

AN ANALYSIS OF THE GRAMMATICAL STRUCTURES IN THE
WRITTEN LANGUAGE (ENGLISH) OF CHILDREN IN
GRADES FOUR, FIVE, AND SIX

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1. INTRODUCTION

Pupils' language competence can be determined through an analysis of their performance or output data. This can be done by using quantitative and qualitative language measures. The former attempts to say something about the complexity of the language use by giving average scores, i.e., mean length of sentence or MLS and minimal terminable unit or T-unit (Davis, 1973; Van der Geest *et al.*, 1973). An appraisal of the syntactic quality of language use, which can be provided only by a descriptive measure based on an inventory of all factors contributing to the complexity of the sentences produced, can establish what exactly contributes to the syntactic complexity of an utterance (Van der Geest, 1974).

This study utilized the mean length of the T-unit and a taxonomy of structural descriptions to measure pupils' competence in the written language.

2. PROBLEM

While several studies have been made on Filipino children's written language, they centered mostly on error analysis. In this study, emphasis is on the grammatical structures that are actually used by the learners in their written utterances and the complexity of these structures.

This study analyzes the written grammatical structures produced by children in grades four, five, and six. It also attempts to measure how the syntactic complexity of the grammatical structures, as reflected in length of minimal terminable units, differs with respect to sex and grade level of subjects. Since the range of items that can be observed in linguistic analysis is unmanageably wide, only the following aspects of grammar have been looked into in this study: the constituents of the noun phrase and the verb phrase constructions, the kinds of sentence patterns, the kinds of sentences according to clause structure and the kinds of subordinate clauses.

3. METHODOLOGY

Language samples were taken from one hundred fifty children, fifty each from grade four through grade six, in the Philippine Normal College Laboratory Elementary School in the school year 1976-1977. The subjects, drawn at random, consisted of seventy-five boys and seventy-five girls.

The language samples used consisted of children's story-versions of two short films, *The Story of Ping* and *Millions of Cats*. Each film was shown to the subjects twice to ensure good coverage of the content.

All data gathering sessions were held at the PNC Audio-Visual room in the morning.

The films were viewed in groups of fifty with pupils from grade four coming in first, followed by those from grades five and six. For the second session, which took place a week later, the schedule was counterbalanced.

The two films were shown to the subjects with the sound tracks turned off so that the narration would not influence the vocabulary and the grammatical structures the children would use in their written stories.

Each session took almost an hour and revolved around these activities: orientation (7 minutes), first viewing (10 minutes), second viewing (10 minutes) and story-writing (30 minutes).

All written responses were grouped according to sex and grade level of subjects. The pupils' written work was segmented into minimal terminable units for linguistic analysis. This segmentation was necessary because 'children have a strong tendency both in oral and written language use to string together unrelated sentences, to use run-on sentences, or to coordinate them continuously as in the well-known *and then . . . and so . . . but . . . and then . . .* constructions' (cited by Van der Geest *et al.*, 1973).

A T-unit which is defined as a syntactic unit made up of one main clause with its subordinate construction(s) is comparable to the 'sentence or utterance' of McCarthy and of Davis, 'verbalization' of Templin and 'expression unit' of Williams. A sentence like: *On his way home, he was surprised because he saw millions of cats* (.) is considered one minimal terminable unit. A coordinate sentence which consists of two main clauses is divided into two T-units. Thus, *He tried to search for the boat, but he failed to* (.) contains two T-units. A coordinating conjunction that joins two independent predications is regarded as belonging to the second terminable unit (O'Donnell *et al.*, 1967).

Following the procedure of previous researchers, e.g., Templin (1957), O'Donnell *et al.*, (1967), and Wall (1974), compound nouns like *living room* were counted as consisting of two separate words. Contractions like *couldn't* were also counted as two separate words. All the grammatical units were marked to separate them from the ungrammatical ones. To determine the syntactic complexity of grammatical structures, the number of grammatical T-units and the total number of words per grammatical syntactic unit were noted down. The average length of the T-unit was computed by dividing the total number of words in T-units by the number of T-units (Simmons, 1976). The data on the average length of T-units per child were subjected to a two-way analysis of variance to determine simultaneously its relationship with sex and grade level.

Following completion of the T-unit count, each syntactic unit was partitioned into grammatical relations, namely the subject and the predicate. The constituents of the noun phrase and verb phrase constructions were analyzed only when they were grammatically correct. Detailed structural descriptions were assigned to the noun phrases functioning as subject, as object of verb, as predicate nominal and as object of preposition. The components of the verb phrase were looked into. The frequencies of occurrence of these various constructions were tallied and ranked. Other aspects of grammar which were investigated were the kinds of sentence patterns, the kinds of sentences according to clause structure and the kinds of subordinate clauses. The rates of occurrence of these syntactic structures were tallied and ranked, and subjected to a *chi-square* test of independence to determine the association of the two variables — sex and grade level — in the production of those structures.

4. FINDINGS

4.1. GRAMMATICAL STRUCTURES

The constituents of the noun phrase construction showed structural heterogeneity. The noun phrases, which may function as subject of the sentence, as object of the verb, as predicate nominal or as object of the preposition, were manifested in a variety of forms (cf. Table 1). They varied enormously in their complexity from a simple head construction to a head expanded or elaborated to a considerable degree by modifiers. Sprinklings of phrasal and clausal structures were also found in the data.

Subject noun phrases were predominantly manifested as head, particularly personal and impersonal pronouns. The head marked by determiner(s) ranked second. It is of interest to note that the subjects exhibited knowledge of a variety of determiners. Single-word modifier co-occurring with a determiner and a head ranked third. Coordinate construction and head elaborated by a single-word, phrase or clause modifier appeared in the data. The object-of-the-verb noun phrases were most frequently expressed as a head preceded by determiner(s). Heads of all types – nouns, proper nouns, pronouns and gerund—ranked next. Expansion of the head by the occurrence of an adjectival phrase and one or more determiners ranked third. It can be observed that the occurrences of phrase and clause modifiers are more in the object of verb noun phrases than in the subject noun phrases. Moreover, all the fourteen categories of the noun phrases were represented in the data. The object-of-verb noun phrases in these samples appeared to be structurally more complex than subject noun phrases.

Predicate nominals were mostly realized as heads, particularly proper nouns. A single-word modifier expanding a determiner and a head was the next most frequently used post-copular noun phrase. The head marked by a determiner in most cases an article, ranked third. Four categories of the more complex structures of the noun phrase were not represented in the data. Compared to other forms of noun phrases according to their functions, predicate nominals appeared to have the simplest or the least elaborate structure.

Objects of the preposition were most commonly manifested as a determiner-head. Heads ranked next; single-word modifier co-occurring with a determiner and head, third.

Elaboration of the noun phrase may be attributed to the presence of the different modificational features such as determiners (most widely distributed), single-word modifiers, phrase modifiers, clause modifiers (least frequently used), and various combinations of these modifying elements.

It seems that although most of the different structures of the noun phrase were present in the data of all the three grades, those structures used by grades five and six appeared to be more complex than those employed by grade four primarily indicated by an increasing number of phrase and clause modifiers in the noun phrase structure of the former (cf. Table 2). Probably this difference can be explained by the greater amount of formal grammar instruction that grades five and six get in their language subject. This formal instruction must have made them more aware of sentence structures as they use them in writing. It can be said that the noun phrases produced by this sample population seem to equate with those of the adult grammar, although some structures are still in the process of being acquired. The fact that phrasal, i.e., gerundive phrase and infinitive phrase, and clausal, i.e., noun clause, occurred in the data, even though infrequently, shows that pupils over this grade level range are beginning to acquire and exhibit a more complex syntactic structure of the noun phrase.

4.1.1. THE CONSTITUENTS OF THE VERB PHRASE CONSTRUCTION

The corpus of data available for the study yielded fifteen specific types of verb phrase. When further classified, six types came out in the following order according to

rate of occurrence: transitive verbs, verbs *to be*, intransitive verbs, modals, verb complement+verb, and copulative verbs. It is interesting to note that four sub-classes of transitive verbs were represented, namely: regular transitive verb (most frequent), middle verb, verb+preposition and verb+particle (least frequent).

The predominance of the transitive verbs in the corpus can be explained by the preponderance of the sentence pattern, N Vt N1, a sentence mold that requires a transitive verb.

The data on predicate adjectives showed a number of different forms. Of these, the single-word predicate adjective ranked first; intensifier+adjective, second; and finally, coordinate construction. Predicate adjective modified by one or two single-word and phrase modifiers appeared infrequently in the data.

The corpus on adverbial modifiers shows that prepositional phrases occurred most frequently. Others were single-word adverbs, noun phrases, adverbial clauses, infinitive phrases, and present participial phrases. The referential scope of adverbials was predominantly locative.

The data suggest that the adverbials used by the children throughout the grade level are structurally complex as shown in their preference for phrases over single-word adverbs. The fact that clauses were used frequently adds to the structural complexity of the verb phrase. Notably, the past participial phrase elaborating a verb was not found in the written work of the subjects. We can, therefore, hypothesize that this structure, together with those of the infinitive phrase and the present participial phrase, is a later development as adverbials in the language of children. The data also show that the rate of occurrence of the adverbials increases with grade, and with girls, in general, tending to use them slightly more often than boys.

4.1.2. THE KINDS OF SENTENCE PATTERNS

Found to be the most predominantly used pattern was the N Vt N1; followed by N Vi; N V *to be* Adj; N V *to be* N3; *There V to be* N. The structures least used were N Vc Comp., N V *to be* Adv. (loc.) and N Vt N1 N2.

Except in the pattern with the highest frequency, that is, N Vt N1, grade level and sex were found to be statistically independent of each other in the production of sentence patterns.

The high rates of occurrence of the N Vt N1 and N Vi patterns can be attributed to the greater amount of formal instruction given to pupils on these sentence molds.

It is interesting to note that the *There V to be* N pattern was used only as an introductory sentence in pupils' written story-versions.

4.1.3. THE KINDS OF SENTENCES ACCORDING TO CLAUSE STRUCTURE

Of 1,779 grammatical T-units, 85% were Simple Sentences; 10%, Complex Sentences; and 5%, Compound Sentences. The fourth type, the Compound-Complex Sentence, was not present in the written work of the children. This indicates, therefore, that even by the time a pupil in the PNCLES reaches grade six, he has yet to learn the last sentence type. It can be hypothesized that this sentence type will be acquired and developed only in later years or grade levels. The preponderance of the complex sentence over the compound one can be explained by the high occurrence of adverbial clauses in the data. Although the corpus, in general, contained innumerable *and's* and *but's*, those constructions did not fit the requirements for a compound sentence type.

While the data seemed to show that girls tended to use slightly more advanced types

of sentences than boys, and that the grade six children could handle more complex sentence type than the others, these differences were not found to be statistically significant in the computed *chi-square test*

4.1.4. THE KINDS OF SUBORDINATE CLAUSES

The process of subordinating sentences entails a more sophisticated knowledge of grammar, particularly that of transformational operations. A clause used as a substantive or a modifier increases the structural complexity of an utterance.

Four hundred fifty-six subordinate clauses classified as nominal clause, adjectival clause, and adverbial clause appeared in the data. Adverbial clauses were the most frequently used; followed by the Nominal Clauses; and the adjectival clauses, the least frequent.

Although substantial increases in the rates of occurrence of subordinate clauses by grade and by sex can be observed from the data, these increments, however, were not statistically significant except in the production of adjectival clauses. The increased number of subordinate clauses by grade may explain the increments in the length of T-units from grade four to grade six, since subordination is an indicator of sentence complexity (Davis, 1973).

When adverbial clauses were further classified according to what they indicate, it was found that adverbial clauses indicating time ranked first; reason or causal, second; manner, third; and miscellaneous type (to accommodate clauses of place, purpose, result and condition), the least.

4.2. SYNTACTIC COMPLEXITY OF GRAMMATICAL STRUCTURES

The length of minimal terminable units increased significantly with advance in grade level. This suggests that pupils in grade six could write longer T-units than grade five subjects while grade five pupils could produce longer syntactic units than their grade four counterparts. It indicates that performance of the subjects varied as an effect of grade level.

In comparing the length of T-units by sex, no significant differences were found. The sex of the subjects did not significantly influence the length of T-units. There was certainly no evidence that girls showed an overall superiority to boys in complexity of grammatical structures or vice-versa.

No-significant interaction effect was found between sex and grade level in the length of T-units.

Other findings: Of the total T-unit output covering the grade level range, only 24% was found grammatical. This shows that the subjects under study have only partially acquired the structures of the English language on the sentential level.

A grade four pupil at the PNCLES could average 8.48 grammatical T-units in an hour with 6.88 for boys and 10.00 for girls. A grade five pupil could produce 12.92 T-units, 9.24 for boys while 16.60, girls. A sixth grader could write 14.18 grammatical T-units with boys averaging 12.08 and girls, 16.28.

These findings, however, cannot yet be considered as norms, and can only be used as bases of comparison for future researches.

Interestingly, the number of the grammatical T-units increased with advance in grade level. The girls produced more grammatical T-units than boys. There was no signi-

ficant interaction effect between sex and grade level. Apparently, these variables are independent of each other.

The most frequent grammatical error at all grade levels was the use of wrong tense. The use of wrong preposition and the preponderance of the so-called *and* sentence ranked second.

5. CONCLUSION

The scope of grammatical structures that pupils in grades four to six have mastered and can actually produce cannot be underestimated. The major sentence constituents, specifically the noun phrase, were manifested in a variety of forms. The expansion or the elaboration of the noun phrase and the verb phrase offers insights into what qualitatively contributes to the structural complexity of pupils' written utterances. In this study, it appears that the pupils' competence in the grammatical structures of the English language approximates that of the adult. Also, the range of structures exhibited in the written work of pupils shows that they have acquired a fairly adequate stock of patterns with which to express themselves.

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Table 1

Summary of Structural Descriptions of Noun Phrases

CODE	STRUCTURES
A. Head	
A-1	N
A-2	PN
A-3	Pro (pers. & impers.)
A-4	Pro (indf.)
A-5	Pro (dem.)
A-6	Ger.
B. Det + Head	
B-1	reg. det (art) + N
B-2	reg. det (dem) + N
B-3	reg. det (gen) + N
B-4	pre art + reg. det (art) + N
B-5	pre art + reg. det (gen) + N
B-6	pre det (quan) + N
B-7	pre det (quan) + pro
B-8	pre det + reg. det (art) + N
B-9	pre det + reg. det (gen) + N
B-10	post det (car) + N
B-11	reg. det (art) + post det + N
B-12	post det + conj + post det + N
C. Single-word Mod + Head	
C-1	Adj + N
C-2	Adj + PN
D. Det + Single-Word Mod + Head	
D-1	reg. det (art) + Adj + N
D-2	reg. det (gen) + Adj + N
D-3	reg. det (art) + n + N
D-4	reg. det (art) + <i>-ing</i> + n
D-5	reg. det (art + <i>-ed/ -en</i>) + N
D-6	pre art + reg. det (art) + Adj + N
D-7	pre det + reg. det (art) + Adj + N
D-8	post det + Adj + N
D-9	reg. det (art) + post det (compa.) + Adj + N
D-10	reg. det (art) + Adj + Adj + N
D-11	reg. det (dem) + Adj + Adj + N
D-12	pre art + reg. det (art) + Adj + Adj + N
D-13	reg. det (art) + Adj + conj + Adj + N

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D-14	reg. det (art) + Adj + Adj + Adj + N
D-15	reg. det (art) + Adj + Adj + conj + Adj + N
D-16	reg. det (gen) + Adj + Adj + Adj + Conj + N
D-17	reg. det (dem) + Adj + Conj + Adj + Adj + N
D-18	reg. det (art) + ints + Adj + N
D-19	reg. det (art) + lim + Adj + N
D-20	reg. det (art) + ints + Adj + conj + Adj + N
D-21	reg. det (art) + ints + Adj + Adj + Adj + N
E. Phrasal	
E-1	expressions
E-2	inf phr
E-3	ger phr
E-4	PN + appos.
E-5	reg. det (gen) + N + appos.
E-6	pre art + reg. det (gen) + N + appos.
E-7	reg. det (art) + Adj + N + appos.
F. Head + Phrase Mod	
F-1	N + inf phr
F-2	Pro + AdjP (pp)
F-3	Pro + AdjP (pres. part)
G. Det + Head + Phrase Mod	
G-1	reg. det (art) + N + AdjP (pp)
G-2	reg. det (art) + N + AdjP (pres. part)
G-3	reg. det (art + N + AdjP (past part)
G-4	reg. det (art) + N + AdjP (inf phr)
G-5	reg. det (gen) + N + AdjP (pres. part)
G-6	pre art + reg. det (art) + N + AdjP (pp)
G-7	pre det + reg. det (art) + N + AdjP (pp)
G-8	pre det (quan) + N + AdjP (pres. part)
G-9	pre det (quan) + N + AdjP (past part)
G-10	post det (car) + N + AdjP (pp)
G-11	post det (car) + N + AdjP (pres. part)
G-12	post det (car) + N + AdjP (past part)
G-13	reg. det (art) + post det + N + AdjP (inf phr)
G-14	reg. det (art) + post det + N + AdjP (inf phr)
H. Single-word Mod + Head + Phrase Mod	
H-1	Adj + N + AdjP (pp)
I. Det + Single – word Mod + Head + Phrase Mod	
I-1	reg. det (art) + Adj + N + AdjP (pp)
I-2	reg. det (art) + Adj + N + AdjP (pres. part) (past part)
I-3	reg. det (art) + Adj + N + AdjP (pp)
I-4	reg. det (art) + lim + N + AdjP (past part)

I-5	reg. det (art) + Adj + N + AdjP (pp)
I-6	reg. det (art) + Adj + Adj + N + AdjP (pres. part)
I-7	reg. det (art) + Adj + Adj + N + AdjP (past part)
J. Clausal	
J-1	NCl
K. Head + Clause Mod	
K-1	Pro + AdjCl
L. Det + Head + Clause Mod	
L-1	reg. det (art) + N + AdjCl
L-2	pre art + reg. det (art) + N + AdjCl
M. Det + Single-word Mod + Head + Clause Mod	
M-1	reg. det (art) + Adj + N + AdjCl
M-2	pre art + reg. det (art) + Adj + Adj + conj + Adj + N + AdjCl
N. Coordinate Construction	
N-1	N + conj + N
N-2	Pro + conj + N
N-3	N + conj + reg. det (art) + N
N-4	PN + conj + reg. det (art) + N
N-5	PN + conj + reg. det (gen) + N
N-6	Pro + conj + reg. det (gen) + N
N-7	reg. det (art) + N + conj + N
N-8	reg. det (art) + N + conj + PN
N-9	reg. det (gen) + N + conj + N
N-10	reg. det (gen) + N + conj + reg. det (art) + N
N-11	reg. det (art) + N + conj + reg. det (art) + N
N-12	reg. det (art) + N + conj + reg. det (dem) + N
N-13	reg. det (art) + N + conj + reg. det (gen) + N
N-14	reg. det (gen) + N + conj + reg. det (art) + N
N-15	reg. det (gen) + N + conj + reg. det (gen) + N
N-16	PN + reg. det (gen) + N + conj + N
N-17	reg. det (art) + N + conj + pre det (quan) + N
N-18	reg. det (art) + N + conj + pre det (quan) + N + conj + Pre det (quan) + N
N-19	reg. det (art) + N + conj + N + conj + N
N-20	reg. det (art) + N + reg. det (art) + N + conj + reg. det (art) + N
N-21	reg. det (art) + N + reg. det (art) + N + conj + reg. det (gen) + N
N-22	reg. det (art) + N + conj + reg. det (art) + N + conj + reg. det (art) + N
N-23	reg. det (art) + N + N + conj + reg. det (art) + N
N-24	reg. det (gen) + N + conj + N + conj + N

N-25	reg. det (gen) + N + conj + reg. det (gen) + N + conj + reg. det (art) + N
N-26	Adj + N + conj + N
N-27	Adj + N + conj + Adj + N
N-28	PN + conj + reg. det (art) + Adj + N
N-29	reg. det (art) + Adj + N + conj + N
N-30	reg. det (art) + Adj + N = conj + reg. det (art) + Adj + N
N-31	reg. det (art) + N + conj + reg. det (art) + Adj + N + conj + N
N-32	reg. det (art) + Adj + Adj + N + con + N
N-33	reg. det (art) + Adj + N + conj + reg. det (gen) + N
N-34	reg. det (art) + Adj + N + conj + pre det (quan) + N
N-35	reg. det (art) + N + conj + reg. det (gen) + N + conj + reg. det (gen) + Adj + N +
N-36	post det (car + N + conj + post det (car) + Adj + N
N-37	reg. det (art) + Adj + N + conj + reg. det (art) + Adj + Adj + N
N-38	reg. det (art) + N + conj + reg. det (art) + N + AdjP (pp)
N-39	reg. det (art) + N + conj + reg. det (art) + N + AdjP (pres. part)
N-40	reg. det (art) + N + N + conj + N + AdjP (pp)
N-41	reg. det (art) + N + N + N + conj + N + AdjP (pp)
N-42	reg. det (art) + Adj + N + conj + reg. det (gen) + N + AdjP (pres. part)
N-43	reg. det (art) + N + conj + reg. det (art) + N + AdjCl
N-44	NCl + conjNCl

Table 2

Summary of Categories and Frequency of Noun Phrases by Grade Level

CATEGORY	FREQUENCY BY GRADE						GRAND TOTAL
	IV	%	V	%	VI	%	
A. Head	1543	43%	1864	45%	1848	45%	5255
B. Det + Head	1731	46%	1549	38%	1724	42%	5004
C. Single-word Mod+Head	6	.17%	20	.49%	13	.31%	39
D. Det+Single-word Mod+Head	184	5%	404	10%	239	6%	827
E. Phrasal	27	1%	51	1%	85	2%	163
F. Head+Phrase Mod	2	.06%	3	.07%	3	.07%	8
G. Det+Head+Phrase Mod	34	1%	59	1%	105	3%	198
H. Single-word Mod+Head+ Phrase Mod	0	0%	2	.05%	3	.07%	5
I. Det+Single-word Mod+ Head+Phrase Mod	3	.08%	18	.44%	8	.19%	29
J. Clausal	8	.22%	40	1%	38	1%	86
K. Head+Clause Mod	0	0%	1	.02%	0	0%	1
L. Det+Head+Clause Mod	1	.03%	6	.15%	15	.36%	22
M. Det+Single-word Mod+ Head+Clause Mod	1	.03%	0	0%	4	.10%	5
N. Coordinate Construction	73	2%	94	2%	66	2%	233
TOTAL	3613		4111		4151		11875