and crawling bugs come out at night, if you're not protected they could eat you up.
>
> It gets very cold when you ski, you can get frostbite.

In Pattern 3, the second section of a comma splice or fused sentence supports or gives reasons for the first section. The idea of "because" or "since" is present but not expressed. There were 42 examples of this pattern. Patterns 2 and 3 both expressed causality. Examples of Pattern 3 from students' compositions are listed below and in Appendix I.

> I think we should call the classes up by grades or sections, the way we do it now it takes too long to get through the line.
>
> I think parent conferences should take the place of detention, it's less embarrassing and not as strict.

In Pattern 4, a negative statement is followed by a positive statement. This pattern was not very common in the papers analyzed in this study. There were only three instances of this pattern. Examples are listed below.

> The roads don't have cement they have dirt.
>
> It's not like the air in Chicago filled with dust or smoke, it's a pleasant air, an air like there is no where, but in the mountains.

Pattern 5 is a description of steps in a process. For this study, all examples where sequence seemed to be the relationship expressed were counted. Narrative sequence, the retelling of an event or a story, was counted as well as the description of steps in a process. The connecting idea, expressed or unexpressed, was "then." The longest run-on sentences, containing the most T-units, were included in this pattern. There were 36 run-on sentences in which the connecting idea was sequence. Younger students seemed more inclined to use this pattern. Of the 36 examples of this type, 23 were in the papers of the seventh graders. Examples of this type are found below and in Appendix I.

> Students go to the office for fighting, then they go home.
>
> I went to Davey's and I ordered hamburger, fries, and soda then we went to the motel and went swimming (it was dark when we got back).

In Pattern 6, a sentence is added to explain or expand upon a word in the first part of the comma splice or fused sentence. An example from an 11th-graders' paper is shown below.

I have no vices, I do not drink or smoke.

This was one of the most common patterns found in the run-on sentences of the secondary students' papers although it was listed at least common in Lamb's (1977) error analysis. Sentences followed by another short sentence describing or elaborating on something in the first sentence were very common. Often the second sentence started with a personal pronoun, usually "it." There were 49 examples of this type. Examples are listed below and others are found in Appendix I.

We saw the Graceland mansion, it was very big.

I went to this concert, it was Heart.

Ten examples of this type were in the 11th-grade papers, persuasive mode. In this assignment, students were asked to write a letter applying for a job. In many cases, the students listed qualifications or descriptions in the manner described for Pattern 6. Two examples are written below. Other examples are found in Appendix I.

I am Chris Jones, I am a senior at Truman High School.

I am a hard worker, I am prompt and responsible.

In her explanatory error analysis, Lamb (1977) identified six patterns in the run-on sentences of college students. The run-on sentences found in the papers of secondary school students in this study have

been placed in Lamb's categories where appropriate. The following seven patterns were not identified in Lamb's error analysis, but were identified from an analysis of the data in the present study.

Pattern 7 is closely related to Pattern 7 in that sentences are added to the first sentence to elaborate or expand upon an idea. This pattern is differentiated from Pattern 6 because the ideas in all of the sentences (T-units) are basically parallel. In Pattern 7, the idea in the first sentence is usually superior in importance to the ideas in subsequent T-units. Both Pattern 6 and Pattern 7 seemed to represent attempts by students to list ideas that could have been coordinated or subordinated more skillfully. Perhaps students fused sentences or put sentences together with comma splices to indicate that the ideas belonged together. Writers whose syntactic abilities were more developed would have had more options available for joining ideas. The run-on sentences in this pattern include the ambitious attempts of students to put ideas together in new and different ways. Sometimes in the middle of joining together a group of coordinated verbs or objects, a student reverted to the need to include some of the missing subjects or verbs, thus creating a run-on sentence. Two examples of this type are shown below, and other

examples appear in Appendix I. These attempts are consistent with observations about syntactic growth made by Hunt (1965, 1977) and O'Donnell et al. (1967).

> I went to Astro World and I ate, played games, and I rode some rides.
>
> At the Mardi Gras they throw beads, balls, little whistles, play money, they throw little stuffed animals.

In these examples, the students seemed to be trying to coordinate verbs, in the first example, and objects, in the second example. The students added the missing sentence elements to the last verb or object being coordinated and consequently created run-on sentences.

Pattern 7 accounted for the largest number of run-on sentences. There were 53 sentences of this type. Patterns 6 and 7 are very similar and together accounted for 102 of the run-on sentences, or 29.39% of the total number of run-on sentences.

Pattern 8 has as its underlying idea the idea of contrast. The three sentences listed under Pattern 4 were not included in this count although they also express the idea of contrast. The underlying idea in many of these sentences seemed to be the idea of "however" although it was not expressed. There were four of these sentences. Examples are listed below and in Appendix I.

The roads are rocky and made of dirt,
there are no curbs like in the city.

We estimated an eight hour drive it took
thirteen.

Another type of run-on sentence, Pattern 9, occurs when students interject their emotions or opinions into their writing. There were many instances in which a statement like, "it was fun," was interjected into a sentence making it a run-on sentence. This type was more common in the seventh-grade papers. Some examples are listed below and in Appendix I. There were 15 of this type, 10 of which were in the seventh-graders' papers. No examples of this type were found in the 11th-graders' papers.

It was really fun in Houston I had a ball.

I fell through the stairs and landed in an
underground tunnel it was neat.

Also, students seemed to have difficulty when they ended a letter or a composition or when they became conversational in writing. Pattern 10 includes attempts to punctuate quotations which led, in three cases, to run-on sentences. The following examples are typical of run-on sentences created by speaking directly to the audience in a conversational way or of trying to end a letter.

Well thank you for listening to my request,
I hope you can put some thought into it.

> Well that's all for now until later hope you enjoy it.

There were 10 sentences of this type in the students' writing samples. Only one example of this type was found in the 11th-graders' papers. Other examples are found in Appendix I.

In Pattern 11 students tended to try to qualify information. They would make a statement and then try to explain it by qualifying it. There were seven examples of this type. As in Pattern 10, students seemed to be trying to discuss something with the audience as they might if they were talking directly to that person in conversation. Pattern 11 was not present in the 11th-graders' compositions. Two examples are listed below.

> He has a big nose, well I can't really say big it fits on his face and all but it's overly large.

> And in the summer you can take classes, like tennis, soccer, ballet dancing I know other parks have the very same thing, but I like Keist Park.

In Pattern 12 students produced subordinate clauses, prepositional phrases, or participial phrases that could have gone with either part of the run-on sentence. There were eight sentences of this type in the students' compositions. Examples are given below and in Appendix I.

> I've watched and timed her when she buses tables she does it so fast that I hardly get a chance to look around between seconds.

> It was real exciting coming back we stopped and saw my Aunt and Uncle for a while and then drove home.

In this study, some of the sentences seemed to be more correct than others. If the students had used semicolons instead of commas, the sentences would have been correct. Of course, this would be true of almost all run-on sentences, but several of the run-on sentences seemed to be written in the way they were to achieve an effect. Because these sentences fit the criteria determined for run-on sentences in this study, they were identified as run-on sentences. However, they seemed not to represent the misperception of sentence boundaries as did the other run-on sentences. There were six sentences of this type. Two examples of this type are listed below, and others are listed in Appendix I.

> The grass turns green, the flowers bloom, and the leaves begin to bud.

> He is so thin, he is so quiet, he is so lost.

There were 347 run-on sentences identified in this study. The categorization of the sentence by patterns accounted for only 261 of the sentences leaving 86 of the sentences uncategorized. Some of the 86 sentences were combinations of the categories established and

others seemed to fit into none of the categories. Further error analyses of students' writing may identify other patterns.

Sentence fragments. The sentence fragments were categorized according to the syntactic structures used by Kagan (1980) in a sentence fragment test constructed for use in error analysis. She found certain syntactic structures to be important to students in designating a sentence as a complete sentence. She found that students often mistakenly identified as a complete sentence a verb plus direct object sequence (V + DO) or a word string containing at least one prepositional phrase.

In the analysis of sentence fragments done in this study, 27 syntactic combinations were identified. Of the 27 types, two types, subordinate clauses and nouns plus another structure (N + STRUC), were most common. The structures following nouns in the common sentence fragment types were relative (adjective) clauses and prepositional phrases (see Table 20). Kagan's (1980) findings about the presence of the prepositional phrase was supported because the N + PREP structure was common in the sentence fragments; however, the V + DO was very rare in the sentence fragments examined in this study. Of the 125 fragments analyzed, besides those categorized

Table 20

Syntactic Types of Sentence Fragments

	No. of Fragments	%	Type
Grade 7	33	25.81	Subordinate clauses
		12.90	Noun + prepositional phrase
		12.90	Noun + relative clause
Grade 9	55	40.74	Subordinate clauses
		11.11	Noun + prepositional phrases
		11.11	Noun + adjective or noun alone
Grade 11	37	25.00	Noun + prepositional phrase
		11.11	Subordinate clauses
		13.89	Noun + relative clause
		11.11	Two prepositional phrases

as subordinate or relative clauses, only 9 contained the V + DO sequence.

Almost all of the fragments in this analysis were related to the preceding sentence. Only two fragments were related to the following sentence. The two major types of fragments were the subordinate clauses, especially clauses beginning with "because," and appositive fragments. These appositive fragments gave

information about a word in the preceding sentence. Of the 125 fragments, 40 were appositives. Two examples are listed below and others appear in Appendix J.

> The fair has everything you probably have never seen before. Things like food, games, and rides.
>
> With one's skill at breeding, color can be matched to breed "pies." Or two color birds.

A number of the fragments served as adverbs for the preceding sentence by telling why, how, when, where, to what extent, or under what conditions. The subordinate clause fragments served the adverb function. There were 49 fragments of this type. Two examples from students' compositions are listed below and other examples appear in Appendix J.

> I have had lots of experience in working with clothes. As my mother works at Joskes and I help her out a lot.
>
> We made him a dog house, but he doesn't even go inside of it. Even when it rains.

Seven fragments began with verbs. This type was not very common. Two examples are listed below.

> We were inside getting water qrom the fountain on the bottom floor. While my mother went inside and got the tickets. Gave us our tickets and went into the elevator.
>
> This elevator wasn't normal, you could see outside while going up. Went to the top in the dining room and it was beautiful.

Discussion

The first part of this study revealed that, for the students participating in this study, length (in number of words) of composition was a reliable index of writing maturity. The students wrote longer compositions at each higher grade level. The 9th graders wrote more than the 7th graders, and the 11th graders wrote more than the 9th graders. Within-grade developmental level differences reflected the same trend. Students in the high developmental group wrote longer compositions than students in the average within-grade developmental group.

Differences in modes assigned also affected composition length. The descriptive compositions were longer at each grade level. These descriptive assignments seemed to elicit more words from the students. However, one consideration related to the nature of the assignments should be noted; the persuasive items required the students to write a letter and a letter assigned may not necessarily call for a shorter composition. Difference in number of words for each mode was greater at the 7th and 11th grade than in the 9th. The ninth graders wrote almost as many words in response to the persuasive item as in response to the descriptive item (difference = 23.93 words). In the 7th- and

11th-grade compositions, the descriptive item elicited many more words than the persuasive assignment (differences = 42.22 and 87.56, respectively). Crowhurst and Piche (1979) noted that the sixth graders in their study had difficulty with the persuasive mode. The number of words produced by the seventh graders in this study indicated that these students also had difficulty with the persuasive mode; however, in the W/TU measure, the seventh graders were almost as high as the ninth graders.

Also, the large difference in number of words produced by the 11th graders in response to the two modes may have been at least partially caused by the nature of the persuasive item. When writing for a job, the letter is perhaps brief and, in many cases, more explanatory than persuasive. Most of the 11th graders told the prospective employer how to reach them and other facts that were not really used to persuade. This would have added to the score of the paper if it were being scored for effectiveness in the NAEP writing sample (Second NAEP, 1980, p. 285), but did not contribute to increased number of words or words per T-unit.

Hunt (1965) and Loban (1973) analyzed student writing taken from actual classroom assignments. This procedure provides for an analysis of the writing that

students actually are required to do in natural settings. However, because of the nature of the work the students do at various levels in school, younger students may do more narrative writing whereas older students may do more explanatory or expository writing. The findings in this study, as well as those of Crowhurst and Piche (1979), Perron (1977), San Jose (1973), and Rosen (1969), indicate that, in measuring writing growth by words per T-unit, the mode or type of writing should be controlled. In this study, the W/TU of the seventh graders was almost as high as the ninth graders. Perhaps when the situation calls for greater syntactic complexity, younger writers can provide it.

The mean W/TU did not show developmental trends when both modes were considered. However, developmental trends in W/TU like those proposed by Hunt (1965), O'Donnell et al. (1967) and Mellon (1969) were exhibited in the descriptive mode. Perhaps some modes provide for the linear movement toward syntactic maturity proposed by Hunt (1965), but other modes provide for greater use of syntactic resources at earlier ages.

Developmental trends were noted in students' mastery of sentence errors. Generally, students had approximately the same error rates in grades seven and nine. In grade 11, the error r-tes decreased. The

11th graders seemed to have a more, clearly developed concept of a sentence and more control over the conventions of written English. The drop in percent of T-units contained within the boundaries of run-on sentences decreased ramatically in the 11th grade. The percentages were 22% for the 7th-graders' papers, 19% for the 9th-graders' papers, and 8% for the 11th-graders' papers. The decline in fragment rate was not as dramatic but was significant between grades 7 and 11. The fragment rates were as follows: 7th graders, 3%; 9th graders, 4%, and 11th graders, 2%.

The same developmental trends were noted between the two within-grade developmental groups at each grade level. In all three grade levels, the high group made fewer errors. The high group seemed to have a more developed concept of a sentence and more control over the conventions of written English. Overall, the percentage of T-units contained within the boundaries of run-on sentences in the high group was 11% and in the average group 21%. The percentage of fragments per T-unit was 1% for the high group and 5% for the average group.

The descriptive error analysis revealed that the run-on sentence error of an 11th grader was more likely to be a comma splice than a fused sentence. The 11th

graders seemed to have discovered that the sentence must be marked with some sort of punctuation. Sentences were not simply fused with no punctuation. The percent of comma splices increased at each grade level, and the percent of fused sentences decreased at each grade level. In grade 7, the percent of fused sentences was 39.81; in grade 9, the percent was 27.82; and in grade 11, the percent was 12.23. For comma splices, the percent was 28.70 in the 7th grade, 38.31% for the 9th grade, and 67.63% for the 11th grade.

There were also more cases of long run-on sentences in the 7th and 9th grades than in the 11th grade. In the 7th grade, the range of number of T-units in run-on sentences was 2-12; in the 9th grade the range was 2-10; and in the 11th grade the range was 2-6. Also, the 7th- and 9th-grade papers contained a greater percent of run-on sentences of more than three T-units than the 11th-grade papers (7th grade, 16.81%; 9th grade, 16.31%; 11th grade, 9.68%).

In addition, the mean W/TU for the run-on sentences was less than the mean W/TU for the total compositions. The mean W/TU for the whole compositions was 12.43 for the 7th graders, 13.66 for the 9th graders, and 13.30 for the 11th graders. For the run-on sentences alone, the mean W/TU was 8.78 for the 7th graders, 9.05 for

the 9th graders, and 9.05 for the 11th graders. Syntactic maturity was greater in the complete compositions than in the run-on sentences.

An analysis in which the run-on sentences were categorized according to an exploratory error analysis by Lamb (1977) revealed that some of the patterns identified as very common in college students' papers are very rare in secondary-school students' papers. The type in which the words "therefore," "however," or "indeed" are used to join sentences was very common in college students' writing. These college students had described the relationship between the two sentences in a run-on sentence correctly; usually these students had made a punctuation error by using a comma instead of a semicolon. This type of "however/therefore/ indeed" error was very rare. There were only two uses of the word "however" and one use of the word "therefore." There were no uses of the word "indeed." Since the errors identified by Lamb as most common among college students were very rare in the writing of secondary school students, there may be developmental patterns in error types.

The most common type of error was one in which students seemed to be consolidating ideas in a list or a description. Students seemed to be trying to

coordinate or subordinate, and, in their ambitious attempts, made errors. This type accounted for approximately one-third of the run-on sentence errors.

Another important effect on the run-on sentences seemed to be the students' efforts to express causality. A number of the sentences had the idea of "therefore" or "because" as an unexpressed idea used to join two sentences.

Sequence or the unexpressed idea of "then" also accounted for a large number of the run-on sentence errors. Also, students seemed to make mistakes in writing when they ended a composition or when they became conversational with the audience. The interjection of opinions or emotions like "it was fun" or "it was neat" often produced run-on sentences.

Students may express their desire that two ideas be considered together by joining those ideas in the only way they know. If they had more options for joining sentences, they might not need to resort to simply fusing sentences or splicing them with a comma.

Most of the fragments were either subordinate clauses used adverbally or appositive fragments consisting of a noun plus another structure. These structures included adjectives, adjective (relative) clauses, and prepositional phrases. There were few

verb plus direct object sequences in the fragments and few participial phrases. The nature of the fragments may have had to do with the nature of the assignments even though there was no measurable difference between the types of fragments and run-on sentences in the two modes. For instance, it might be proposed that there would be more subordinate clause fragments, especially "because" clause fragments, in the persuasive mode. The fact that persuasive writing calls for the presentation of reasons would call for the presence of "because" fragments thus presenting a greater opportunity for error. In this study, there was approximately the same number of "because" fragment errors in both modes. However, the scarcity of participial phrase and infinitive phrase fragments in this study may indicate that the type of error is mode related. The categorization of errors using other assignments would add to the information of effects of mode of discourse on writing errors.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problem of this study was to describe sentence production errors and syntactic complexity in students' writing in two modes of discourse and at three grade levels. Although research in developmental writing has much "unexplored territory," one area of writing development, syntactic growth, has been analyzed in some depth. Hunt's (1965) work in identifying the T-unit and proposing that the T-unit increases developmentally in written composition has been supported by other work in developmental writing (Blount et al., 1968; Braun & Klassen, 1973; Loban, 1976; O'Donnell et al., 1967; Veal, 1974). In addition, the T-unit and Hunt's findings have been used to set norms and measure growth in syntactic development in numerous methodological studies (Maimon & Nodine, 1978; Mellon, 1969; O'Hare, 1973; Stotsky, 1975).

Recently, some researchers have proposed that, while measurement of syntactic complexity using the words per T-unit (W/TU) concept may be very useful, situational factors such as mode of discourse also affect complexity in writing. Rosen (1969) found that

15- and 16-year-old students produced longer T-units in referential writing than in expressive writing. San Jose (1973) and Perron (1977), in studies of the writing of elementary school students, determined that mean T-unit length was greatest in argument or persuasion, followed by exposition, narration, and description. Crowhurst and Piche (1979) found that T-unit length was significantly greater in argument than in narration at grades 6 and 10 and also that T-unit length did not increase significantly between grades 6 and 10 in the mode of narration. In order to provide more information about the effect of mode of discourse on syntactic complexity, the present study examined written products, in the modes of persuasion and description, or students in grades 7, 9, and 11.

Another aspect of development in writing, mastery of syntactic error, was not included in Hunt's (1965) analysis. Hunt's stated purposes did not include the study of students' errors. Some researchers have proposed that an analysis of errors in writing could be a promising adjunct to work on syntactic development (Kagan, 1980; Shaughnessy, 1977). These researchers and theorists have begun to use analyses of errors in writing to make inferences about the writing process and how it develops (Barritt & Kroll, 1978; Kagan, 1980;

Kroll & Schafer, 1977; Lamb, 1977; Shaughnessy, 1971). They point to valuable work using errors to study growth and learning done in the fields of language acquisition (Berko, 1958; Brown, 1957; Brown & Bellugi, 1964), reading (Goodman, 1969, 1973), and second language acquisition (Burt, 1975; Corder, 1967, 1975a, 1975b; Dulay & Burt, 1972; Richards, 1973, 1974). In the present study two types of sentence errors were described. Inferences were made about rule-governed language behaviors represented by errors in students' writing.

Some researchers (Barritt & Kroll, 1978; Maimon & Nodine, 1978) have proposed that writing, like other learning processes, is a risk-taking procedure and that syntactic growth may be accompanied by a rise in the occurrence of syntactic errors. Maimon and Nodine (1978) found that development in syntactic skills was associated with a greater incidence of certain types of syntactic errors, sentence fragments, run-on sentences, and faulty parallelism. However, the study by Maimon and Nodine was not a developmental one in the traditional sense. They studied the syntactic development and error rate of college students after the students' participation in a short course on sentence-combining. The present study described relationships between

syntactic development and two types of sentence production errors, run-on sentences and sentence fragments, in the writing of secondary school students at three grade levels.

Summary

Specifically, the purposes of this study were as follows:

1. To examine differences in syntactic development in the writing of students at three grade levels.

2. To examine the effects of mode of discourse on the syntactic complexity of students' writing at three grade levels.

3. To measure the rate of sentence production errors, specifically sentence fragments and run-on sentences, in students' writing at three grade levels and in two modes of discourse.

4. To identify and describe sentence production errors, specifically sentence fragments and run-on sentences, and examine developmental error patterns.

5. To identify and describe syntactic structures and logical patterns characteristic of the sentence production errors of student writers at three grade levels.

6. To describe relationships among rate and types of production errors, grade level, mode of discourse, and syntactic complexity.

7. To describe the acquisition of punctuation associated with sentence and clause boundaries.

The research questions which were studied include:

1. What is the effect of mode of discourse on syntactic complexity in writing at three grade levels?

2. What is the rate of syntactic error in writing at three grade levels and in two modes of discourse?

3. Is growth in syntactic complexity associated with changes in rates or types of sentence production errors, specifically run-on sentences and sentence fragments?

4. Are there syntactic structures that characterize students' sentence production errors?

5. Are there logical patterns that characterize students' sentence production errors?

6. Are there relationships among rate and type of sentence production errors, grade level, mode of discourse, and syntactic complexity in students' writing?

7. What can be determined about students' acquisition of the use of punctuation associated with sentence and clause boundaries?

8. What can be determined from students' sentence production errors about their concepts of a sentence and its boundaries?

The students whose writing samples provided the data for this study were enrolled in two high schools and one middle school in a large metropolitan school district. A total of 295 students in four 7th-grade classes (95 students), four 9th-grade classes (104 students), and four 11th-grade classes (96 students) each wrote two compositions. This provided 590 writing samples which were analyzed for the purposes of this study. Two of the classes at each grade level were identified as the high developmental group, and two classes at each grade level were identified as the average developmental group.

The writing assignment items used in this study were selected from those developed for the 1973-1974 National Assessment of Educational Progress (NAEP). The items were administered, before their inclusion in the NAEP, to probability samples, and, in the NAEP itself, to approximately 2,500 students (NAEP, 1980, p. v). The three items used in this study were also used in the Texas Assessment Project (1978). In the present study the item chosen for descriptive writing was administered to all three grade level groups (Appendix A). Two items

were chosen to provide for persuasive writing. The two assignments were used as they were used in the NAEP and in the Texas Assessment Project. In these assessments, the item in which the writer is asked to write to the school principal (Appendix B) was administered to 13-year-olds, and the item asking the writer to write for a job (Appendix C) was administered to the 17-year-olds. In the present study, the 7th and 9th graders wrote on the school principal items (Appendix B), and the 11th graders wrote on the job letter item (Appendix C).

The data for this study were collected during a 2-month period in the first semester of the school year, 1980-1981. Each group of students wrote in response to the descriptive item and, within 1 week, wrote in response to the persuasive item.

In each administration, the students received copies of the assignment items. They were told to write their compositions on regular notebook paper in ink or pencil. The directions and the writing assignment were read to the students as they read the assignment silently. The additional instructions in Appendixes D, E, and F were read to the students. The instructions encouraged the students to persuade or to describe so that a true demonstration of the students' abilities to write in the

two modes would be exhibited. Students were told that no help could be provided by the administrator or their teacher. They were asked to do their best writing, but were told that the assignment was not a test. Students were allowed one class period, approximately 50 minutes, to complete the task.

The analysis of the data for this study consisted of two parts. The first part was a study of the relationship among syntactic maturity, grade level, sentence error rate, and developmental level within grade level. The second part of the analysis consisted of a descriptive error analysis of two types of sentence production errors, sentence fragments, and run-on sentences.

Since a positive relationship between composition length and development in writing has frequently been noted (Diederich, 1961; Gebhardt, 1978; Richardson et al., 1976; Smith, 1980; Stewart & Grobe, 1979), words in each composition were counted. The mean numbers of words per composition by grade level, developmental level, and mode of discourse were determined. The word counts were done using the criteria developed by O'Hare (1971).

All of the writing samples were segmented into T-units, and mean W/TU was determined for each paper. A

T-unit is an independent clause (main clause) plus whatever subordinate clauses or phrases that accompany it. Mean W/TU was determined for each paper. Hunt's (1965, 1977) and Mellon's (1969) instructions for determining mean W/TU were used.

Two types of sentence errors were chosen for analysis in this study. These two types of errors, sentence fragments and run-on sentences, were chosen for analysis in this study because they are common errors (Kagan, 1980; Shaughnessy, 1977) and because they probably reflect students' efforts to consolidate T-units.

Run-on sentences and sentence fragments were identified in each paper. The number of errors in each paper was divided by the number of T-units in each paper to arrive at a ratio of run-on sentences per T-unit (R/TU) and sentence fragments per T-unit (S/TU). The ratio of R/TU was determined by counting the number of T-units in run-on sentences rather than just the number of run-on sentences in the paper.

Means and standard deviations were determined for each grade level, each within-grade developmental level, and each mode of discourse for composition length, W/TU, R/TU, and F/TU. To determine relationships, a 2 x 2 x 3 analysis of variance was done. When a significant F-ratio

was obtained. Tukey's multiple comparison test was administered to test for significance between means. Simple correlations between combinations of the four variables also were determined.

The second part of this study consisted of a descriptive error analysis of the sentence fragments and run-on sentences. A total of 473 sentence errors was analyzed in the descriptive analysis. There were 113 run-on sentences in the 7th-graders' papers, 141 in the 9th-graders' papers, and 93 in the 11th-graders' papers, for a total of 347. There were 33 sentence fragments in the 7th-graders' papers, 55 in the 9th-graders' papers, and 37 in the 11th-graders' papers, for a total of 125.

From an analysis of the data and from implications drawn from other research (Daiute, 1981; Kagan, 1980; Lamb, 1977), several analyses of the run-on sentences were made. Daiute (1981) proposed that errors were more likely to come late rather than early in a sentence because errors may be caused by the overloading of short-term memory. To test this hypothesis, the number of words in the first T-unit was counted, and the number of words in each subsequent T-unit was counted. Means for each group were calculated.

Observations were made about syntactic elements, specifically short subsequent T-units descriptive of a word in the first T-unit and beginning with a pronoun. Another observation concerned the changing number of T-units in the run-on sentences at each grade level. Also, the acquisition of the conventions of written English as they apply to sentence boundaries was traced and developmental tendencies discussed.

Run-on sentences were also categorized according to a system proposed by Lamb (1977). In an exploratory error analysis of the writing of college students, Lamb proposed that run-on sentences reflect students' needs to link closely-related ideas. She developed a list of six patterns representing these logical relationships. These patterns were used to analyze the run-on sentences in this study. After Lamb's patterns were used to categorize the run-on sentences, seven additional patterns were determined from an analysis of the run-on sentences in this study.

The sentence fragments were categorized according to the syntactic structures used by Kagan (1980) in a sentence fragment test used to provide for an error analysis. A discussion of the ways the sentence fragment could reflect a logical relationship with the sentences around it was presented.

Summary of Findings

On the measures of writing development, differences in lengths of composition (number of words) were significant, $p < .05$ between all three grade level combinations, 7 and 9, 9 and 11, and 11 and 7; between the two developmental groups, $p < .0001$; and between the two modes of discourse, $p < .0001$. Longer compositions were written by the 11th graders; compositions next in length were written by the 9th graders; and the shortest compositions were written by the 7th graders. Longer compositions were written by the students in each high within-grade developmental group. Also, longer compositions were written in the descriptive mode.

In the second measure of writing development, W/TU, there were significant differences, $p < .0001$ between the two modes of discourse. The mean W/TU was greater for persuasive mode. There were no differences among the grade levels. A second analysis of variance was done on the papers in the descriptive mode only. There was a significant main effect for grade level, F (2, 294) = 48.31, $p < .0001$. The multiple comparisons tests indicated that there were significant differences between all three grade level combinations, 7 and 9, 9 and 11, and 11 and 7, $p < .05$. Mean W/TU for the 7th grade was 9.66; for the 9th grade, 11.58; and for the 11th grade, 14.31.

Developmental trends like those described by Hunt (1965, 1977), O'Donnell et al. (1967), and Mellon (1969) were present in the compositions written in the descriptive mode but not in those in the persuasive mode.

In the run-on sentence error rate, there were significant differences, $p < .0001$, between the two modes of discourse, between grades 7 and 11 and 9 and 11, $p < .05$, and between the two developmental groups, $p < .0001$. There were more run-on sentences in the descriptive papers, in the seventh- and ninth-graders' papers, and in the average developmental level. There were no differences between run-on sentence error rates in the seventh- and ninth-graders' papers.

In the sentence fragment error rate measurement, there were significant differences, $p < .0001$, between the two developmental levels with more errors for the average group. There were significant differences, $p < .05$, between grades 9 and 11 but no differences between grades 7 and 9 and 9 and 11. There were more fragment errors at grade nine than at grade seven. There were no differences between the two modes.

In the descriptive error analysis, it was determined that, in the papers examined in this study, run-on sentences were more common than sentence fragments. Of the errors, 73.52% were run-on sentences, and 26.48%

were sentence fragments. It was also determined that the first T-unit of a run-on sentence is longer than the subsequent T-units, but the difference is not great.

The lengths of the T-units within the run-on sentences were investigated. The means for each grade level were much the same, but the range in numbers of T-units in run-on sentences was greater for the seventh-graders' papers. The range for the 7th graders was 2-12 and for the 11th graders 2-6. Also, the 11th-graders' papers had a smaller percentage of run-on sentences consisting of more than three T-units.

A comparison was made between the mean T-unit length of the run-on sentences and the mean T-unit length for the whole compositions. The mean W/TU in the run-on sentences for each grade level was less than the mean W/TU for the whole compositions. The mean W/TU for whole compositions for the 7th grade was 12.43; for the 9th grade, 13.66; and for the 11th grade, 13.30. The W/TU means of the run-on sentences were 8.78, 9.05, and 9.05, respectively. The level of syntactic complexity for the whole compositions was greater than that for the run-on sentences.

The run-on sentences produced by the 11th graders were different from those of the younger students in this study. The younger students more often simply fused sentences together with no punctuation. The students in

the 11th grade in this study made many more comma splices than fused sentences. They seemed to have determined that a sentence, although it might be joined to another, must have some sort of boundary marked by punctuation. The incidence of fused sentences decreased in relation to comma splices between grades 7 and 11. Also, the incidence of conjunction alone with no comma tended to decrease from grades 7 to 11, although there was a slight increase in this type in grade 9. The same trends seemed to manifest themselves in within-grade developmental levels. In the high group at each grade level there was a greater incidence of the use of comma splices and a lesser incidence of the use of fused sentences and conjunction/no comma errors.

In an analysis of the run-on sentences themselves and the types of words used in the errors, it was determined that a large percentage of the T-units after the coordination error started with pronouns. Personal pronouns, especially "I" and "it," were most often used.

Hunt (1965) observed that younger writers use more personal pronouns in their writing than older writers do. The use of pronouns to start the second or third T-unit was prevalent in the run-on sentences in this study. To determine whether or not the use of pronouns to begin T-units in run-on sentences was greater than the use of

pronouns to begin correctly punctuated sentences, 360 correctly punctuated sentences were randomly selected from the writing samples, 120 from each grade level.

The percentages of these correctly punctuated sentences which began with pronouns was large at each grade level (grade 7, 65.83%; grade 9, 60.83%; and grade 11, 48.33%). However, these percentages were smaller than those for the use of pronouns to start second or third T-units in run-on sentences (grade 7, 78.24%; grade 9, 70.16%; and grade 11, 77.14%). Also, a decrease in percent at each higher grade level reflected the developmental decrease in use of pronouns noted by Hunt (1965).

Run-on sentences were placed in categories based on six patterns determined from an error analysis by Lamb (1977). Seven extra patterns were determined from an analysis of the data in this study. The most common group consisted of two patterns in which students seemed to be trying to join ideas together in a description. They made ambitious attempts to coordinate or subodrinate several ideas but made mistakes in doing so.

A pattern identified by Lamb (1977) as very common in the college students' papers she examined was very rare in the secondary school students' papers examined

in this study. There seemed to be different types of run-on sentences related to students' developmental level.

Speech influences in writing were noted in that some run-on sentences seemed to be caused when students became conversational with the audience. Also, younger students interjected opinions and emotional responses like "it was fun," "it was neat," to their writing, thus creating run-on sentences. There were few examples of these interjections in the writing of older students.

The sentence fragments were categorized according to syntactic structures used by Kagan (1980) in an error analysis. She found certain syntactic structures to be important to students in designating a word string as a sentence. In the present study, the two most common types were subordinate clauses (SUB CL) and nouns plus a structure (N + STRUC). The structures attached to nouns were adjectives, adjective (relative) clauses, and prepositional phrases. Although there was a great variety (29) of sentence fragment types, the largest percentages of the errors were of the two common types (grade 7, SUB CL = 24.81%, N + STRUC = 22.22%; grade 9, SUB CL = 40.74%, N + STRUC = 22.22%; grade 11, SUB CL = 11.11%, N + STRUC = 38.89%).

Of the fragments analyzed in this study, only two were related to the following sentence. All others were

related to the preceding sentence. Of the two types listed above, N + STRUC was used, as well as other structures (nouns alone, for instance) in apposition to the preceding sentence. Of the 125 fragments, 42 were appositive fragments.

A large number of fragments served an adverbial function for the preceding sentence. These fragments told when, where, how, why, to what extent, and under what conditions. The subordinate clause fragments beginning with "because" were of this type. There were 47 fragments of this type. Examples from students' compositions of both types, adverbial and appositive, were included.

Conclusions

The conclusions of this study are based on data from writing samples in two modes of discourse and from grades 7, 9, and 11. Within the limitations of this study, the following conclusions have been formulated.

1. As has been noted by other researchers, Diederich, 1961; Gebhardt, 1978; Richardson et al., 1976; Smith, 1980; Stewart & Grobe, 1979), a positive relationship exists between composition length and age and ability of the student writer. The length of the students' compositions increased at each grade level. Students in the higher within-grade group at each grade

level wrote longer compositions than the students in the average group.

2. Mode of discourse does have an effect on syntactic complexity and length of composition. Hunt (1965, 1970, 1977) established norms for measuring syntactic development by grade level. In this study, as in those by Rosen (1969), San Jose (1972), and Perron (1977), mode of discourse significantly affected syntactic maturity as measured by mean W/TU. This study supported the assertion of Crowhurst (1980) that persuasive writing inherently calls for the interrelationship of propositions and that this interrelationship is expressed by the subordination of clauses and less-than-clausal elements. This subordination has the effect of increasing mean W/TU.

Mode of discourse also affected length of composition. Compositions in the descriptive mode were longer. Students seemed to have more to say in the descriptive mode. However, the length of the compositions may have been affected by the fact that the persuasive items called for letter writing. Perhaps letter writing, especially the official type required by these assignments, calls for more concise writing.

Mode also had an effect on run-on sentence errors. More run-on sentences were present in the compositions

in the descriptive mode than in those in the persuasive mode. Of course, the papers in both modes included sentence errors which were not considered in this study. If persuasion does call for more subordination than description does, it follows that descriptive writing would rely more on coordination than persuasive writing would. Coordination errors were the ones measured by this analysis of run-on sentence errors. An error analysis directed toward errors in subordination might discover more errors in the persuasive mode.

3. Syntactic maturity as measured by mean W/TU is not always a reliable index of growth if mode is not considered. In this study, the findings of Hunt (1965, 1970, 1977), O'Donnell et al. (1967), and Mellon (1969) about development in mean W/TU were supported by data from the descriptive mode but not from the persuasive mode. Scores in mean W/TU in the persuasive mode were higher than those in the descriptive mode at grades 7 and 9 and lower at grade 11. The persuasive scores were much the same at all grade levels. The drop in the 11th-grade persuasive mean W/TU score was probably affected by the assignment item. The 11th-grade item elicited a more explanatory type of writing than the clearly persuasive items used in the 7th and 9th grades. Also, the mean W/TU for the 7th-graders' compositions

was almost as high as the mean W/TU for the 9th-graders' compositions. Perhaps, when the situation calls for syntactic complexity, younger writers can produce it.

4. The oldest students and students in the higher within-grade group made fewer sentence errors. Students demonstrated developmental tendencies in mastery of the "print code." Differences were not great between grades seven and nine. In fact, fragment rate increased in the ninth grade. Both types of errors dropped off dramatically in the 11th-graders' compositions.

5. Developmental differences between high and average groups are present in error rates and length of compositions. The students in the high group produced more words and fewer errors in their compositions. They also produced more W/TU in the descriptive mode than the average group.

6. Two syntactic structures, subordinate clauses and noun plus a structure (relative clauses, prepositional phrases, adjectives) characterize students' sentence fragments. These types were found across grade levels and modes although the subordinate clause was most common in the ninth-graders' compositions.

7. A wide variety of syntactic structures are used in the run-on sentences, but a common element of a large number of the run-on sentences is a second or third

T-unit beginning with a personal pronoun, most commonly "it" or "I."

8. Students' run-on sentences and fragments seem to reflect developing syntactic skills. Hunt (1965) described the junior high school years (grades seven through nine) as a time when students are trying out new syntactic abilities. The errors of the students in this study reflected attempts of the students to coordinate within the T-unit (verbs and objects especially), subordinate, and use appositives. Writing does seem to be a risk-taking activity, in which ambitious attempts to use developing syntactic abilities may result in errors.

9. Logical patterns can be found in the run-on sentence errors of secondary-school students, although these patterns may not account for all errors. In the compositions examined in this study, the fused sentences or comma splices often expressed relationships between or among the T-units in the run-on sentences. The relationship was often causal with the implied ideas of "because" or "therefore." Younger students' run-on sentences were often characterized by interjections of statements of opinion or emotion such as, "it was fun," or, "it was neat," or by conversational summaries like "well that's all I know."

10. The relationship between a sentence fragment and an accompanying sentence is usually between the fragment and a preceding sentence. In the 125 fragments examined in this study, only 2 were characterized by a logical relationship with the following sentence.

11. Students with a higher level of writing development are more likely, when producing a run-on sentence, to use a comma splice than a fused sentence. This tendency was noted in the 11th-graders' compositions and in the compositions of the high developmental group at each grade level. These students seem to have acquired the concept that the sentence must be set apart by some sort of punctuation. From this viewpoint, the comma splice can be seen as evidence of growth.

12. Error sentences may be less syntactically complex than the whole compositions. In this study, students produced more syntactically complex sentences in their whole compositions than they did in the run-on sentences. Often the run-on sentences were characterized by short sentences beginning with pronouns. Hunt (1965) noted that young writers may use more pronouns in order to sustain ideas across T-units since these young writers use more T-units to express their ideas. More mature writers use fewer T-units and thus do not need the references necessary to sustain ideas across

multiple T-units. The run-on sentences included many short T-units beginning with pronouns. Maimon and Nodine (1979) proposed that a higher incidence of errors might be associated with greater syntactic maturity as measured by W/TU. The findings of the present study did not support this assertion in that error sentences were less mature than the other writing demonstrated by students.

Implications

The following implications are based on the results of this study.

1. Errors in writing do reflect rules and strategies that developing writers used while engaging in the composing task. Errors should not be ignored in student writing but used for study by the teacher, researcher, and students. Students try to "make sense" of the complicated act of composing by applying rules that seem appropriate to them. Shaughnessy (1977) observed that students often have very good reasons for the errors they make. A helpful attitude toward errors in writing is one in which errors are viewed as clues to the rules the student uses while composing. Perl (1979) showed that poor writers are often unable to move forward in composing because of a fear of errors. Techniques could

be developed which would help students use their own errors as a means for growth in writing. Observations in this study indicate that some errors, comma splices for instance, actually do indicate growth. There are still errors but may reflect students' accommodation of what is needed to communicate in the "print code."

2. The purposes people have when they compose probably affect the most basic decisions they make while composing. In this study purpose or mode affected even such a basic element as syntactic choice. Purpose probably affects other choices in writing. Much of the instruction and research in writing has assumed that "good" writing is the same in all circumstances. Recently theorists have proposed that the choices made in writing are based upon what one hopes to achieve through a particular piece of writing. This study included no discussion of the concern for intended audience. This important factor should be explored along with considerations of purpose in writing.

3. Run-on sentences seemed to occur when students repeated subjects or other sentence elements in order to sustain ideas across T-units. The errors of the students in this study reflected attempts by the students of coordinate within T-units (verbs and objects especially), subordinate, and use appositives. Also,

the syntactic complexity of the error sentences as measured by W/TU was less than the syntactic complexity of the whole compositions. Development in methods to consolidate T-units to create fewer, longer T-units may help students in that they do not have to sustain ideas across so many T-units. Sentence-combining (Mellon, 1969; O'Hare, 1973; Strong, 1973) may be a useful technique in helping students develop syntactic fluency, and this fluency in ways to effectively combine types of syntactic structures may lead to a decline in syntactic error.

5. Good writing by adults is characterized by conciseness and clarity. Sometimes the demand for conciseness is conveyed to young writers. This study indicates that verbal skill in young writers is often demonstrated by the use of a large number of words. Perhaps, although conciseness might be the ultimate goal, young writers should not be discouraged in their wordiness.

Suggestions for Further Research

Based upon the results of this study, the following suggestions are made for further research.

1. Studies of syntactic development or complexity should include mode of discourse as a variable. In this

study, mode affected syntactic maturity as measured by W/TU more than grade level did. If measures of syntactic development are used to measure growth in syntactic abilities, mode should be considered.

2. Error analysis is a promising research tool in studying the development of writing abilities. Errors can be seen as "windows" into the composing process and to the rule-governed language behaviors used by young writers. In addition, valuable information would be added to error analyses by including student interviews concerning reasons for errors. Students can often give logical reasons for their mistakes. These reasons need to be explored. The error analysis in this study was an exploratory one. There are many types of errors in writing, and more error analyses are needed. A promising area is the study of the syntactic errors committed by students when they attempt to subordinate.

3. Further research should study what actually takes place when people write in different modes or for different purposes. Implications from this study suggest that basic elements of writing such as syntax are affected by mode. Theorists like Kinneavy (1971) and Cooper and Odell (1978) proposed that purpose is most important in determining choices made in writing.

More work should be done to determine the effect of purpose on decisions people make when they write.

4. Most examples of assignments in modes consist of a number of elements of different modes combined to achieve a purpose. Studies using techniques such as composing aloud or protocol analysis might identify how and why people change modes to achieve a purpose.

5. In-depth studies of errors, such as the one by Kline and Memering (1977) on fragments, describing how sentence "errors" are sometimes used for effect by skilled writers, would add to our understanding of the composing process.

6. Since errors seemed to occur when students were involved in trying to subordinate and coordinate T-units, it might be profitable to link studies of students' errors to studies of sentence-combining. The effects of practice in sentence-combining may increase syntactic error rate over the short term because students are trying new skills (Maimon & Nodine, 1978), but this study indicates that errors may be related to a lack of skill in combining ideas. Students' errors should be measured after longer periods in which sentence-combining was part of the instruction to see if mastery in ways to combine ideas results in fewer errors in written composition.

APPENDICES

APPENDIX A

DESCRIPTIVE WRITING ASSIGNMENT ITEM, GRADES 7, 9, AND 11

Everybody knows of something that is worth talking about. Maybe you know about a famous building like the Empire State Building in New York City or something like the Golden Gate Bridge in San Francisco. Or you might know a lot about the Mormon Tabernacle in Salt Lake City or the new sports stadium in Atlanta or St. Louis. Or you might be familiar with something from nature, like Niagara Falls, a gigantic wheat field, a grove of orange trees, or a part of a wide muddy river like the Mississippi.

There is probably something you can describe. Choose something you know about. It may be something from around where you live, or something you have seen while traveling, or something you have studied in school. Think about it for awhile and then write a description of what it looks like so that it could be recognized by someone who has read your description.

Name what you are describing and try to use your best writing.

APPENDIX B

PERSUASIVE WRITING ASSIGNMENT ITEM

GRADES 7 AND 9

Imagine that your principal asked fo- suggestions about how to make things better in your school. Write a letter to your principal telling him just ONE thing you think should be changed, how to bring about the change, and how the school will be improved by it. You may address this letter to your real school principal, or if you wish, you may address your letter to Mr. Hopkins and sign your letter "Chris Johnson."

APPENDIX C

PERSUASIVE WRITING ASSIGNMENT ITEM,

GRADE 11

SUMMER ONLY

Need two high school students to work in large clothing store. $85 week, July and August. Write John Fried, Box 26078, *New York Times*, New York, New York 10017.

Chris Jones lives at 3600 Larch Street in New York, New York 10004. Chris has finished the junior year at Truman High School and has been looking for a summer job. Chris spotted this advertisement in the New York Times and has decided to apply for the job. Write Chris' letter of application to Mr. Fried.

APPENDIX D

INSTRUCTIONS FOR DESCRIPTIVE ASSIGNMENT

You may describe anything you wish to describe. You could write about such things as the State Fair, Reunion Tower, Texas Stadium, something around your school or your neighborhood, something in nature, or a person. These are just suggestions, write about anything that you would like to describe. Remember to include enough information to make your reader really "see" what you are describing. You will have this class period to complete the assignment. Perhaps you would like to think about your topic for a little while before you begin writing. Spelling will not be counted, but do your best writing.

APPENDIX E

INSTRUCTIONS FOR PERSUASIVE ASSIGNMENT, GRADES 7 AND 9

Do you know what it means to persuade? (Examiner waits for an answer.) Yes, when you try to persuade someone, you try to talk that person into believing as you do or into doing what you want them to do. You might try to persuade your parents to let you go somewhere, or you might try to persuade a friend to loan you some money. In this assignment you are asked to think of something that needs to be changed around your school and write a letter to your school principal to try to get him or her to bring about the change you wish. You are asked to write a letter for this assignment. I know you have studied letter form before and probably already use it correctly, but, for this assignment, what you say in the letter itself is the important thing. Do not spend your time on the letter form. You can address this letter to your real principal or to Mr. Hopkins as it says on the assignment page. Also, you can use your real name, or you can sign "Chris Johnson." As you know Chris can be a girl's name as well as a boy's. Your real principal will not be reading this

letter. Perhaps you would like to think about the assignment for a little while before you begin writing. Spelling will not be counted, but do your best writing.

APPENDIX F

INSTRUCTIONS FOR PERSUASIVE ASSIGNMENT, GRADE 11

Do you know what it means to persuade? (Examiner waits for an answer.) Yes, when you try to persuade someone, you try to talk that person into believing as you do or into doing what you want them to do. You have probably tried to persuade your parents to let you go somewhere or one of your friends to loan you some money. In this assignment you are asked to write to a Mr. Freid to apply for a job. You will want to try to persuade Mr. Freid that you are the best person for the job. You are asked to write a letter in this assignment. I know that you have studied letter form before and probably already use it correctly, but, for this assignment, what you say in the letter itself is the important thing. Do not spend your time on the letter form. You can use your real name or sign "Chris Johnson." As you know, Chris can be a girl's name as well as a boy's. Perhaps you would like to think about the assignment for a little while before you begin writing. Spelling will not be counted, but do your best writing.

APPENDIX G

INSTRUCTIONS FOR IDENTIFYING T-UNITS

1. Put your investigator number at the top of the T-unit count page.

2. Count the number of T-units in each paper. Number the T-units on the copy of the paper. Then write the number of T-units found on that paper beside the number of the paper on the T-unit count page.

3. Use the following instructions to count the T-units.

   A. A T-unit may be thought of as an independent clause plus whatever subordinate clauses or phrases are attached to or embedded within it. It is the smallest group of words in a piece of writing that <u>could</u> be punctuated as a sentence. The T-unit is the shortest grammatically complete sentence that a passage can be cut into without creating fragments. A compound sentence would consist of at least two T-units, but a complex sentence would consist of only one. Coordinating conjunctions joining T-units are considered part of the T-unit which they begin. See the examples from the two articles or from the examples of the letter to the Senator for models of T-unit segmentation.

   B. Remember, not every coordinating conjunction indicates a new T-unit since coordinating conjunctions can be used to coordinate elements (compound subjects, verbs, objects, etc.) <u>within</u> a T-unit.

   C. Where sentences are fused, divide where the second T-unit begins even though there is no punctuation. Remember, T-units are independent of punctuation.

   D. When you encounter sentence fragments, count them as part of the T-unit to which they belong (usually the preceding T-unit) if they do seem to belong to that T-unit. If the fragment would

be a complete sentence except for the omission of one word, count that fragment as a T-unit. Count appositive fragments as part of the T-unit they rename or describe. If a fragment does not fit any of these descriptions, do not count it in the T-unit count.

E. Sometimes relative pronouns used as subordinating conjunctions like "that" are left out, count clauses introduced by the understood subordinating conjunction as subordinate clauses.

F. The word "like" is used in student writing a lot. Of course, if it is used as a preposition, it will be counted as part of the T-unit in which it is found. Sometimes students use it as a subordinating conjunction instead of "as." This is not a correct usage of the word in standard English, but, for this analysis, count it as a subordinating conjunction. Of course, then it will also be considered as part of the T-unit in which it is found.

G. Coordinating conjunctions are "and," "but," "or," and "so." If "so" indicates "so that," count it as a subordinating conjunction instead. Also, consider "for," when it is used as a conjunction, as a subordinating conjunction.

APPENDIX H

INSTRUCTIONS FOR IDENTIFICATION OF RUN-ON SENTENCES AND SENTENCE FRAGMENTS

Sentences are identified as beginning with a capital letter and ending with a terminable punctuation mark (period, question mark, etc.).

RUN-ON SENTENCES

1. Count sentences as run-on sentences if they are fused sentences, comma splices, or consist of more than two T-units joined by coordinating conjunctions.

2. Do not count cases whre two T-units are joined by a coordinating conjunction without a comma. These are run-on sentences in standard usage but are not counted in this analysis.

3. In this analysis, "and," "but," "or," or "so" can be used as coordinating conjunctions except when "so" means "so that." "For" is not counted as a coordinating conjunction.

4. When no terminable punctuation exists at the end of a T-unit, and the first word in the next T-unit begins with a capital letter, unless it is the pronoun "I," count these as correct sentences. That is, the capital indicates that the student may have been starting another sentence and simply left out the period. If the word beginning the next T-unit is "I," count this as a run-on sentence.

FRAGMENTS

1. Any word string which begins with a capitalized word and ends with a terminable punctuation mark and fits into any of the following categories is considered a fragment.

A. a dependent clause;

B. a phrase;

C. a word string without a subject or verb.

APPENDIX I

EXAMPLES FROM STUDENTS' COMPOSITIONS OF RUN-ON SENTENCE PATTERNS

Pattern 2

Grade 7

It gets very cold when you ski, you can get frostbite.

He is in almost all the high classes and is very smart, he will really be someone someday.

Grade 9

Insects and crawling bugs also come out at night, if you're not protected they could eat you up.

Grade 11

Forms and colors burst into beauty words and symbols become clumsy and pathetically unable to describe the rapture.

I learn easy the only thing you would have to do is show me once and I can do it.

Pattern 3

Grade 7

I think we should call the classes up by grades or sections, the way we do it now it takes too long to get through the line.

The Indians feared the land they thought it was a Holy area.

I would like to have a longer lunch-time-play-period as many other students would, it would mean shorter class periods and a shorter time to be here at school for you and me.

Grade 9

The people of Juaraz, Mexico rely very much on the Rio Grande, they often bathe in it, fish in it, and swim in it.

One of the best features of the fair is the midway, it is where all the colorful rides and games are.

I think parent conferences should take the place of detention, it's less embarrassing and it's not as strict.

I like to fly it's better than driving you get where you are going faster.

I believe we the students of this sdhool should be allowed more time during lunch, many of us are often barely getting out of the lunch line when before you know it we only have a few minutes to eat.

We, the students, feel that we are obligated to use the lounge as well as the teachers, they are not the only ones who get tired at school.

Grade 11

You have no need to worry, the problem has been solved.

This sounds like my kind of job, I have had some previous experience in working in clothing stores.

Downtown Dallas is just like many other big city downtowns, it has tall buildings, clothing stores, restaurants, and other things.

Pattern 5

Grade 7

The one thing that I think about is early day I think instead of doing the periods like we go to 1st, 2nd,

and 3rd period in order then we skip 4th period and go to 5th and 6th then we go to 4th period and then we go to 7th period . . . .

Students go to the office for fighting, then they go home.

She was cleaning off one table right after another (one minute per table), the bell rang, she ran up there dropping rolls, plates, spilling water, tea and coffee.

The plate is welded to the boot, you put your wheels on it when you put your axels in.

Between the bearings you put a washer in, then you can put your wheels on.

I went to Danny's and I ordered hamburger, fries, and soda then we went to the Motel and went swimming (it was dark when we came back).

One day my brother and I were having a pillow fight and my mother tried to stop us but we hit her and she got in the pillow fight my father tried to stop us and we hit him and he got into the fight too.

Grade 9

First we ordered our pizza at the counter, then you have a wide variety of places to eat, like in booths, at tables, in a dining room atmosphere, or in a living room.

The first thing that happened is that we got lost and had to take another route through the mountains and lots of roads that were all beaten up and bumpy well we finally got there . . . .

You are very comfortable all of a sudden the plain is in motion you take off you're way up in the air 20,000 feet.

Grade 11

I had barely made it to my first period class, I walked in and sat down.

Pattern 6

Grade 7

I remember the day it was on a Wednesday.

I have a sister named Debbie she is nice sometimes but mean too.

There's a great cliff over in the woods by my house that we climb or repell up and down on weekends, it's about 50 feet tall.

This tree is very big, it has green leaves.

Grade 9

I belong to a special group of people, they are called the Youth Choir.

We went over to Disneyland it's so big there and very beautiful.

We finally saw the Disneyland Castle, it was very big.

My ski boat is very big and luxurious it has light tan with chocolate brown racing stripes.

The engine is in very good condition, it's a 4 barrell 350 cubic inch.

It's a large building its about 5 stories tall.

The clouds are very beautiful they look like snow.

Both the captain's chair and the passenger's seat have two or more seats behind them, they are back-to-back seats.

Grade 11

East Dallas has a nice lake you can visit and relax in, it is called White Rock Lake.

There is another stadium in these suburbs called Loews, it is artificially turfed.

I am a hard worker, I am prompt and responsible.

Pattern 7

Grade 7

I went to Galveston and seen a fancy hotel that was shaped as a ship it was big it had a swimming pool shaped as a crab and it had slides.

(ocean) It is very wavey it is blue and very wet and you can swim in it.

It is a restaurant, it lights up at night, it's a cemented building going up towards a big, huge, round, ball.

He is a real businesskid he sells candy and he can make thirty dollars a week easy just during school.

The American Falls goes straight across, it has little bushes sticking out, tons of water fall every minute, and it hits the ground so hard it bounces back up.

The Canadian Falls are most beautiful, it looks like it has lime or granite underneath the water on the rock, the funny thing about it is it's shaped like a horseshoe, it's commonly called Horseshoe falls.

Grade 9

The thing what I'm describing is long and it has a lot of seats to it so a lot of people can get on and ride, also it has a lot of tracks some of them have something like a hill and some of them don't and it is very scary and fun, and it has about two big loops on it and it is blue, the name of it is the shock wave.

It's wide and big it is salty and dirty has seashells in it and people all around it.

At the Mardi Gras they throw beads, balls, little whistles, play money, they throw little stuffed animals.

There are pool tables, gun fight games, space war games, and lots more, there is even a fortune teller machine.

He's kind of tall compared to the other four we have, he weighs a little over 100 lb., he is the most meanest of them all, but of course all of them are mean but he has the badest temper.

For those who are newcomers to Dallas and have never been to the fair, there stands a large over 10 ft. tall man, he wears cowboy boots, a red and white checked shirt and jeans, he also has a cowboy hat on.

Grade 11

As we were leaving the last day, I noticed the air field, it was small with one airway and a building containing three rooms for customs, passenger waiting area, etc.

The . . . High School is not all that beautiful and it is very small but it does have a very creative look to it and that does make people very comfortable in the . . . High School.

Pattern 8

The roads are rocky and made of dirt, there are no curbs like in the city.

The band is great I just think you should consider a little more to it.

We estimated an eight-hour drive it took thirteen.

Some dogs can save lives and work with the fire department others are just setting around the house and acting lazy.

Pattern 9

Grade 7

The Shock Wave is fun too, to me it is scary, it's sort of like a roller coaster except it turns three loops.

(Disneyland) I has rides, and food to eat like hot gods, cotton candy, and it was fun it was just like the fair.

It was really fun, afterwards we went to Busch Gardens, its a museum.

I went to the Bahamas I had fun on the plane ride I saw sea shells, fish and the river boat I had fun in the Bahamas.

I had real fun later we went to Mount Vernon where George Washington lived.

Grade 9

It is a lot of fun you get on it and jump on it.

But Bourbon Street is unbelievable just think it is crowded all the time but we still had lots of fun.

You can jump as high as the trees it's lots of fun.

Pattern 10

See you, I hope to speak to you soon.

. . . and you know how much you stress good grades well that's my suggestion.

Dallas is fun to live in that it is the point.

Well that's all for now until later hope you enjoy it.

Pattern 11

He has a big nose, well I can't really say big it fits on his face and all but its overly large.

And in the summer you can take classes, like tennis, soccer, ballet dancing I know other parks have the very same thing, but I like Keist Park.

Pattern 12

I've watched and timed her when she buses tables she does it so fast that I hardly get a chance to look around between seconds.

It was real exciting coming back we stopped and saw my Aunt and Uncle for a while and then drove home.

And we had a big bon fire after we came down from the mountains we went to a square dance.

Pattern 13

It shined, it gleamed, it was a sparkling thing.

The grass turns green, the flowers bloom and the leaves begin to bud.

She doesn't talk about people, she's a lot of fun to be with, and she would walk an old lady across the stree if there was one there to walk.

The sun slowly sets, my love expands.

I have never seen him walking, I have never heard him speak.

He is so thin, he is so quiet, he is so lost.

APPENDIX J

DESCRIPTIVE FRAGMENTS

Grade 7

My reason is because a lot of people have a lot of things to do in the afternoon. Like going to the dentist, practice, and other sorts of events.

Fairfield is a very neat place. There is deer that come and eat out of your hand. Armadillo you can chase. Possum you can catch.

I have seen a mountain. A mountain that is hilly and rocky and having green grass growing. The blue fresh water steams that flow.

Grade 9

It is very tall. In fact the tallest monument in the United States.

Many attractions are at the arch. Museums, Restaurants, Jazz bands, blues bands and many rideable ships.

And there are also lots of games to play and many things to win. Beautiful things. Such as a big stuffed bear, and anyone can win.

On the faces of the mountain, up till 12,500 feet, are a wide assortment of trees. Pine, Blue Fir, Evergreen, Oak, Walnut and Bristlecone just to name a few.

Grade 11

Down the road about thirty miles south of the city, there stands a house that brings back many memories to my family. The house that we once cherished and nourished to its full extent.

Whipcream melts in your mouth. White as fresh printed paper.

The importance of the type of sneaker is as important as the game you play. The fresh rubbery smell of the soles. The canvas still tough and unstretched. The pattern in the sole still in deep grooves and lines.

Behind the college is a wooded area. I went exploring one day and found a most beautiful spot. A creek bed the color of marble.

ADVERBIAL FRAGMENTS

Grade 7

Sally complains that she doesn't have enough time to get to class. Because, four of her classes are downstairs and three are upstairs.

It was a very pretty sight and I'll never forget it. Because for me it was a real treat.

Grade 9

The school could change a lot if the days were shorter. And if we could chew gum in class.

If your parents go out there with you, you don't have to stay with them. Because they have fun places for the kids and teenagers like Penny Whistle Lane and other places.

The restaurant rotates and is covered with a reflective glass. Because at night there is a display of lights that is really pretty.

I think that it would improve the school and it would tone down the work for janitors. Because they are the ones who have to clean up the stuff.

Grade 11

I have had lots of experience in working with clothes. As my mother works at Joske's and I help her out a lot.

Someone who is a first year student takes sculpture, printmaking, jewelry, pottery, and painting. Each for a six weeks period.

Walking downtown happened to be one of the best experiences of my life. As I saw the most beautiful girl in my life.

We made him a dog house, but he doesn't even go inside of it. Even when it rains.

Not only is it cool, but it is also quiet. Except on occasions when a vehicle passes over the bridge.

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