SYNTACTIC AWARENESS: A POTENTIAL LINK

BETWEEN THE READING AND WRITING

OF ESL COLLEGE STUDENTS

By

BARBARA JO GLEASON

Bachelor of Science in Home Economics

University of Missouri-Columbia

Columbia, Missouri

1974

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the degree of
MASTER OF ARTS
July, 1984

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Thesis Approved:

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Thesis Adviser

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Dean of the Graduate College

PREFACE

This is a study of the relationship between ESL col-
lege students' written syntactic fluency and their reading
comprehension. The results indicate a relationship between
reading comprehension and two of the ten syntactic elements
analyzed, passive verbs ($p < 0.05$) and prepositional
phrases ($p < 0.01$).

Several people have provided advice and support for
this study as well as for other projects I undertook during
my stay at Oklahoma State University. I would especially
like to thank Dr. Bruce Southard, my adviser, for suggest-
ing the topic for this study and for interpreting the sta-
tistics. He also deserves my thanks for his general sup-
port of this thesis and of my graduate work.

To Dr. Ravi Sheorey, I am grateful for much advice and
encouragement throughout my stay at OSU. I wish to thank
both Dr. Sheorey and Dr. Sherry Southard for their valuable
comments and suggestions regarding this thesis.

I also wish to thank the four teaching assistants
whose students participated in this study. They are Marla
Hamilton, Linda Rountree, Rick Whisenand, and Gary Yeats.

And, finally, I wish to thank my parents, George and
Virginia Gleason, for their unfailing support and encour-
agement.

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CHAPTER I

INTRODUCTION

Literacy Acquisition

The current literacy crisis has led to a proliferation
of composition and reading research while the philosophi-
cal, political, and psychological parameters of literacy
are still being explored and defined. In the midst of this
growing concern with literacy, an awareness of the inter-
relatedness of reading and writing has emerged, most
recently in the work of Krashen, who formulated the input
hypothesis of second language acquisition:

> The input hypothesis makes the following claim:
> a necessary (but not sufficient) condition to
> move from stage i to stage i + 1 is that the
> acquirer understand input that contains i + 1,
> where 'understand' means that the acquirer is
> focused on the meaning and not the form of the
> message. We acquire, in other words, only when
> we understand language that contains structure
> that is 'a little beyond' where we are now.
> (1982:21)

Krashen has applied his input hypothesis to the acquisition

of literacy, hypothesizing that "writing competence ...
comes only from large amounts of self-activated reading for
interest and/or pleasure. It is acquired subconsciously;
readers are unaware they are acquiring writing competence
while they are reading, and are unaware of this accomplish-
ment after acquisition has taken place" (1983:29). If
Krashen's theory is valid, writing practice and instruction
can only enhance the performance of an already acquired
competence. Thus, Krashen views the written and spoken
codes as separate dialects, both of which are acquired sub-
consciously through comprehensible input.

Syntactic Awareness and Literacy

Krashen's discussion of writing competence is, of
course, a direct reference to Chomsky's competence-
performance distinction (Chomsky 1965:3-14). Chomsky has
made one additional contribution to writing theory: his
emphasis on the syntactic level of language has probably
been the reason why many composition researchers have in-
vestigated the role of syntactic awareness in the develop-
ment of writing skills. In her 1979 dissertation, Heller
identifies six categories of reading-writing research,
three of which involve syntactic complexity as a key part
of the research. In addition, four major studies conducted
by the National Council of Teachers of English focus on
student writers' use of syntax: Bateman-Zidonis (1964),
Hunt (1965), Mellon (1967), and O'Hare (1973). Of special

significance to the present study is that of Hunt (1965), which provides a method of syntactic analysis and investigates "developmental trends in the frequency of various grammatical structures written by students" (1965:1).

The major contribution of syntactic studies to writing pedagogy is sentence combining, whose history is summarized by Mellon (1978). Sentence combining, like writing practice and instruction, only brings to the surface an already acquired language competence, yet Mellon reports that it is a useful exercise for increasing a student's ability to manipulate syntactic structures (1978:34). What remains questionable, however, is whether this same increased ability enhances reading comprehension. There are those who believe that it does. Lunsford, for instance, observes that "all language skills are related--[the] level of reading comprehension is related to complexity of sentence formation (or syntactic maturity) ... As our [remedial] students' ability to manipulate syntactic structures improved so did their ability to draw inferences and make logical connections" (1978:49, 51). More recently, Salvatori confirms Lunsford's finding, but proposes that increased reading ability is the cause, not the result, of increased facility with syntactic structures (1983:659). However, as Salvatori states, what really matters is not "what causes what" but "rather how to teach composition so as to benefit from the interrelationship of the two activities" (1983:659).

Up to now, the reading-writing research has been wholly concerned with first language ("Ll") rather than second language ("L2")[1] students. Krashen (1983) discusses the current status of L2 reading-writing research:

> Given the relationship between reading and writing in first language, one might expect a similar relationship to hold between reading and writing in a second language. There is, however, no published evidence relating reading and writing proficiency in second language acquirers. (1983:53)

Additionally, Krashen proposes that his competence/performance theory of Ll literacy acquisition "might be applicable" to L2 literacy acquisition and that "significant similarities in pedagogical application are called for" (1983:53).

Purpose of the Study

The purpose of this study is to discover whether L2 college students' use of syntax in writing correlates significantly with their reading comprehension. Using Heller's 1979 study of Ll students as a model, I have divided my forty-five student sample into quartiles on the basis of their reading comprehension scores. Having hand-

[1]Throughout this study, I will use the abbreviations "Ll" and "L2" to refer to "first language" and "second language," respectively.

calculated syntactic fluency scores for all forty-five
students, I compared only the syntactic fluency scores of
the highest reading quartile with the scores of the low-
est quartile. I formed two hypotheses on the basis of
Heller's 1979 findings. She found a significant positive
correlation between the nine elements listed below in
Hypothesis I had reading comprehension scores but a signif-
icant negative correlation between the syntactic element
listed in Hypothesis II and reading comprehension scores.

Hypotheses

Hypothesis I: The high reading group will not exhibit
significantly higher mean scores on the
following nine variables than the low
reading group:

1. Total number of words per T-unit
2. Total number of words per clause
3. Total number of words per subordinate clause
4. Total number of words per main clause
5. Total number of passive verbs
6. Total number of prepositional phrases
7. Total number of gerunds and participles
8. Total number of intra-T-unit coordinators
9. Total number of free final modifiers

Hypothesis II: The low reading group will not exhibit a
                significantly higher score than the high
                group on the following variable:
                Total number of T-units per sentence

CHAPTER II

REVIEW OF PREVIOUS STUDIES

Introduction

Research indicating that syntactic awareness affects
reading comprehension has two pedagogical implications:
first, increased syntactic awareness may enhance reading
comprehension; and, second, the use of grammatically simpli-
fied texts may increase students' reading comprehension.
I will discuss the research in both these areas and conclude
with a brief description of the correlational study which I
am replicating.

In this review of the literature, I refer primarily to
L1 research because very little L2 reading and reading-
writing research has been published. Cziko (1978:473)
attributes the lack of L2 reading research to the emphasis
placed on speaking and listening skills in the audiolingual
approach and to the more recent interest in developing com-
municative competence. I believe that this review of the
L1 research is justified because theoretical implications
for L2 reading and writing can be drawn from L1 theory and
research, as noted above by Krashen (1983:53). I will
discuss these implications separately in Chapter III.

Syntactic Awareness and Reading

In a summary of his and others' miscue analysis reading research, Goodman (1969:17) reports that proficient readers use syntactic information: "The reader must operate in response to real, meaningful, grammatical language if he is to have all the information available to him in proper inter-relationship." In addition to using the syntactic informa-tion in a reading passage, the reader uses his own language competence to process information when he reads. Goodman states that a reader, using his experience and his language competence, "intereacts with the graphic input as he seeks to reconstruct a message encoded by the writer" (1969:15).

Using a sample of sixth grade students, Evanechko et al. compared students' syntactic fluency writing scores with their reading scores. They concluded that language fluency and control of syntactic complexity "underlie all measured reading behavior" and that improving these two competencies enhances reading performance (1974:325). This line of reasoning supports the use of sentence combining in the reading classroom.

Sentence Combining and Reading

Hughes (1976) studied the effect of sentence combining activities on the reading comprehension of seventh grade students. He hypothesized that knowledge of phrase struc-tures would help students "chunk" information for faster

reading. The experimental class in Hughes' study received thirty-seven hours of sentence combining practice while the control group used newspapers in a composition class. In a final assessment, the experimental group's reading speeds were somewhat greater than the control group's, though not significantly so, and, Hughes states, "there does seem to be some confirmation of an increase in awareness of syntactic relationships, i.e., an awareness of a word in relation to units beyond the word" (Hughes 1975:51). In addition, Hughes found that the experimental group was better able to "recover deep structure, or meaning, from the surface structure of what they read" (1975:52).

White and Karl (1980) find Hughes' results questionable for two reasons: first, the control group did not work on language manipulation and thus regressed slightly in that area; and, second, inexperienced testers did part of the measuring.

Shockley (1974) also studied the effects of sentence combining on the reading comprehension of seventh graders. For her study, an experimental group of twenty-five students practiced twenty grammatical transformations and were then tested with reading passages that had been revised to incorporate the twenty transformations. The experimental group did make significant gains in reading during the period of the study, but there was no significant difference between the experimental group and the control group at the end of the semester.

Morenberg et al. (1978) studied the effect of sentence combining practice on the reading comprehension of college freshmen. Since only slightly higher post-test scores were found for the experimental group, they concluded that although sentence combining does result in more syntactically mature writing, it does not significantly affect reading comprehension.

One conclusion that I have tentatively drawn from a comparison of Hughes' and Morenberg's studies is that the developmental stage of a student may partially determine the effect of sentence combining practice on reading comprehension. Hunt (1965) identifies developmental stages in written syntactic growth, and Smith (1970) finds that "the syntactic level at which the student writes influences or is influenced by the syntactic level at which he reads" (reported in Stotsky 1975:37). Perhaps students at the lower developmental stages can make more gains in reading comprehension via sentence combining than students at the higher stages. Hughes' findings that the lower and middle reading groups benefitted more from sentence combining practice than the higher reading groups tends to bear this hypothesis out, but it is still highly speculative in the absence of more research.

Grammatical Structure and Readability

The issue of whether increasing syntactic awareness through sentence combining practice can improve reading

comprehension remains unresolved. However, researchers have also studied a second approach to the use of syntax in reading: the manipulation of grammatical structure in texts in order to increase reading comprehension. Fagan (1971) investigated the effect of transformations in texts on the reading comprehension of fourth, fifth, and sixth graders. He found that children's reading comprehension decreases as the number of deletions and embedding transformations in texts increases. He did not find, however, that the number of transformations within a sentence affects comprehension although Fodor and Garrett (1967) did.

Evans (1972) compared the reading comprehension of two groups of twelfth graders, one group reading grammatically simplified versions of the text read by the other group. For his study, Evans simplified the reading passages by de-transforming the texts, as suggested by Fagan (1971) and others. He reduced the number of nominalizations, relative clauses, passive voice verbs, and grammatical deletions to simple kernel sentences. Twelve pairs of high school seniors were matched according to their reading scores, which ranged between the seventh and ninth grade levels. Evans tested their reading comprehension with multiple choice tests and cloze tests. He found a significant difference in the reading achievement of the experimental group (reading de-transformed texts) on the multiple choice test. Evans concluded that "problem readers will raise their comprehension by reading transformationally simplified prose"

(1972:279).

Blau (1982) studies the effect of simplified syntax on the reading comprehension of Spanish speaking students learning English as a second language in Puerto Rico. To test reading comprehension, she developed eighteen short paragraphs in three versions: "Version 1 consisted of short, simple sentences, version 2 of complex sentences with clues to underlying relationships left intact, and version 3 of complex sentences without such clues" (Blau 1982:517). Blau administered a reading comprehension test with multiple choice questions following the eighteen paragraphs to a group of eighth graders and a group of college students. She found that, contrary to the predictions of readability formulas, version 2 yielded the highest test scores while version 1 yielded the lowest. Blau concluded that the short choppy sentences of version 1 are more difficult for these ESL students to read than the complex sentences of version 2, which include information about relationships between ideas (1982:525).

Syntax in Writing and Syntactic
Awareness in Reading

Finally, Heller (1979) has conducted correlational research to investigate a potential relationship between reading comprehension and syntactic fluency in writing. The present study replicates Heller's study but alters the student sample by using L2, rather than L1, students. Heller

compared Ll college freshmen's reading comprehension scores with their use of twenty-one syntactic elements in expository writing. She gave her original sample of sixty-eight students the comprehension subtest of the Nelson-Denny Reading Test, Form C (1973) to divide the group into quartiles. She then used only the highest and lowest quartiles, each containing seventeen students, in her study. Heller conducted a syntactic analysis of the students' writing by measuring their use of twenty-one syntactic elements known to contribute to syntactic fluency. She then compared the reading and writing scores in two ways:

(1) she correlated the mean reading scores for the high and low reading groups with the mean writing scores for each of the twenty-one syntactic elements;

(2) she compared the mean writing scores for the high reading group with the mean writing scores for the low reading group.

Both methods of comparison revealed a significant correlation between eleven of the twenty-one syntactic elements used in writing and the reading comprehension scores.

CHAPTER III

THEORETICAL CONSIDERATIONS

Introduction

Syntactic knowledge facilitates reading by (1) helping
a reader to organize text and (2) helping a reader to antic-
ipate structure. This is why a writer's syntactic fluency
may theoretically relate to his reading ability. In this
chapter, I will develop this theoretical basis for a reading-
writing connection more fully, for theory binds individual
research results into a coherent framework and theory may
be applied to pedagogy.

Reading Models

Ulijn (1980) identifies three categories of reading
models: (1) the reading teaching models, (2) functional
psychological models, and (3) psycholinguistic models.
The reading teaching models were dominant before 1970 and
were associated with readability formulas while the func-
tional psychological models and the psycholinguistic models
became prominent after 1970. Ulijn finds that, while
reading teaching models and functional psychological
models apply equally well to L1 and L2 reading, "psycho-

linguistic models are more language specific"; therefore, psycholinguistic models are the most relevant to L2 reading since L2 readers have presumably already learned to read a first language and are now learning the language more than the reading process itself (1980:21).

All psycholinguistic models of reading take different linguistic levels into account (e.g. graphemic, lexical, syntactic, semantic, and textual), but the models differ in their approaches to integrating the processing of the levels. Research studies often focus on the readers' processing of one of the linguistic levels: Kolers' (1973) work concentrates on the graphemic/lexical level; Fodor et al. (1974) emphasizes the syntactic level: Chapman (1979) and Garrod and Sanford (1977) study the textual levels of reading.

Ulijn (1980) cites three approaches to the way a reader integrates the different linguistic levels in psycholinguistic reading models: "the bottom-up or serial, top-down or analysis-by-synthesis and interactive" (1980:22). The bottom-up model holds that the reader recognizes letters, words, and then word groups, proceeding from smaller to larger units. Readers do not predict information, according to this model. The top-down model comprises hypothesis-forming activities based on a semantic "top" and descending to a linguistic "bottom." An efficient reader does not require all the bottom elements to internalize meaning. Goodman (1976) thus calls this type of reading a "guessing game." The third psycholinguistic reading model is

interactive in that all the linguistic levels are assumed to be processed simultaneously and interdependently (Ulijn 1980:22-23).

The Use of Constraints in Making
Reading Predictions

In the analysis-by-synthesis psycholinguistic reading model, discussed by Goodman (1967), Smith (1982), Smith (1973), Clarke (1980), and Clarke and Silberstein (1977), the reader selects enough language cues and information from the text to make fairly accurate predictions about the writer's message although, according to Goodman (1969:12-13), oral reading is rarely mixcue-free (or error-free), and silent reading is never miscue-free. In addition to selected information from a text, a reader uses previous experience, knowledge, and language competence to make predictions about the writer's message. Thus, the reading process is a combination of graphic input and information in the reader's mind. Goodman (1967) asserts that a reader uses knowledge of semantic and syntactic language constraints to make predictions:

The reader uses syntactic and semantic information, sampling from the print just enough to confirm his guess of what's coming, to cue more semantic and syntactic information. Redundance and sequential constraints in language, which the reader reacts to, make this prediction possible

(1967:266).

The reader's language competence, which includes a knowledge of constraints, can thus either aid or hinder the predictions made when reading, depending on the reader's competence level.

In his research, Cziko compares L1 and L2 students' use of constraints in reading. He finds that proficient L2 readers use syntactic, semantic, and discourse constraints and that L2 readers' inability to make full use of these constraints can lead to reading difficulty (1978:485). Cziko also finds that L2 readers develop sensitivity to syntactic constraints before semantic and discourse constraints; he attributes this finding to the transformational grammar tenet that syntax is the most important level of language and to the fact that use of discourse constraints requires longer retention and therefore greater language competence.

The Short Circuit Hypothesis
of ESL Reading

Clarke (1980), assuming the analysis-by-synthesis reading model, has investigated whether good L1 readers are also good L2 readers. He finds that there is a transfer of reading skills--good L1 readers are also good L2 readers--but limited control of the language in L2 reading can cause normally efficient L1 readers to resort to poor L2 reading strategies. Thus, control of the language significantly

affects L2 readers' ability to use their L1 reading strate-
gies (Clarke 1980:206). L2 readers have two tasks: (1)
they must transfer their L1 reading strategies to the target
language, and (2) they must develop language competence in
the second language. Failure in either of these areas may
result in inefficient reading.

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Chunking, Writing Theory, and

Reading Theory

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A theory proposed in the first major statement made in
the field of psycholinguistics has possible relevance to
reading theory. That theory is termed "chunking" and was
proposed by Miller (1956).

In his 1965 study, Hunt claims that the number of words
per T-unit used in writing best predicts a child's develop-
mental stage of syntactic maturity; however, in his 1970
study, Hunt asserts that clause length is a better indi-
cator of syntactic maturity and that embeddings per clause
is the best indicator. Hunt (1970) uses Miller's (1956)
chunking theory to explain this phenomenon. Miller (1956)
posits that the human mind can process and remember seven,
plus or minus one, units of information at a time. In
order to retain increased amounts of information, a person
can recode two units as one, or "chunk" information. Hunt
suggests that people reduce kernels to embeddings to effect
greater retention by means of chunking. Hughes proposes
that "the reader who recodes or chunks information puts

less burden on short term memory and thereby increases comprehension" (1975:13). Letters, words, phrases, and clauses can all be chunked to form one of the seven units commonly held in short term memory. Readers whose language competence allows them to chunk words into larger grammatical structures will greatly increase their retention of what they have read.

CHAPTER IV

THE STUDY

Subjects

Students participating in this study were enrolled in
the five ESL sections of Freshman Composition II taught at
Oklahoma State University during the Spring semester, 1983.
Although each of the five sections was taught by a different
instructor, all of the instructors were graduate assistants
enrolled in the TESL (Teaching English as a Second Language)
MA program at OSU. Furthermore, all five instructors used
thé same syllabus and grading standard and assigned the same
number of compositions during the semester. The course con-
tent included essay development, library research skills,
and essay documentation.

The students in the sample were all international stu-
dents learning English as a second language. They had all
passed one previous composition class and they were assumed
to have scored five-hundred or higher on the TOEFL (Test of
English as a Foreign Language) although there may have been
a few who scored lower. No other variables were controlled.

Of the seventy-two students in the five participating
composition classes, forty-five were part of this study.

Students were excluded from the study if they failed to
write at least 225 words for each of the two compositions
assigned, to take the reading test because of absence, or
to fill in the reading test answer sheet correctly.

The forty-five students were divided into quartiles on
the basis of their reading test scores. Only the highest
and the lowest groups' scores were used in the study.

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Procedures for Collecting

Language Samples

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Written Language

After having written and revised the first composition
of the semester, the students wrote the two compositions for
this study as class assignments during the fourth and sixth
weeks of the semester (January 31 - February 4 and February
14 - 18, 1983). The five instructors all administered sepa-
rately the same in-class writing assignments. The first
assignment included directions stating that students were
to use examples as a method of developing the following
topic:

Non-academic activities offered to international

students at OSU

For the second composition, students were directed to use
comparison/contrast as the method of development, and they
were given the following topic:

Some differences between the universities in the

United States and those in your country. You
may want to concentrate on some specific points
for comparison/contrast such as entrance require-
ments, classroom procedures, grading systems,
student conduct, student-teacher relationships,
etc.

The instructors gave the students seventy-five minutes
to complete each composition in class. As soon as the in-
structors collected the essays, they gave them to me so that
I could make Xerox copies, after which I returned the
originals to the instructors. Appendix A includes a sample
essay from both the high and low reading groups.

Reading Comprehension

The students of all five ESL composition sections were
administered a reading comprehension test in class by their
instructors during the fifth week of class, February 7 - 11,
1983. The instructors gave students class participation
points for taking the test and returned the test scores to
the students two to three weeks after the test had been
administered.

Instrumentation

Reading Test

Since the Nelson Denny Reading Test used by Heller
(1979) is not appropriate for L2 students, a multiple choice

reading comprehension test designed specifically for L2 students was used in this study. This test was originally developed for entering students in intensive or non-intensive ESL classes at Emporia State University, Emporia, Kansas.

I selected the reading test because its three sections test different reading skills: comprehension of paraphrase, vocabulary, and paragraphs. Oller, in his research on assessing ESL reading competence, has found a connection between reading, grammar, and vocabulary (1972:219) and has also found it desirable to use sentence paraphrase and paragraph reading tasks to measure ESL reading (1972:318).

The test consists of fifty questions divided into three sections. The first section tests knowledge of structure indirectly by requiring students to identify a correct paraphrase of a sentence or a conclusion which can be drawn from a sentence. The second section tests vocabulary by requiring students to select a synonym for a word in a sentence or to choose an appropriate word to fill in a blank in a sentence. Section III tests comprehension by requiring students to read a short passage and then answer multiple choice comprehension questions. Students were allowed thirty minutes to complete the test.

Syntactic Analysis of Written Language

I conducted a syntactic analysis of all the forty-five students' written language samples during the first two

weeks of June, 1983. The ten syntactic elements analyzed in this study were among the eleven elements that Heller (1979) found significantly related to L1 reading. Heller's selection of the original twenty-one syntactic elements was based on the work of Hunt (1965), Christensen and Christensen (1976), and Golub (1974). I omitted one of the eleven syntactic elements that Heller found significant (Golub's syntactic density score) because it is a ten-element composite score which duplicates six of the ten elements already being used in this study.

Following Heller's research design, I limited the number of words analyzed to the sentence ending immediately after the 225th word of each composition. Scores for each student were totalled and recorded on the Summary of Raw Scores Worksheet (Appendix B). Bruce Southard, linguistics professor at OSU, helped in categorizing the syntactic structures.

The Ten Syntactic Elements Defined

1. words per T-unit: the mean number of words in a "minimal terminal unit"--a main clause and all its modifiers, including subordinate phrases and clauses and all other modifiers. In his 1963 study, Hunt found the T-unit to be the best indicator of syntactic fluency.

2. words per clause: the mean number of words in a clause, either in a main clause or a subordinate clause.

Hunt (1970) decided that mean-clause length is a better indicator of syntactic fluency than mean T-unit length.

3. <u>words per subordinate clause</u>: the mean number of words per subordinate clause, including adverb, adjective, and sentence-final noun clauses

4. <u>total number of prepositional phrases</u>: a count of all the prepositional phrases used by a student

5. <u>words per main clause</u>: the mean number of words used in main clauses

6. <u>total number of passive verbs</u>: a count of all the passive verbs used by a student

7. <u>total number of gerunds and participles</u>: a count of all the gerunds and participles used by a student

8. <u>total number of intra-T-unit coordinators</u>: a count of all the coordinating conjunctions (<u>and</u>, <u>so</u>, <u>for</u>, <u>but</u>, <u>nor</u>, <u>or</u>, <u>yet</u>) used to join elements inside T-units

9. <u>total number of free final modifiers</u>: Frances Christensen defines free modifiers in his "The Problem of Defining a Mature Style" (Christensen and Christensen 1978:143). He contrasts bound modifiers, which are word modifiers, with free modifiers, which are structure modifiers. Free modifiers thus modify word groups such as phrases and clauses. They are grammatically non-restrictive, generally set off in writing by punctuation. Free modifiers can be prepositional phrases; adjective and adverb clauses; noun, verb, adjective and adverb phrases or clusters; and absolute

phrases. Final free modifiers appear at the end of
T-units (1978:144).

10. T-units per sentence: the mean number of T-units in
sentences

CHAPTER V

ANALYSIS OF THE DATA

Introduction

Just as Heller did in her 1979 study, I statistically
compared the high reading group's mean writing scores with
the low reading group's writing scores at the Oklahoma State
University Computer Center. The scores were compared by
means of a one-tailed t-test of significant differences on
an SAS (Statistical Analysis System) program.

Statistical Analysis of Reading Scores

Each student recorded his reading test answers on an
OPSCAM standard answer sheet, form 01. Using the OSU
Computer Center, the OSU Bureau of Tests and Measurements
computed the individual and composite reading scores, con-
verting each student's raw score into the percent correct
and a percentile ranking. Table 1 presents the test sta-
tistics for the entire group. The statistics indicate that
this test is reliable for this group of students; further-
more, the one-tailed t-test of significant differences
reveals a highly significant difference between the high
and low reading groups ($p < 0.0001$), so the test did

discriminate between good and poor readers. The entire group's mean reading score was 78.02 (standard deviation = 12.86) while the highest quartile's mean was 92.81 (S.D. = 2.79), and the lowest quartile's mean was 61.38 (S.D. = 6.69).

TABLE I

READING TEST STATISTICS

	Actual	Recommended
Mean	39.11	31.85
Standard deviation	6.37	6.05+
Reliability	0.86	0.70+
Standard error measure	2.42	
Mean difficulty	78.22	63.70
Mean discrimination	0.31	0.30+

Statistical Analysis of Writing Scores

A total of ninety compositions was used for a statistical analysis of the ten elements. The entire group's mean number of words analyzed was 466.71. The high reading group's mean number of words analyzed was 469.63, and the

low reading group's, 465.36. Table II contains mean writing scores for the entire group, the high group, and the low group.

Report of Findings

Results Related to One-tailed t-test
of Significant Differences Between
High and Low Reading Groups

Hypothesis I: The high reading group will not exhibit significantly higher mean scores than the low reading group on the following nine variables.

1. total number of words per T-unit

2. total number of words per clause

3. total number of words per subordinate clause

4. total number of words per main clause

5. total number of passive verbs

6. total number of prepositional phrases

7. total number of gerunds and participles

8. total number of intra-T-unit co-ordinators

9. total number of free final modifiers

The null hypothesis, "no significantly higher scores for the high reading group," was rejected for two variables: passive verbs ($p < 0.05$) and prepositional phrases

TABLE II

MEAN RAW SCORES AND STANDARD DEVIATIONS FOR WRITING VARIABLES

	Writing Variables	Entire Group M.R.S.*	S.D.	High Group M.R.S.	S.D.	Low Group M.R.S.	S.D.
1.	words per T-unit	16.96	3.10	18.23	2.76	15.72	3.18
2.	words per clause	11.95	2.06	12.43	2.43	10.99	1.44
3.	words per subordinate clause	8.99	1.65	8.87	1.75	8.53	1.52
4.	words per main clause	13.61	2.73	14.15	2.53	12.59	2.54
5.	total number of passive verbs	5.09	3.73	7.09	4.21	3.18	3.40
6.	total number of prepositional phrases	55.20	7.86	61.27	6.47	51.00	6.10
7.	total gerunds and participles	9.84	5.20	11.45	4.59	9.90	6.64
8.	total intra-T-unit coordinators	13.07	4.18	11.73	4.17	14.45	3.70
9.	total free final modifiers	4.08	2.72	4.00	1.73	3.90	2.81
10.	T-units per sentence	1.13	0.14	1.07	0.08	1.20	0.21

Mean number of words analyzed = 466.71

*M.R.S. - Mean Raw Score

(p < 0.001). The high group also had higher scores for words per T-unit and words per clause, but their scores were not significantly higher than the low group's. One unexpected observation was made of these findings. In Heller's 1979 study, the students in the high reading group had a significantly higher mean score for the use of intra-T-unit coordinators; however, in this study, the low reading group's mean score was higher, although not significantly so (p < 0.12).

Hypothesis II: The low reading group will not exhibit a significantly higher score than the high group on the following variable: Total number of T-units per sentence

The null hypothesis, "no significantly higher scores for the reading group," was not rejected. Although the low reading group did produce more T-units per sentence, their score was not significantly higher than that of the high group. Table III contains the observed values of t for each of the ten writing variables.

Discussion of Results

The high reading group used a significantly greater number of prepositional phrases (p < 0.01) and passive verbs (p < 0.05). The high reading group also had higher scores for total number of words per T-unit and total number of words per clause, and the low reading group used

TABLE III

RESULTS OF THE T-TEST OF SIGNIFICANT DIFFERENCES BETWEEN
MEAN SCORES OF THE HIGH AND LOW READING GROUPS ON
EACH OF TEN WRITTEN LANGUAGE VARIABLES

Writing Variables	t	Levels of Probability
1. Total number of words per T-unit	1.9800	.06
2. Total number of words per clause	1.6842	.11
3. Total number of words per subordinate clause	0.4852	.63
4. Total number of words per main clause	1.4407	.17
5. Total number of passive verbs	2.3970	.02*
6. Total number of prepositional phrases	3.8328	.001**
7. Total number of gerunds and participles	0.6350	.53
8. Total number of intra-T-unit coordinators	-1.6220	.12
9. Total number of free final modifiers	0.0914	.93
10. Total number of T-units per sentence	-1.8086	.09

* $p < 0.05$
** $p < 0.01$

more intra-T-unit coordinators and T-units per sentence; however, a significant level of confidence was not reached for the comparisons of these high-low scores.

Heller's study revealed a significant reading-writing relationship for all ten syntactic elements; this study only revealed a significant reading-writing relationship for two elements. The different findings probably result from (1) differences between L1 and L2 literacy which require different methods of measuring L1 and L2 syntactic fluency or (2) flaws in the design or implementation of one or both of the studies. I believe that both these factors are at least partially responsible for the differences between the results of Heller's and my studies.

The differences between L1 and L2 literacy will explain the differences in the findings of this study and those of Heller's study. However, the similarities are also worth noting. A comparison of the writing scores of this and Heller's studies reveals some similarities between the two groups of students. Table IV contains the results of three studies of developmental stages of syntactic fluency: Hunt (1965), Heller (1979), and the present study. Heller's high reading group and this study's high reading group scored the exact same number of T-units per sentence, both exhibiting an inverse relationship between reading comprehension and that writing score. In addition, the high and low mean scores for words per clause, words per T-unit, and T-units per sentence in Heller's study resemble those of

this study. For example, Heller's low reading group scored
a mean of 15.72 words per T-unit while the low group of this
study scored a mean of 15.03, and Heller's low reading group
mean score for T-units per sentence was 1.2 while the score
for this study was 1.13.

TABLE IV

SUMMARY OF DATA RELATED TO CLAUSES,
T-UNITS AND SENTENCE LENGTH

Research Group	Words/ Clause	Words/ T-unit	T-units/ Sentence
Present Study (non-native speakers)			
High Reading Group	12.43	18.23	1.07
Low Reading Group	10.99	15.72	1.20
Heller, 1979 (native speakers)			
High Reading Group	11.50	16.68	1.07
Low Reading Group	9.91	15.03	1.13
Hunt, 1965 (native speakers)			
Grade 8	8.10	11.50	1.37
Grade 12	8.60	14.40	1.17
Superior Adults	11.50	20.30	1.23

Despite these apparently similar findings, there was
one basic difference between the writing scores: whereas
Heller found a positive relationship between L1 reading and

total number of intra-T-unit coordinators used in writing,
the results of this study revealed a negative relationship
between the two variables. This difference in findings
raises the question of whether or not the same variables
should be used to measure syntactic fluency in L1 and L2
writing. In the case of intra-T-unit coordinators, cultural
rhetorical patterns may have contributed to the low level
L2 readers' preference for coordination; it has been well
established that coordination is preferred to subordination
in Arabic languages (Kaplan 1966). In addition, lower
stages of syntactic growth are characteristically marked by
coordination, both in L1 and L2 development (Gaies 1980:58).
And, being non-native speakers, the L2 students are sure to
have had lower levels of language competency than the L1
students of Heller's study. Thus, the different findings
regarding intra-T-unit coordinators may be attributed to
culturally different rhetorical patterns and to different
stages of development in syntactic growth. However, there
remains a general question about the advisability of using
the same variables to measure L1 and L2 syntactic fluency.

Although a different reading test was used for the L2
students of this study, the same syntactic variables were
used to measure syntactic fluency. This may not be appro-
priate. In a review of second language writing research,
Gaies (1980:55) states that, since "an index of [L2 but not
L1 adult] language growth ought in some way to reflect the
incidence of developmental errors," error-free T-units are

a better indicator of second language syntactic growth than
T-units. Gaies also posits that an L2 writer's limited
vocabulary may force him to use more syntactically complex
language in order to circumlocute an unknown lexical item.
The results of this avoidance technique should not be
regarded as "better" or more "mature" writing. Thus, the
use of T-units for syntactic analysis and also general
syntactic complexity in L2 writing may have different impli-
cations for L1 and L2 writers. Keeping these limitations
in mind, Gaies reports that, in fact, research findings
(Monroe 1975) do suggest that "not only the process of
T-unit lengthening, but also the stages of that process,
are consistent in first and second language acquisition"
(Gaies 1980:58).

Should T-units be used to measure L2 syntactic fluency?
Gaies (1980:57) reports that low proficiency level L2 stu-
dent writing is not appropriate for T-unit analysis because
the high frequency of grammatical and lexical errors inter-
feres with the researcher's ability to count and analyze
T-units. Thus, T-unit analysis is only appropriate beyond
a certain level of proficiency in the target language. I
noted that certain L2 writing errors which would be unlikely
to occur in L1 college writing can affect the analysis of
syntax in L2 writing. Thus, an analysis of L2 writing can
differ from a similar analysis of L1 writing because of the
presence of different types of errors. The following sen-
tence in a composition from this study's low reading group

illustrates this point:

> In Thailand have fifteen universities which are need
> to have the exam before getting in.

The omission of the subject from this sentence will affect
counts of words per main clause, words per clause, and words
per T-unit. This kind of error therefore results in differ-
ent Ll and L2 syntactic analysis findings, especially at
low proficiency levels.

So far, three factors that differentiate Ll syntactic
analysis from L2 syntactic analysis have been mentioned:
(1) cultural differences in rhetorical patterns, (2) L2
avoidance of unknown words which results in greater syntac-
tic complexity, and (3) errors peculiar to L2 writers that
affect syntactic analysis. If L2 syntactic analysis method-
ology should differ from Ll syntactic analysis, how should
it differ? The most obvious answer to this question is that
different syntactic elements may be required to measure L2
syntactic fluency. Prepositional phrases, according to the
results of this study, are a strong indicator of L2 syntac-
tic fluency. Interestingly, the highly idiomatic nature of
English prepositional phrases makes them particularly chal-
lenging for L2 writers to acquire. Even when L2 writers do
not use them correctly, the fact that L2 writers use prepo-
sitional phrases at all must indicate a certain degree of
confidence in their writing or their language competence or
both. In this study, all prepositional phrases were counted,
even those used incorrectly, so the low reading group did

not even attempt to use prepositional phrases as frequently as did the high reading group. The low reading group either (1) did not know as many prepositional phrases as the high reading group or (2) avoided the use of prepositional phrases. The high reading group of students, however, was more willing to try to use prepositional phrases, even when they could not always use the phrases correctly. There may exist, then, a developmental stage in L2 literacy and language acquisition when students' syntactic fluency is relatively complex, even though syntactic elements such as prepositional phrases have not yet been fully acquired. If such is the case, the clear implication for pedagogy is that students should not be punished for the incorrect use of syntax in writing since this may indicate a higher developmental stage than more error-free but less syntactically fluent writing. Grading based on the number of grammatical errors in student writing may prevent students from progressing normally through developmental stages of language acquisition or writing. In a syntactic analysis of L2 writing, then, even the incorrect use of certain syntactic elements may prove a significant indicator of developmental progress.

In addition to prepositional phrases, which syntactic elements will best measure L2 syntactic fluency? The Natural Order Hypothesis of language acquisition (Krashen 1982: 12-15), which states that L2 language structures are generally acquired in an identifiable order, provides a theoretical framework for identifying elements of written syntax

indicative of L2 developmental stages. When the number of elements described by the Natural Order Hypothesis is expanded, the Hypothesis should indicate which syntactic elements are most relevant to the acquisition of literacy in a second language.

There still remain, however, questions about the relationships between (1) L2 spoken and written language and (2) L2 language competence and writing ability. If the researcher is mainly interested in the L2 student's knowledge of syntax, it is advisable to use objective tests in place of or in addition to syntactic analysis of writing. Also, sentence combining exercises will encourage students to begin to implement their knowledge of syntax more frequently and more effectively in their writing.

The small sample, twenty-two students with eleven each in the high and low reading groups, was a shortcoming which may have contributed to the results of this study. However, the differences in L1 and L2 writing, which require different methods of syntactic analysis, is probably much more significant than the sample size for this particular study. Further research is clearly warranted to adequately develop the Natural Order Hypothesis, and research on developmental stages in L2 syntactic fluency may prove to be an important part of this research.

CHAPTER VI

SUMMARY

In order to investigate a potential L2 reading-writing relationship, I compared reading comprehension scores and syntactic fluency scores of L2 college students enrolled in the five ESL Freshman Composition II classes at OSU in Spring, 1983. Of the original group of seventy-two students, forty-five became the sample group which was divided into quartiles on the basis of their reading scores. The highest and lowest quartiles, consisting of eleven students each, then had their hand-tabulated syntactic fluency scores compared by means of a one-tailed t-test. Of the ten syntactic elements analyzed, only two were found to be related to the reading scores: passive verbs and prepositional phrases.

Despite Heller's positive L1 reading-writing connection for all ten syntactic elements analyzed for this study, only two were found significantly related to reading for these L2 students. The small size of the sample for this study and my own inexperience as a researcher cause these findings to come into question. However, other reasons may also explain this study's failure to establish a strong reading comprehension-syntactic fluency connection. L2 literacy is more complicated than and is somewhat different from L1

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literacy. The differences and the additional complexity must be accounted for in order to measure reading or writing ability. Just as special L2 reading tests are used to measure L2 reading comprehension, special L2 syntactic analysis variables and methods may be necessary to measure L2 syntactic fluency. There are also special psychological and socio-cultural factors that play a role in L2 literacy, factors such as motivation, self-image, and cultural values and norms. Empirical research, which generally involves only observable data, may not be the best framework in which to study L2 literacy. Instead, ethnographic research, which takes the learning context and the individual learners more into account, may be a more appropriate procedure to use to study L2 literacy acquisition.

REFERENCES

Bateman, Donald R., and Frank J. Zidonis. 1966. The effect
of a study of transformational grammar on the writing
of ninth and tenth graders. Research Report No. 6.
Champaign, Ill.: National Council of Teachers of
English.

Blau, Eileen K. 1982. The effect of syntax on readability
for ESL students in Puerto Rico. TESOL Quarterly 16
(4):517-528.

Chapman, L. J. 1979. The perception of language cohesion
during fluent reading. In P. A. Kolers et al. (Eds.),
Processing of visible language 1, 403-412. New York:
Plenum Press.

Chomsky, Noam. 1965. Aspects of the theory of syntax.
Cambridge, Mass.: The M.I.T. Press.

Christensen, Francis, and Bonnejean Christensen. 1976. A
new rhetoric. New York: Harper and Row.

Christensen, Francis, and Bonnejean Christensen. 1978.
Notes toward a new rhetoric (2nd ed.). New York:
Harper and Row.

Clarke, Mark A. 1980. The short circuit hypothesis of ESL
reading--or when language competence interferes with
reading performance. Modern Language Journal 64(2):

203-209.

Clarke, Mark A., and Sandra Silberstein. 1977. Toward a realization of psycholinguistic principles in the ESL reading class. Language Learning 27(1):135-154.

Cziko, Gary A. 1978. Differences in first- and second-language reading: The use of syntactic, semantic and discourse constraints. The Canadian Modern Language Review 34(3):473-489.

Evanechko, Peter, Lloyd Ollila, and Robert Armstrong.]974. An investigation of the relationships between children's performance in written language and their reading ability. Research in the Teaching of English 8(3): 315-326.

Evans, Ronald. 1972. The effect of transformational simplification on the reading comprehension of selected high school students. Journal of Reading Behavior 5(4): 273-281.

Fagan, William T. 1971. Transformations and comprehension. The Reading Teacher 25(2):169-172.

Fodor, J. A., and M. Garrett. 1967. Some syntactic determinants and sentential complexity. Perception and Psychophysics 2:289-296.

Fodor, J. A., T. G. Bever, and M. F. Garrett. 1974. The Psychology of Language. New York: McGraw-Hill Book Co.

Gaies, Stephen J. 1980. T-unit analysis in second language research. TESOL Quarterly 14(1):53-60.

Garrodd, S., and A. Sanford. 1977. Interpreting anaphoric

relations: The integration of semantic information while reading. <u>Journal</u> <u>of</u> <u>Verbal</u> <u>Learning</u> and <u>Verbal</u> <u>Behavior</u> 16:77-90.

Golub, Lester S. 1974. Syntactic density score (SDS) with some aids for tabulating. In William Fagan, Charles Cooper, and J. Jensen (Eds.), <u>Measures</u> <u>in</u> <u>research</u> <u>and</u> <u>evaluation</u> <u>in</u> <u>the</u> <u>English</u> <u>language</u> <u>arts</u>, 100. Champaign, Ill.: NCTE.

Goodman, Kenneth. 1967. Reading: A psycholinguistic guessing game. <u>Journal</u> <u>of</u> <u>the</u> <u>Reading</u> <u>Specialist</u> 4: 126-135.

Goodman, Kenneth. 1969. Analysis of oral reading miscues: Applied psycholinguistics. <u>Reading</u> <u>Research</u> <u>Quarterly</u> 5(1):9-30.

Hairston, Maxine. 1982. The winds of change: Thomas Kuhn and the revolution in the teaching of writing. <u>College</u> <u>Composition</u> <u>and</u> <u>Communication</u> 34(2):76-88.

Heller, Mary. 1979. <u>The</u> <u>reading-writing</u> <u>connection:</u> <u>An</u> <u>analysis</u> <u>of</u> <u>the</u> <u>written</u> <u>language</u> <u>of</u> <u>university</u> <u>fresh-</u> <u>men</u> <u>at</u> <u>two</u> <u>reading</u> <u>levels</u>. Dissertation, Oklahoma State University.

Hughes, Theone. 1975. <u>Sentence</u> <u>combining:</u> <u>A</u> <u>means</u> <u>of</u> <u>increasing</u> <u>reading</u> <u>comprehension</u>. Thesis, Western Michigan University. (ERIC ED 1112 421)

Hunt, Kellogg. 1965. <u>Grammatical</u> <u>structures</u> <u>written</u> <u>at</u> <u>three</u> <u>grade</u> <u>levels</u>. Research Report No. 3. Urbana, Ill.: NCTE.

Hunt, Kellogg. 1970. Recent measures in syntactic develop-
        ment. In Mark Lester (Ed.), Readings in applied trans-
        formational grammar, 187-200. New York: Holt, Rine-
        hart, and Winston, Inc.

Kaplan, Robert. 1966. Cultural thought patterns in inter-
        cultural education. Language Learning 16(1 and 2):1-20.

Kolers, P. A. 1973. Three stages of reading. In F. Smith
        (Ed.), Psycholinguistics and reading, 28-49. New York:
        Holt, Rinehart and Winston.

Krashen, Stephen. 1982. Principles and practice in second
        language acquisition. Oxford, England: Pergamon Press.

Krashen, Stephen. 1983. Readings on writing. Unpublished
        manuscript.

Lunsford, Andrea A. 1978. What we know--and don't know--
        about remedial writing. College Composition and Com-
        munication 29:49, 51.

Mellon, John. 1967. Transformational sentence-combining:
        A method for enhancing the development of syntactic
        fluency in English composition. Research Report No.
        10. Urbana, Ill.: NCTE.

Mellon, John. 1978. Issues in the theory and practice of
        sentence combining: A twenty-year perspective. In
        Donald A. Daiker, Andrew Kerek, and Max Morenberg
        (Eds.), Sentence combining and the teaching of writing,
        1-38. Akron, Ohio: L and S Books, University of Akron.

Miller, George. 1956. The magical number seven, plus or
        minus two: Some limits on our capacity for processing

information. *Psychological Review* 63:81-97.

Monroe, James. 1975. Measuring and enhancing syntactic
    fluency in French. *The French Review* 48:1023-31.

Morenberg, Max, Donald A. Daiker, and Andrew Kerek. 1978.
    Sentence combining at the college level: An experi-
    mental study. *Research in the Teaching of English*
    12:245-56.

O'Hare, Frank. 1973. *Sentence combining: Improving stu-
    dent writing without formal grammar instruction.*
    Research Report No. 15. Urbana, Ill.: NCTE.

Oller, John. 1972. Assessing competence in ESL reading.
    TESOL Quarterly 6:313-323.

Salvatori, Mariolina. 1983. Reading and writing a text:
    Correlations between reading and writing patterns.
    College English 45(7):657-666.

Shockley, Sandra J. 1974. *An investigation into the ef-
    fects of training in syntax on reading comprehension.*
    Dissertation, University of Georgia.

Smith, Frank. 1973. *Psycholinguistics and reading.* New
    York: Holt, Rinehart and Winston.

Smith, Frank. 1982. *Understanding reading* (3rd ed.). New
    York: Holt, Rinehart, and Winston.

Smith, William. 1975. The effect of transformed syntactic
    structures on reading. Quoted in Sandra Stotsky,
    Sentence-combining as a curricular activity: Its
    effect on written language development and reading com-
    prehension. *Research in the Teaching of English* 9(1):

30-71.

Ulijn, Jan. 1980. Foreign language reading research: Recent trends and future prospects. CATESOL Occasional Papers 16-33 (ERIC ED 200-057)

White, Regine S., and Herb Karl. 1980. Reading, writing and sentence combining: The track record. Reading Improvement 17:226-232.

APPENDICES

APPENDIX A

EXAMPLE WRITTEN LANGUAGE SAMPLES FROM

HIGH AND LOW READING GROUPS

Student Writing Sample from High Reading Group

Student-Teacher Relationships in Indonesia and in the U.S.

The position of a teacher in Indonesia is very re-
spected compared with they are here in the U.S. The teachers
in Indonesia play a very important role in determining the
pass or fail of students in their schools. They have the
right to make a request for suspending students, to keep the
test results without telling students about their grades,
and to issue a recommendation for a candidate to be accepted
in his/her school without taking entrance test.

A number of students have been suspended from schools
in Indonesia because of their spoilt relationships with their
teachers. This can happen in Indonesia because some teachers
are overacting in ruling the students. For example, they
ask students to write research papers which then cancelled
just because of their own will or give students too much
homeworks which are never graded. These all make students
frustrated and sometimes can lead to their emotion. If this
emotion can not be controlled by students, the argument
comes up. Sometimes, the argument extend to serious fight-
ing between students and teachers. If this happen, auto-
matically, the students involve in this incident will be
suspended from the school. The students always in wrong
position while the teachers in the win corner. In U.S.,
this situation almost never happens because both students
and teachers have their own certain rights and these rights

are always written for the school policies.

231 words

Student Writing Sample from Low Reading Group

No Extra Time Left for Organizations

In 1978, when I first moved to the United States to go
to High School in Stillwater, Oklahoma I noticed that there
many international students at the high school. There were
Palentinians, Iranians and many Venezuelans in the high
school, but most of my friends were Venezuelan. My best
friend Francisco Miranda introduced me to his friends and
we all got along father well. When graduation came we did
not mind since most of us were going to attend college at
Oklahoma State University (OSU). Now that we were in college
my friends tried and tried to get me to join the Organization
of Latin American Students, but I did not join because I had
too many other responsibilities to take care of. I rarely
participate in any organizations because of such responsi-
bilities as my job, my education, and my girl friend. For
this reason I do not join any kind of organizations.

My job is one of my most important responsibilities be-
cause it furnishes me with money. I work as a doorman at
the Satellite Twin. My job takes up about twenty-five to
thirty hours of my week and most of these hours at night.
The only time I ever work during day time is on weekends so
most of nights and weekends are reserved for my job. If an
organization I wanted to join were to have meetings at night
there is a good chance that I would not be ablt to make it
to the meetings.   (246 words)

APPENDIX B

SUMMARY OF RAW SCORES WORKSHEET

Student name	No. words: Theme one	No. words: Theme two	Total words

Syntactic variables	Theme one	Theme two	Raw score
1. words per T-unit	_____	_____	_____
2. words per clause	_____	_____	_____
3. words per subordinate clause	_____	_____	_____
4. words per main clause	_____	_____	_____
5. passive verbs	_____	_____	_____
6. prepositional phrases	_____	_____	_____
7. gerunds and participles	_____	_____	_____
8. intra-T-unit co-ordinators	_____	_____	_____
9. free final modifiers	_____	_____	_____
10. syntactic density score	_____	_____	_____
11. T-units per sentence	_____	_____	_____

VITA

Barbara Jo Gleason

Candidate for the Degree of

Master of English

Thesis: SYNTACTIC AWARENESS: A POTENTIAL LINK BETWEEN THE
         READING AND WRITING OF ESL COLLEGE STUDENTS

Major field: English

Biographical:

> Personal Data: Born in San Diego, California, August
>   10, 1952, the daughter of George and Virginia
>   Gleason.
>
> Education: Graduated from Parkview High School, Spring-
>   field, Missouri, in May, 1970; received Bachelor
>   of Science Degree in Home Economics from the
>   University of Missouri-Columbia in May, 1974;
>   received Missouri Life Teacher Certification -
>   Language Arts from the University of Missouri-
>   Columbia in May, 1978; completed requirements
>   for the Master of Arts degree at Oklahoma State
>   University in July, 1984.
>
> Professional Experience: High school teacher of English
>   as a foreign language in Abong Mbang, Cameroon
>   (Peace Corps), July, 1978, to July, 1981; Teach-
>   ing Assistant, Department of English, Oklahoma
>   State University, September, 1981, to May, 1983;
>   Assistant Lecturer, Freshman Writing Program,
>   University of Southern California, September, 1983,
>   to present.