

MODE OF DISCOURSE EFFECTS ON WRITTEN SYNTACTIC COMPLEXITY

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Kellogg Hunt's T-unit hypothesis has been used as the basis of much of the research on the syntactic elements of writing development. Hunt's (1965, 1970, 1977) assertion that mean words per T-unit (W/TU) tends to increase with age and skill of the writer has been supported by other researchers (Blount, Johnson, & Frederick, 1968; Braun & Klassen, 1973; Loban, 1976; O'Donnell, Griffin, & Norris, 1967; Stewart, 1978; Veal, 1974), and Hunt's indexes of syntactic maturity have been used as "norms" in numerous methodological studies of sentence combining (Maimon & Nodine, 1978; Mellon, 1969; O'Hare, 1973; Stotsky, 1975).

Hunt (1965) used written products from students' regular class assignments; so many types of writing were represented in his studies. He did not identify the purposes or types of writing represented except in general terms. Recent attention to the importance of purpose in writing has led some researchers to examine the effect of factors such as mode of discourse or purpose on syntactic complexity in writing. San Jose (1973) and Perron (1977) examined the effect of mode of discourse on the syntactic complexity of the writing of elementary school students. Results of both studies indicated that mean W-TU length was greatest in argument, followed by exposition, narration, and description. Rosen (1969) found that high school students produced longer T-units in referential writing than in expressive writing, and Crowhurst and Piche (1979) found that T-unit length was significantly greater in argument than in narration at both grades 6 and 10.

Crowhurst (1980) examined teachers' quality ratings of papers in various modes and found that 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 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 other elements. She 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.

The present study was designed to examine the effect of mode of discourse and age and ability of student writers on syntactic complexity. The two modes of discourse chosen for this study were persuasion and description. These modes were selected because, in the studies of San Jose (1972) and Perron (1977), persuasion was found to be the most syntactically complex and description was the least syntactically complex. Therefore, it was proposed that maximum difference between the two modes would be exhibited.

Two other aspects of development in writing were considered in this study, composition length and rate of syntactic error. A positive relationship between composition length and development in writing has frequently been noted (Diederich, French, & Carlton, 1961; Gebhardt, 1978; Stewart & Grobe, 1979). In this study, words in each composition were counted and length of composition was considered a variable in measuring growth in writing.

Two types of sentence errors were chosen for analysis in this study. These two errors, sentence fragments and run-on sentences, were chosen for analysis in this study because they are common

errors in students' writing (Kagan, 1980; Shaughnessy, 1977) and because they probably reflect students' efforts to consolidate T-units.

Research Questions

This study addressed the following research questions.

1. What is the effect of mode of discourse on syntactic complexity, length of composition, and incidence of sentence-production errors?
2. Are there grade level differences in syntactic complexity, length of composition, and incidence of sentence-production errors?
3. Are there ability-group differences in syntactic complexity, length of composition, and incidence of sentence-production errors?
4. Is growth in syntactic complexity associated with changes in rates of sentence-production errors, grade level, mode of discourse, and syntactic complexity?

Method

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, one in the descriptive mode and one in the persuasive mode. The total number of writing samples analyzed for this study was 590. Two of the classes at each grade level were identified as the high-ability group, and two were identified as the low-ability group. These designations were made based on the national norm percentiles of the reading and language subtests of the *Iowa Test of Basic Skills* and the *Test of Achievement and Proficiency*.

The writing assignment items used in this study were selected from those developed for the 1973-1974 National Assessment of Educational Progress (NAEP). Students in all three grade levels wrote on the descriptive item. Students in grades 7 and 9 wrote on a persuasive item in which they were asked to write to the school principal about a change they would like to make in their school, and the 11th graders wrote to apply for a job.

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.

Analysis of the Data

To determine composition length, words were counted for each composition. Compositions were segmented into T-units using criteria developed by Mellon (1969) and mean W-TU was determined for each paper. 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-units (F/TU).

Means and standard deviations were determined for each grade level, each ability level, and each mode of discourse for the four dependent variables, composition length (W), words per T-unit (W/TU), run-on sentences per T-unit (R/TU), and fragments per T-unit (F/TU). A $2 \times 2 \times 3$ analysis of variance was done. When a significant F-ratio was obtained, Tukey's

Length of Composition

The analysis of variance yielded a significant main effect for mode of discourse, $F(1,578)=159.05$, $p < .0001$, grade level $F(1,578)=89.48$, $p < .0001$, and developmental level $F(1,578)=47.00$, $p < .0001$. Tukey's test for 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, 11 and 7 $p < .05$. The longest compositions were written by the 11th-grade students; the next in length were written by the 9th-grade students; and the shortest papers were written by the 7th-grade students.

Syntactic Maturity

The analysis of the variance for words per T-unit yielded a significant main effect for mode of discourse, $F(1,578) = 19.11$, $p < .0001$. Tukey's 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 $F(2,578) = 16.63$, $p < .0001$. An analysis of simple effects revealed that there were significant differences among grade levels in the descriptive mode. This analysis yielded a significant main effect for grade level $F(2,292) = 47.64$, $p < .0001$.

Tukey's 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 grade 11 contained more W/TU than the 9th-grade papers, and the 9th-grade papers contained more W/TU than the 7th-grade 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 item. The item used in grades 7 and 9 was clearly persuasive, calling for students to persuade the principal of a needed change in the school. The 11th-grade item in which students wrote for a job elicited many a sentence in which students gave information about where they might be contacted and other information. This explanatory information was much less complex than the persuasive parts of the letters and may have accounted for the lower mean W/TU in the 11th-grade writing.

Run-on Sentences

The analysis of variance for run-on sentences per total T-units yielded a significant main effect for grade level $F(2,578) = 8.66$, $p < .01$ and developmental level $F(1,578) = 38.36$, $p < .0001$.

Tukey's multiple comparison tests indicated that there were significant differences $p < .05$ between the two modes of discourse, between the two ability 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.

Sentence Fragments

The analysis of variance for fragments per T-unit yielded a significant main effect for ability level $F(1,578) = 17.67$, $p < .0001$. The Tukey's multiple comparison tests indicated that there were significant differences between grades 9 and 11, $p < .05$. Compositions from grade 9 contained significantly more fragment errors than compositions from grade 11. Papers from the high ability level contained significantly fewer fragment errors than those from the average developmental group. There was no significant difference between the two modes.

Conclusions

Results of this study lend support to the following conclusions.

1. Other researchers (Diederich et al., 1961; Gebhardt, 1978; Stewart & Grove, 1979) noted a positive relationship between composition length and age and ability of the student

writer. In this study, the length of the students' compositions increased at each grade level and in the higher ability groups.

2. Mode of discourse does have an effect on syntactic complexity. 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 is expressed syntactically by the subordination of clauses and less-than-clausal elements. Mode affected length of composition also. Compositions in the descriptive mode were longer, but this may have been because the persuasive assignment was in the form of a letter.

3. Mode of discourse also had an effect on run-on sentence errors. There was a larger percent of run-on sentences in the descriptive mode. If persuasion does call for more subordination than description does, it follows that descriptive writing would rely more on the coordination of T-units 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 find more errors in the persuasive mode.

4. Developmental differences among the grade levels were not present in the persuasive mode but they were in the descriptive mode. The findings of Hunt (1965, 1970, 1977), O'Donnell et al. (1967), and Mellon (1969) concerning development in mean W/TU were supported by data from the descriptive mode but not from the persuasive mode. All scores in persuasive writing were high. The 7th-grade scores were as high as the 9th- and 11th-grade scores. Perhaps when the rhetorical situation calls for it, the writing of younger writers can be as complex as that of older writers. The drop in 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 grade.

5. The oldest students and students in the higher within-grade group made fewer sentence errors. Students demonstrated developmental tendencies in their mastery of the "print code." Differences were not great between grades 7 and 9. Both types of errors dropped off dramatically in the 11th-grade papers.

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

Implications

The following implications were made from this study.

1. The purposes people have when they compose probably affect the most basic decisions they make when composing. In this study, purpose of mode affected even such a basic element as syntactic choice. Purpose probably affects other choices in writing. Much writing instruction and research has assumed that "good" writing is all the same. Recent theorists propose that the choices we make when we write are based upon what we hope to achieve in a particular piece of writing. Purpose in writing is not considered in Hunt's work and is often not considered when indexes of syntactic maturity are applied to writing samples. This study lends support to the idea that purpose must be considered as an important factor in writing research.

2. Good writing by adults is characterized by conciseness. Skilled writers work very hard to find the best way to say the most they can in the fewest words. Sometimes this demand for conciseness is conveyed to young writers. This study indicated that verbal skill by young writers is often demonstrated by volume of words. Perhaps this need to write many words reflects verbal development and should not be discouraged in

young writers.

3. Run-on sentence errors seem to occur when students repeat subjects or other sentence elements in order to sustain ideas across T-units. Developmental practice in ways to consolidate to create fewer, longer T-units may help students in that they do not have to sustain ideas across so many T-units. Thus, sentence combining may be a useful technique for helping students eliminate certain kinds of errors.

Since errors seemed to occur when students were involved in trying to subordinate and coordinate clauses, 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 over the short-term because students are trying new skills (Maimon & Nodine, 1978), but this study indicated that the errors may be related to a lack of skill in combining ideas. The error sentences were also characterized by many short T-units beginning with personal pronouns. Hunt (1965) proposed that the writing of young people may contain so many personal pronouns because of the necessity to maintain meaning across T-units. This stringing together of short T-units was characteristic of the run-on sentences in this study. It has often been difficult to measure progress in writing after instruction in sentence combining. Perhaps the study of 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 means fewer errors in written composition.

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