This is to certify that the

dissertation entitled

THE EFFECT OF PRIOR KNOWLEDGE AND LANGUAGE
PROFICIENCY ON THE NONNATIVE SPEAKERS'
WRITTEN DISCOURSE

presented by

Ali Saleh Khabti Al-Ghamdi

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in English

_____
Major professor

Date May 5, 1989

0-12771

PLACE IN RETURN BOX to remove this checkout from your record.
TO AVOID FINES return on or before date due.

DATE DUE	DATE DUE	DATE DUE
SEP 2 6 1994	_____	_____
FEB 0 6 1995	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

THE EFFECT OF PRIOR KNOWLEDGE AND LANGUAGE

PROFICIENCY ON THE NONNATIVE SPEAKERS'

WRITTEN DISCOURSE

By

Ali Saleh Khabti Al-Ghamdi

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of English

1989

ABSTRACT

THE EFFECT OF PRIOR KNOWLEDGE AND LANGUAGE PROFICIENCY ON THE NONNATIVE SPEAKERS' WRITTEN DISCOURSE

By

Ali Saleh Khabti Al-Ghamdi

This study was designed to further investigate the claims of Langer (1984), Chesky and Hiebert (1987), Stroethoff (1988), and others that prior knowledge is related to success in writing. Using 49 nonnative speakers studying English at the advanced levels in an intensive ESL program at a large, Midwestern university, the study investigated the relationships among various measurements of writing skill (writing proficiency scores), background knowledge, language proficiency, reading habits, and demographic information.

Each subject was asked to write on the topic of eclipses, a topic on which students showed a large spread of knowledge. Before writing the essay, the subjects took free-association and prior knowledge tests on the topic. Then they filled out a questionnaire which reflected the degree of their involvement with the topic, their background characteristics, and the amount of

reading they did. Trained raters assigned holistic writing proficiency scores and rated the writing samples for amount of content, text sophistication, global coherence, linguistic complexity, and revision strategies. The raters also scored the prior knowledge test for the degree of fluency and organization.

Data were analyzed using frequency analysis, correlation coefficient, regression, and analysis of variance. Prior knowledge significantly correlated with writing proficiency scores, content length, text sophistication, global coherence, and involvement. Prior knowledge was not significantly related with T-unit length, amount of subordination and revision strategies.

Overall language proficiency was significantly correlated with writing proficiency scores, text sophistication, and linguistic complexity, but was not significantly related with content length, global coherence, revision strategies, and involvement.

Among the other variables measured, age appears to have a significant relationship with content length and involvement with the text. Level of education and the amount of reading appear to have a significant relationship only with involvement. The results also showed that there was a difference among the subjects'
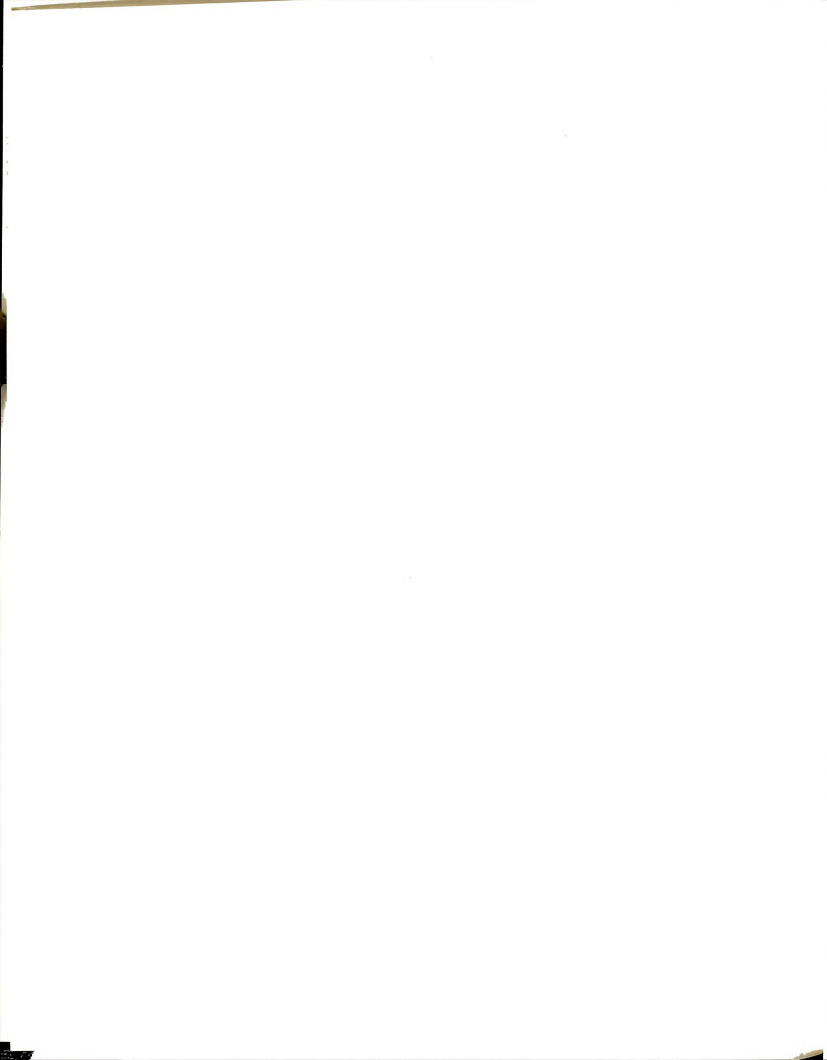
writing related to their native languages. Implication of these findings are drawn and suggestions for further research are provided.
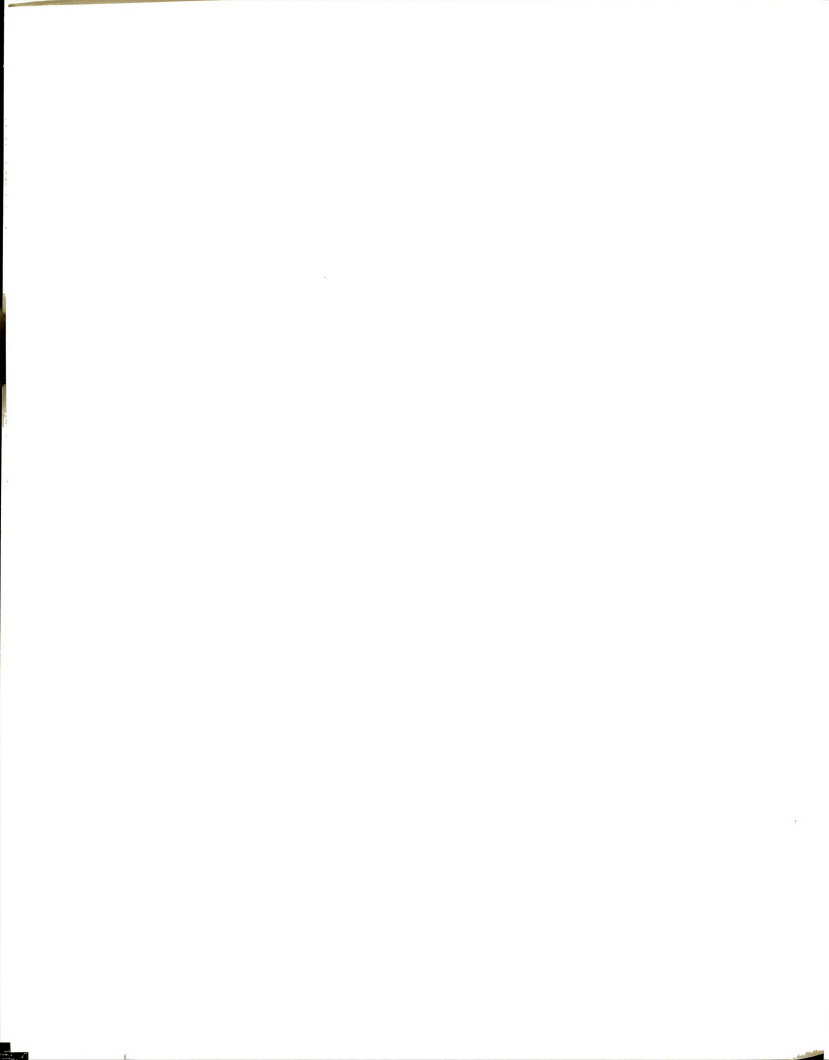
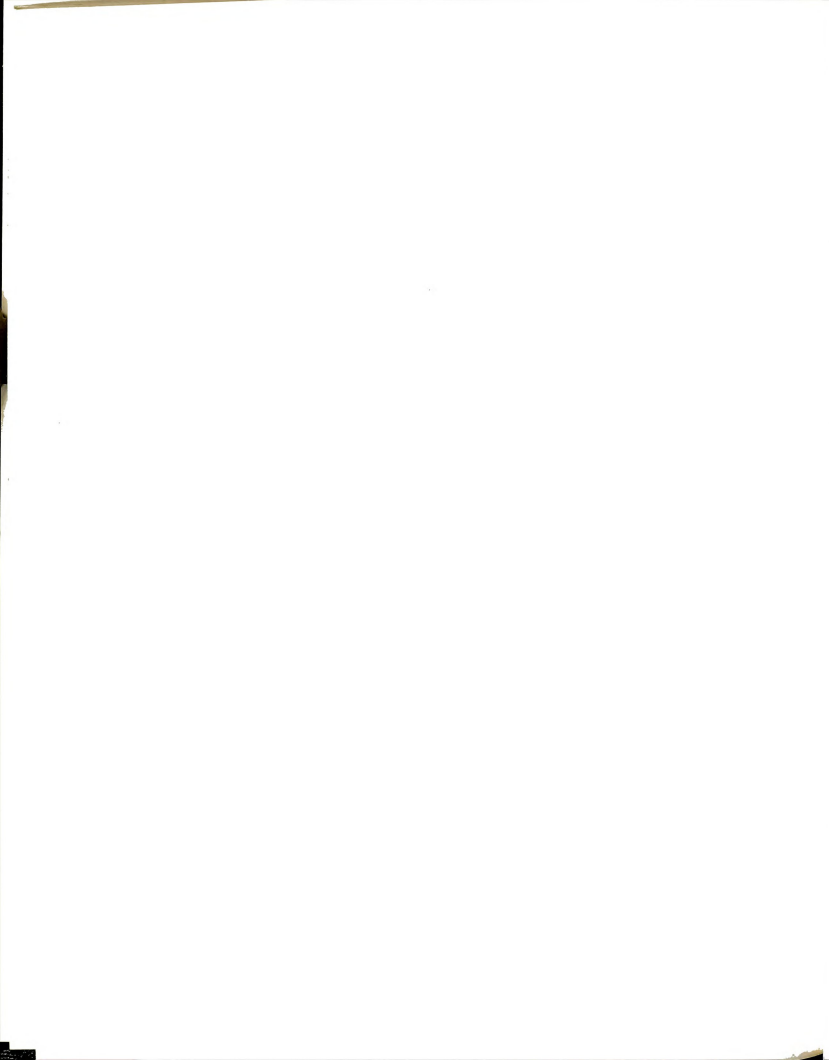Dedicated to my father, Saleh,

and my mother, Khadra.

May God rest their souls in Heaven.

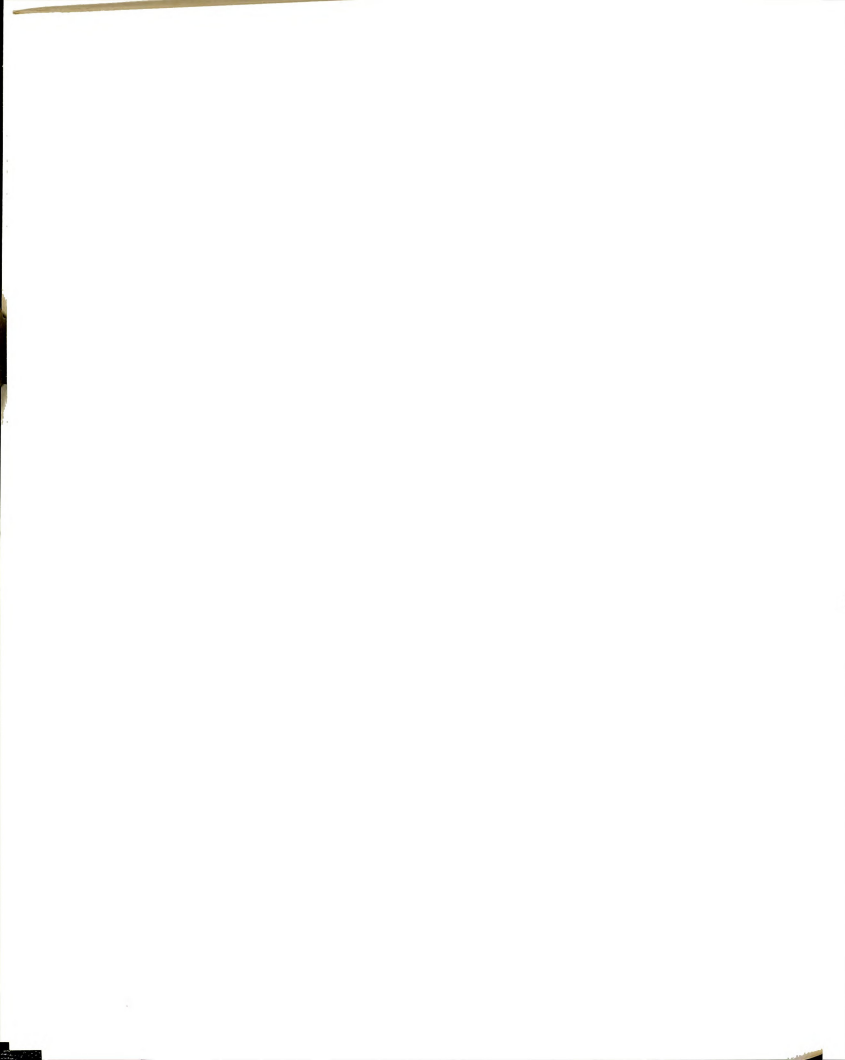My brother, Mohammad, and

my wife, Azizah, with my love and thanks.

ACKNOWLEDGMENTS

Table of Contents

x

Chapter

Chapter

LIST OF TABLES

LIST OF FIGURE

A.

B.

C.

D.

E.

F.

G.

H.

I.

LIST OF APPENDICES

re
an
in
be
ci
in
of
ne
sk
an
of
gr
In
of
wr
top

sp

CHAPTER I

INTRODUCTION

The Problem

This study attempted to determine the relationship among prior knowledge, language proficiency, and writing of nonnative speakers of English. This investigation is important because no research has yet been done with nonnative speakers. Most of the studies cited below were conducted with native speakers. The investigation is also important because the measurement of prior knowledge and its effect on writing have been neglected relative to the emphasis placed on language skills as summarized in the studies of Applebee (1984) and Newell and MacAdam (1987). The more traditional view of writing tended to stress both language ability and grammar skills and equate them with writing ability. Ineffective writers were, therefore, often given a dose of language in the hope that it would remedy their writing ailments. To achieve these language ends, one topic was often assigned to all students.

As Chesky (1984) stated, however, when native speakers of English all wrote on the same topic, some

migh

litt

indi

writ

mech

Howev

elem

cruc

bein

discu

and

vari

when

indi

a giv

view

readi

than

might not know much about the topic, and hence, have little to write. Newell and MacAdam (1987) correctly indicated that the role of language proficiency in writing cannot be denied and that clarity of expression, mechanics, and form are affected by language proficiency. However, these authors also pointed out that these elements alone do not constitute writing ability. Other crucial factors, such as prior knowledge of the topic being written about, must be taken into account in discussing the writing ability of the students. Newell and MacAdam said, "Even good writers who have mastered various writing genres may seem to lack writing skills when facing new topics" (p. 157).

Another writing theorist, Hoetker (1982) indicated that little has been known about the effect of a given topic on students' writing. He said:

> Our understanding of topic effects is at such a primitive stage that we cannot demonstrate whether or in what ways students will write differently in response to such thoughtless topics than they will write in response to the most carefully considered and closely edited topics (p. 382).

Reading and Writing

It seems more likely that this language-based view of writing ignored a tremendous body of research on reading which assumed that reading involves much more than language. As demonstrated in the reading research

of

(197

(198

cons

the

ever

read

rese

stud

DeGr

(198

speak

becau

compr

writt

overs

.
k
t
o
h
o
u
s
p
w

student

of Johnson (1981), Rumelhart (1975), Anderson et al. (1977), Carrell (1983), Lee (1986), Hudson (1982), Cziko (1980), and others, prior knowledge plays a major role in constructing meaning and organizing the information of the text.

Based on the findings of these studies, there is every reason to believe that what has been found about reading probably applies to writing. Therefore, writing researchers have begun to investigate writing. Some studies of this type were conducted by Langer (1984), DeGroff (1986), Chesky and Hiebert (1987), and Stroethoff (1988) to clarify the role of prior knowledge in native speakers' writing.

Langer (1984), for instance, speculated that because there were schematic effects on reading comprehension, there were also schematic effects on written expression and ignoring such effects would be an oversight. She said:

> . . . writing as a skill is too intertwined with knowledge of the subject matter itself to isolate the two without considering how one affects the other. Because topical knowledge so directly helps shape a paper, the teacher's understanding of what students know about a topic can be very useful in planning writing assignments, in setting expectations for various students, and in providing pertinent help while a writer is at work (p. 28).

Chesky and Hiebert (1987) examined the essays of students who wrote on two topics--one in which the

s
co
wh
ba
qu
th
a

kn
th
by
kno
kno
ses
coh
ind
kno
fro

res
of
of
kno
the
theo
down

students had little knowledge and one in which they had considerable knowledge. Chesky and Hiebert found that when students wrote about a topic in which they had background knowledge, they wrote quantitatively more and qualitatively better; and they became more involved in their writing and enjoyed it more than when they wrote on a topic about which they had little knowledge.

DeGroff (1986) investigated the effect of prior knowledge on conferencing and revising texts and found that students with high knowledge produced better content by stating valued information within the specified knowledge domain. Furthermore, the students with high knowledge provided better comments during conferencing sessions. In comparing the effect of prior knowledge and cohesive ties on the texts' coherence, Carrell (1982) indicated that if students lacked suitable background knowledge, cohesive ties would not prevent their text from being fragmented and incoherent.

From these studies, we can conclude that writing researchers have not gone far enough to look for the role of prior knowledge in nonnative speakers' writing. None of these studies has looked at the effect of prior knowledge and language proficiency on writing in spite of the opinion of Carrell (1986) and the other schema theorists that both prior knowledge (represented on top-down processing) and language skills and vocabulary

dev
nee

kno
nonr
spea
of
The
prof
prof
soph
revi

profi
inves
role
clear
ident
effec
tenta
effec
study
relati
inform

development (represented as bottom-up processing) are needed for comprehension to take place.

Therefore, this study investigated whether prior knowledge represents the same type of importance in nonnative speakers' writing as it does in the native speakers' writing. Likewise, it also tests the effects of language proficiency on nonnative speakers' writing. The students' levels of prior knowledge and language proficiency will be correlated with their writing proficiency scores, length of content, text sophistication, global coherence, linguistic complexity, revision strategies, and involvement with the texts.

The Goal of the Study

Even though prior knowledge and language proficiency would appear to be important and been investigated to some extent among native speakers, their role in the nonnative speakers' writing measures are not clear. The goal of this study then is to simultaneously identify these roles. Without a study of the combined effects of these two variables on writing measures, only tentative predictions can be made about whether the effects are separate or interactive. Furthermore, this study will undertake the investigation of the relationship among writing measures and demographic information (such as age, gender, etc.), the amount of

readi

are t

Engli

T

are the

H

reading students do and writing measures. The following are the major issues with regard to nonnative writers of English:

1. Is there any difference among the participants' writing related to their personal characteristics and the amount of reading they do?

2. What is the relationship between prior knowledge about specific topics and the nonnative speakers' written discourse?

3. What is the relationship between overall language proficiency and the nonnative speakers' written discourse?

4. What is the additive effect of prior knowledge and overall language proficiency on written discourse?

Hypotheses

The specific hypotheses (stated as null hypotheses) re the following:

Hypothesis 1: There is no relationship between the nonnative speakers' prior knowledge about specific topics and their scores in (a) writing proficiency tests, (b) content, (c) text sophistication, (d) global coherence, (e) linguistic complexity, (f) revision strategies, and (g) involvement.

pr

Sw

la

re

su

kn

re

ec

thi

the

eit

or

get

the

spe

at

<u>Hypothesis 2</u>: There is no relationship between the nonnative speakers' overall language proficiency and (a) writing scores, (b) content, (c) text sophistication, (d) global coherence, (e) linguistic complexity, (f) revision strategies and involvement.

Limitation of the Study

A limitation is necessary related to applying the prior knowledge testing instrument to nonnative speakers. Swaffar (1988) said that students tested in their native language had an advantage over their second language in recalling any passage's information. Thus, because the subjects used their second language in the prior knowledge test, a decision of whether the students' responses to the test reflected their actual knowledge of eclipses or not can't be made. One potential solution to this limitation would have been to have the students use their first language in the prior knowledge test, then either translating the students' responses to English in order to have them rated by English native raters or getting raters who speak the students' language to rate their responses.

Generalizability of the Study

The investigation was conducted with nonnative speakers who were studying English as a second language at Michigan State University. There appears to be reason

to

to

pro

vie

rep

wri

of

vie

alo

wri

eff

var

and

to

wil

to believe that resulting generalizations can be applied to subjects of similar backgrounds.

Summary

This chapter stressed that emphasizing language proficiency and equating it with writing ability, as old views of writing appear to have done, did not accurately represent the writing process. The recent views of writing, however, do not completely rule out the effect of language proficiency on writing. Instead, the recent views of writing indicate that language proficiency, along with students' prior knowledge, interact in the writing process. In this study we will examine the effects of both these variables on writing. Some other variables, such as the students' demographic information and the amount of reading the students do, are believed to be related to ESL written discourse; these variables will also be investigated.

ef

no

an

no

le

co

re

re

co

in

wr

kn

st

la

Pri

app

CHAPTER II

REVIEW OF LITERATURE

Introduction

This study undertook the investigation of the effects of prior knowledge and language proficiency on nonnative speakers' writing. Concerning prior knowledge and its effects on writing, writing theorists generally now assume similarity between reading and writing at some level of abstraction since both processes are used to construct meaning. Thus, the first section of this review of the literature will focus on the studies related to prior knowledge and its effects on reading comprehension. The second section of this review will include a recapitulation of the studies related to writing as a process affected by the writer's prior knowledge. The third section of this chapter reviews the studies related to the measurement of grammar and language proficiency on writing.

Prior Knowledge

Prior Knowledge and Reading

In outdated views of reading, readers passively approached the texts in order to absorb what the authors

of

by

that

part

init

beha

beha

Chor

sent

part

that

rese

sent

proc

comp

reco

read

Top-

theo

is a

read

orde

util

"to

of those texts had produced. Those views were challenged by recent language and reading theorists who indicated that reading comprehension required an active participation of the comprehenders. This argument was initiated by Chomsky (1959) who characterized the behaviorists' view of language as a type of learned human behavior with a predictable response to a known stimulus. Chomsky insisted that understanding and producing a sentence did not rely on our having learned that particular sentence. We can say and comprehend materials that we have not heard before. As a result of Chomsky's research, the emphasis of teaching language shifted from sentences themselves and their meaning to the learning processes of the students themselves, and how they comprehended sentences. This shift can be readily recognized in the consequent theories in the field of reading.

Top-Down Processing in Reading

Chomsky's research was followed by other reading theorists, such as Goodman (1967) who stated that reading is a "psycholinguistic guessing game." Goodman said that readers must interact with the text they were reading in order to construct meaning. This interaction requires utilizing higher level knowledge, to enable the reader to get meaning from the print, to develop the sampling,

pred

para

Good

and

grap

was

made

the

know

rese

evol

the

struc

text

delin

aids

<u>Reade</u>

theor

text

with

compre

two mo

calle

predicting, confirming, and correcting strategies parallel to those they use in listening" (Goodman and Goodman, 1982, p. 75). So, according to Goodman (1967) and Goodman and Goodman (1982), it was not the text's graphic representation that caused comprehension, but it was the knowledge that readers brought to the text that made reading possible.

A large amount of research has been conducted in the past decade to assess the effects of the readers' knowledge on reading comprehension. As a result of this research, a new, interesting and sophisticated theory evolved called Schema Theory. This theory demonstrated the necessity of an active utilization of knowledge structures within the comprehender in response to the text to be comprehended. The following section will delineate the way this interaction takes place and how it aids reading comprehension.

Reader and Text Interaction

Carrell (1986) said the way in which schema theory conceptualizes the interaction between reader and text is that the input of the text must be compatible with the reader's existing schema in order for comprehension to occur. Schema theory provides us with two modes by which information is processed. One mode is called bottom-up or data-driven processing which

rep

inf

top

rep

rea

is

comi

faci

know

the

thos

proc

know

theo

mode

comp

reco

proc

<u>In E</u>

schem

infor

the s

reade

represents the reader's utilization of the graphic information in the input data. The other mode is called top-down or conceptually-driven processing which represents the concepts from within the reader that the reader draws on to search the data.

According to schema theory, top-down processing is when readers make guesses or predictions as to what is coming in the text. Top-down processing is enhanced and facilitated by the reader's past experience or prior knowledge. Bottom-up processing is when readers decode the text's graphic components to construct meaning out of those linguistically decodable sentences. Bottom-up processing is enhanced by the reader's linguistic knowledge (phonology, morphology, and syntax). Schema theory clearly suggests that relying on one processing mode at the expense of the other will impede comprehension (Eskey, 1988). However, readers must recognize that different texts may require more of one processing mode than the other.

In Explaining Schema Theory

Anderson (1984) enumerates six functions of schema. First, a schema is composed of slots. Learning information easily takes place if that information fits the slots in the reader's schema. Second, schema enables readers to pay more attention to what aspects of the text

are

mak

hel

inf

rec

cas

app

wou

Fif

inf

is

Six

spe

pos

some

ment

the

what

body

exte

comp

theo

revi

are more important. Third, a schema enables readers to make inferences if the text is complex. Fourth, a schema helps direct readers to search their memory for certain information. As an example, we search our memory to recall what kind of food a fine meal includes. In this case and as a result of a memory search, the kind of appetizer, the kind of soup, and whether or not a salad would be served are the types of information recalled. Fifth, a schema enables the reader to summarize the information read. In this summary, important information is included and predictable portions might be deleted. Sixth, and finally, a schema, along with the recalled specific text information, enables the reader to postulate any missing information. For example, if someone wants to recall the type of drink that was mentioned in a text as served with a certain meal, and if the person can remember the meal, that person can guess what type of drink is usually served with that meal.

In light of these schema theory principles, a body of research has been conducted to investigate the extent to which schema theory can help readers readily comprehend texts. In the following sections, schema theory and readings in L1 and schema theory and L2 are reviewed. Following that is a review of the literature

abo

lit

wri

has

rea

hav

(198

voca

text

subj

asso

subj

The

they

info

knowl

knowl

recal

postu

antic

past

a tex

about prior knowledge and writing. Finally, the literature regarding how students' prior knowledge and writing performance are measured is reviewed.

Schema Theory and L1 Reading

In the past decade, a large amount of research has been conducted to investigate how native English readers significantly comprehend a text for which they have high background knowledge. Langer and Nicolich (1981) examined how the text's specific concept and vocabulary affect the readers' processing and recalling a text. Their subjects were 36 high school seniors. The subjects' knowledge was tested by asking them to write associations to the key words of two passages. Then the subjects were given the two passages to read silently. The researchers then asked the subjects to write what they could remember about the passages. When the information recalled by the subjects was compared to the knowledge they had, it was found that the level of prior knowledge was strongly related to the information recalled from the passage.

In related studies, Pearson et al. (1979) postulated that understanding, retelling, and anticipating structures depend on elaborate schemata and past experience. These authors found that comprehending text is a process of integrating text information with

preex

were

integ

possib

how fa

fifth-

differ

was   r

Conver

reader

Taylor

succes

the te

who inc

their s

deficie

poor re

between

memory

the oth

related

compreh

that   t

overesti

preexisting schemata. They added that if the schemata were not strong, comprehension would be low because the integration of new information with schemata would not be possible.

Taylor (1979) conducted a study to investigate how familiar texts aided the comprehension of third- and fifth-grade children. Taylor concluded that the difference between poor and good readers' comprehension was not significant when the texts were familiar. Conversely, the difference between those two types of readers was significant when the texts were unfamiliar. Taylor suggested that both good and poor readers successfully utilize the top-down processing mode when the text is familiar.

Contrasting results were provided by Eamon (1979) who indicated that poor readers were not able to utilize their schemata to comprehend a text. The reason for this deficiency among poor readers as stated by Eamon was that poor readers did not have the ability to differentiate between related and unrelated information during the memory search for relevant information. Good readers, on the other hand, were able to locate easily the text-related information in their minds and utilize it to comprehend that text. The implication of this study was that the role of prior knowledge should not be overestimated. Reading teachers must make sure that less

pro

act

rea

for

imp

an

tex

the

com

sin

com

rea

res

fol

rol

the

Con

kno

461

sec

the

Exa

proficient readers get the assistance they need for activating the schemata related to the text they are reading.

This research illustrates how important schema is for native speakers' reading comprehension. This importance stems from the fact that schema theory gives an important role to the comprehender as well as the text. Unless successful interaction takes place between the comprehender's knowledge and the text's knowledge, comprehension will be incomplete. It was assumed that since prior knowledge affects native speakers' reading comprehension, it also affects nonactive speakers' reading comprehension. Therefore, ESL reading researchers started to investigate this assumption. The following section reviews the studies investigating the role of prior knowledge in L2 reading comprehension in the light of schema theory.

Schema Theory and L2 Reading

Content Schema

Content schema was defined by Carrell (1987) as knowledge relative to the content domain of the text (p. 461). A number of studies have been conducted with second-language learners to answer the question of how they use content schemata to comprehend a passage. Examining the effects of background knowledge on native

and

stu

fir

or

tra

tex

fam

the

tha

tak

tex

sam

of

rep

pre

bot

lan

rec

Lee

tha

com

rec

was

rec

and nonnative speakers' comprehension, Carrell (1983) studied three components of background knowledge: the first one was context; presence or absence of a picture or a page title before the page. Second was transparency: presence of lexical items which provide textual clues. The third background component was familiarity with the text or being knowledgeable about the text to be read. The findings of this study showed that unlike native speakers, nonnative speakers did not take advantage of their prior knowledge to comprehend a text.

Lee (1986) replicated Carrell's study using the same components of background knowledge as Carrell. One of the differences between Carrell's study and Lee's replication of Carrell's study was that the instructions preceding the passages to be read in Lee's studies were both written and read aloud in the subjects' native language. Also, subjects were asked to write their recollections in their native language. The findings of Lee's study contradicted those of Carrell. Lee found that nonnative speakers were able to utilize the combination of their background knowledge components to recall the text. The reason Lee differed from Carrell was that Lee asked his subjects to write their recollections in their native language which gave them an

adv

(19

was

adva

text

<u>Cont</u>

addi

ESL

sche

orga

form

pose

inte

comp

text

Carr

and

fami

advantage in demonstrating their comprehension. Lee (1986) said:

> . . . the way in which comprehension is assessed affects the evaluation of comprehension. Assessing comprehension with a target language task may limit learners' ability to demonstrate what they comprehended. Assessing comprehension with the native language allows learners to more fully demonstrate their comprehension (1986, p. 353).

Commenting on this matter, Swaffar (1988) said it was obvious that using a native language provided advantages over using the second language in recalling a text.

Content Schema vs. Formal Schema

Reading theorists have indicated that, in addition to content schema, formal schema also affected ESL reading comprehension. Carrell (1987) defined formal schema as "knowledge relative to the formal rhetorical organizational structures of different types" (p. 461).

In comparing the effects of content schema and formal schema on reading comprehension, Carrell (1987) posed the questions: what is the effect of the interactions of content and formal schema on a text comprehension? And what is the effect of one schema on a text comprehension when the other is held constant? Carrell had her intermediate ESL subjects read, recall, and answer questions about two texts. One text was familiar and in a well-organizational rhetorical format.

The

uno

wit

com

unf

Pur

wit

for

tru

con

in

Howe

fam

impo

stru

sequ

(Ca

con

tole

<u>Cult</u>

sche

read

abse

The other text was unfamiliar and rhetorically unorganized. Carrell's findings showed that the text with familiar content and familiar form was easy to comprehend; the text with unfamiliar content and unfamiliar form was difficult to comprehend. Furthermore, this study's findings showed that a text with familiar content, but with unfamiliar rhetorical form, was also easy to comprehend. The opposite was not true. That is, if the text's form was familiar, but its content was unfamiliar, comprehension was difficult.

So, content familiarity had a more important role in the comprehension of unfamiliar content than did form. However, the form familiarity did a job that content familiarity could not do. That form familiarity was more important in "the comprehension of the top-level episodic structure of a text and in the comprehension of event sequences and temporal relationships among events" (Carrell, 1987, p. 476). Therefore, each type of schema content and form appears to play an important, but unique role in comprehension.

Cultural Schema

As indicated by Carrell (1987), cultural content schema was powerful to the extent that it facilitated the reader's reading comprehension and compensated for the absence of formal schema. Carrell said: "Whether the

for

sig

bas

cul

The

Ind

cus

the

they

subj

more

they

the

were

diff

impo

sche

fast

alth

demo

succ

from

cult

effe

form was rhetorically familiar or unfamiliar had no significant effect on subjects engaging in culturally based elaborations or distortions" (p. 474).

Steffenson et al. (1979) studied how different cultural background knowledge assisted comprehension. Their subjects, native English speakers and native Indians, were asked to read passages about wedding customs in their cultures and in different cultures, and then recall, in writing, information about the passages they had read. The result of this study showed that subjects were able to read faster and to remember details more accurately, and make more accurate inferences when they read about their own wedding customs. In addition, the readers' recollections revealed that wrong inferences were obtained as a result of reading passages from different cultures. These findings indicated two important points. First, readers with an elaborate schema take advantage of that schema to read successfully faster, remember better, and infer more details. Second, although native English speakers and native Indians demonstrated high language proficiency, they could not successfully remember details or make accurate inferences from passages about cultures other than their own culture.

In a related study, Johnson (1981) examined the effect of interaction of linguistic complexity

(voc

cult

Amer

Her

that

know

grou

info

<u>Sch</u>

on

empl

proj

mate

stud

top:

shi

read

(19

inde

cont

This

bot

sche

(vocabulary difficulty and length of sentences) and cultural background knowledge. Johnson asked Iranian and American subjects to read passages from both cultures. Her findings were consistent with those of Steffenson: that cultural background had more effect than linguistic knowledge on comprehension. She also found that both groups were easily and quantitatively able to elicit information from culturally familiar passages.

Schema Theory and Old Views of Reading

The traditional way of reading put the emphasis on processing language form and structure. It also emphasized reading correctly, tied reading with language proficiency, ignored the values of students (by assigning materials that may have ignored the values of the students), and focused on mechanics and cohesion. The topic to be read was usually out of context.

With schema theory, however, the emphasis has shifted from reading as a means to learn structure to reading for meaning. The meaning of a text as Fish (1980) and Iser (1978) indicated does not have an independent existence. Rather, it developes in the context of the interaction between readers and texts. This interaction occurs as top-down processing and bottom-up processing take place, simultaneously. In schema theory, one processing mode cannot be substituted

for

the

hav

wor

pre

bot

ski

(Ca

dif

com

wri

cog

The

sin

aid

bel

inv

for the other. In top-down processing, readers overcome the problem of insufficient background knowledge by having slots to be filled during reading. In other words, background knowledge enabled readers to make predictions that need to be confirmed during reading. In bottom-up processing, readers employ "language decoding skills, grammatical skills and vocabulary development" (Carrell, 1986, p. 8).

These studies demonstrated the importance of different types of prior knowledge in reading comprehension.

Prior Knowledge and Writing Among Native Speakers

The presumed similarity between reading and writing rests on the fact that reading and writing are cognitive processes aimed at constructing meaning. Therefore, writing researchers have hypothesized that since prior knowledge aids reading comprehension, it also aids writing performance. Chesky (1984) says:

> If reading, originally thought to be a simple decoding process, is heavily dependent on prior knowledge, then it is highly probably that writing, possibly a cognitively more demanding encoding process, is even more dependent on prior knowledge (p. 8).

Writing researchers with the guidance of this belief started to conduct studies for the sake of investigating the relationship between prior knowledge

and

wit

stu

ess

sem

kno

Lan

bet

kno

bet

tha

mor

exa

coh

cre

stu

tob

mea

and

ess

the

ass

and

kno

and writing. All of the studies so far have been done with native speakers. Langer (1984) asked 99 tenth-grade students in four American history classes to write two essays at two different periods of time during the semester. Prior to that, Langer measured the students' knowledge of the topics about which they would write. Langer found papers requiring comparison or contrast were better written by students who possessed organized knowledge. Students who had fluent information wrote better argumentative papers. On the whole, Langer found that students with high knowledge wrote quantitatively more and qualitatively better.

In a similar study, Chesky and Hiebert (1987) examined the influence of high and low knowledge on coherence, syntactic complexity, essay length, content creating context, and writing errors. They asked 80 students in the 11th grade to write about two topics: tobacco price supports and school instruction. After measuring the students' prior knowledge of those topics and after scoring the coherence, syntactic complexity, essay length, context creating statements, and errors in the students' writing, correlation analysis was used to assess the relationship between these writing measures and the students' prior knowledge.

The findings of this study showed that prior knowledge significantly correlated with the students'

holi

know

with

know

them

stud

leng

of t

thos

(309

know

show

make

disc

unde

stud

the

Hieb

topi

rela

and

spel

find

of,

the

holistic scores. In other words, students with high knowledge had higher holistic scores than the students with low knowledge. The students with high prior knowledge were also able to organize their ideas and make them into an integrated whole. Chesky and Hiebert's study also showed that prior knowledge affected the length of the students' essays. They said: "The letters of the high-prior knowledge group were twice as long as those of the students in the low-prior knowledge group" (309). Concerning the relationship between prior knowledge and context-creating statements, this study showed that students with prior knowledge were able to make an outline which served to organize the ideas to be discussed and to create a context which facilitated the understanding of those ideas.

In surveying the 80 students involved in the study for investigating the effect of prior knowledge on the students' attitudes toward the topic, Chesky and Hiebert found that those with high knowledge liked the topic and were more involved in it. This study showed no relationship between prior knowledge and T-unit length and writing errors (punctuation, capitalization, spelling, grammar, and usage). To account for this finding, Chesky and Hiebert suggested that the existence of, or lack of, grammatical errors was not affected by the students' prior knowledge because those errors may be

a

th

Ch
in
of
dra
st
(19
Tho
of
Mos
bac
wri

dra
sec
con
bas
abl
act
Dur
als
rel
wit
to

a function of the writers, themselves, and not of what they knew.

DeGroff (1986) extended Langer's (1984) and Chesky and Hiebert's (1987) studies by examining the influence of elementary school students' prior knowledge of baseball on conferencing with peers about their first drafts and revising those drafts of a narrative. Forty students took tests originated by Graves (1983) and Calin (1983) to determine the level of conferencing behavior. Those 40 students also took a 49-item short answer test of baseball knowledge used in Mosenthal (1984) and Mosenthal et al. (1985) to determine the students' background knowledge. The students were then asked to write stories about a half inning of a baseball game.

Analyzing students' performance on the first draft, conferencing with peers, and their revising of the second drafts, DeGroff found the students' final draft content showed the influence of prior knowledge of baseball. That is, students with high knowledge were able to provide more propositions about "an auxiliary action," one of the grammatical baseball categories. During conferences, students with high knowledge were also able to make comments on specific content features related directly to the goals of the game, while those with low knowledge made only general comments not related to baseball goals. Regarding the second draft, this

stu

cha

con

inf

pri

McC

sub

que

wri

of

com

kno

stu

coh

abl

mor

(19

use

inc

ill

abi

The

study showed that students with high knowledge made more changes than the students with low knowledge. The conclusion of this study was that prior knowledge influenced the students' writing processes.

Another interesting study about the effect of prior knowledge on writing coherence was conducted by McCutchen (1986). McCutchen first tested her 30 subjects' knowledge of football by giving them 30 questions about a football game. Then she asked them to write compositions about football. After the coherence of those compositions was evaluated, McCutchen found that composition coherence was correlated with the amount of knowledge the students had about football. That is, students with high knowledge were able to generate coherent texts. Furthermore, those students were also able to bring out and discuss important ideas of football more coherently than the students with low knowledge.

To have successful written communication, Thomas (1986) asserts three types of knowledge are crucial:

1. Knowledge of conventions which includes the use of words and grammar.

2. Knowledge of language, or discourse which includes the three speech acts: perlocutionary, illocutionary, and locutionary acts. This means the ability of the writer to do something to the audience. The writer may want to move the audience, amuse them,

in
pe
wr
as
wi
to
lo

wr
kno

inf
nee
eas
cal
man
the
(19
wel
sho
kno
mat

inform them, or persuade them to perform the perlocutionary speech act. When stating these goals, a writer may want to advise, assert, argue, promise, or assess to perform the illocutionary speech act. Writers will refer to entities, such as places, things, or ideas to express their intentions while performing the locutionary speech act.

3. Knowledge of the world which means that writers should have a good sense of what their audience knows. Thomas says:

> . . . a skilled writer will have a fairly accurate idea of what she can expect her audience to know about the words--facts, common opinions, and so forth. World knowledge is a good understanding of what her audience already knows and believes about the world (p. 587).

To do this, writers should provide only required information without saying more or less than what is needed. They also should provide true, relevant, and easy-to-understand information. Those four maxims are called the maxims of quantity, quality, relation, and manner, previous experience and writing. In suggesting the experiential approach to teaching writing, Judy 1980) says: "to write well, one must know something ell" (p. 39). Judy indicates that composition teachers hould rely on the students' experience and what they now in order for the students to produce better written aterials. Students, however, Judy says, should be given

an

wri

rec

(19

ass

att

tim

wit

pla

Kel

wit

gra

in

Wri

stu

whi

col

ass

Lat

cor

wri

and

alt

an opportunity to talk about what they know before writing. He calls this technique an experience reexamination.

Chiesi et al. (1979), Hilgers (1982), and Kellogg (1987) indicate that the reason prior topic knowledge is associated with better writing is that students pay more attention to their writing instead of spending effort and time generating ideas. Kellogg indicated that students with high knowledge demonstrated less cognitive effort to plan, organize, and review their ideas. Agreeing with Kellogg, Hilgers stated that if the writers are at ease with the content, they will give arrangement, style, grammar, and mechanics more attention which will result in improvement of the quality of their writing.

Writing and Topic Choice

Kincaid (1953) hypothesized that the quality of students' writing is stable regardless of the topic on which a student writes. Kincaid found out that the college students' writing quality varied according to the assigned topic, and so his hypothesis was rejected. Later, Wiseman and Wrigley (1958), in a similar study, concluded that the differences found in the children's writing were caused by the titles of the topics. Wiseman and Wrigley suggested that writing teachers should employ alternative title techniques when assigning an essay

paper

inter

knowl

.
c
w
c
l
T
o
a
s
e
c
t
S
d
t
l

To av

might

stude

there

infor

activ

the

McKay

journ

retri

instr

paper. In this way, a student could choose a subject of interest.

McKay (1984) indicated that limited topic knowledge may impede good writing,

> . . . we can allow students a great deal of choice in the selection of writing topics. If we want to select only one topic, we should choose a topic about which the students are likely to have knowledge or experience. Therefore, topics which presuppose a great deal of specific knowledge about American culture or about a particular academic field with which the students are unfamiliar should be avoided. For example, an assignment which asks students to compare and contrast the educational system of their native country with that of the United States assumes that the students know a great deal about the American system of education. If they do not have this knowledge, they will have little or nothing to say (p. 189).

To avoid this problem, McKay said composition instructors might need to spend some class time "familiarizing" the students with the topic through reading and discussion.

Since, as Flower and Hayes (1981) indicated, there can be a problem in retrieving a suitable amount of information relevant to academic writing, McKay suggested activating the students' schemata of any topic, even if the students happened to know a great deal about it. McKay recommended heuristic devices, brainstorming, or journal writing as techniques which might help students retrieve amount of apt information.

Calkins (1983) indicated that successful writing instruction allows children either to choose their own

top

bett

chil

abou

(198

Stat

sco

ass

rea

to

sho

rea

pri

exp

mecl

of

the

Hoe

ask

fam

topics or to employ brainstorming techniques as an aid to better writing. Graves (1983) also contends that a children's writing quality is better when they write about something they know:

> Writers who learn to choose topics well make the most significant growth in both information and skills at the point of best topic. With best topic, the child exercises strongest control, establishes ownership, and with ownership, pride in the piece (p. 21).

These findings are consistent with Hoetker's (1982) contention that when the scores of California State University and College Equivalency Examinations' scores in 1973 and 1974 declined drastically, the topics assigned in the two examinations were reviewed and the reason for the variations in scores was found to be due to the topics assigned for the examination. The review shows the 1974 topic "called for highly abstract reasoning and was manifestly more difficult than the prior year's topic which called upon a personal experience" (p. 381). Hoetker concluded that the dull, mechanical, and abstract pieces of text came as a result of asking the students to write on topics about which they knew little or nothing. The implication of Hoetker's report is that teachers and examiners should ask students to write about topics with which they are familiar.

co
do
re
in
So
pr
is

wr
th
de
Ra
th
th

pr
re
th
qu
sa
pr
th
(1

Language Proficiency and Writing Among
Nonnative Speakers

In reading, both prior knowledge and language competence are important for the interaction of both top-down and bottom-up processing modes. In discussing reading comprehension, we have seen that without this interaction, reading comprehension will be incomplete. So far, all the studies which investigated the effects of prior knowledge on writing revealed that prior knowledge is also crucial for writing.

Concerning language proficiency in relation with writing, Raimes (1987) suggests that decisions regarding the placement of students in writing courses must not depend solely on the analysis of language proficiency. Rather, such decisions must depend on further analysis of the students' written products and information about their experience with L1 and L2 writing.

Different views of the role of language proficiency on writing were presented in current research. For instance, Jones and Tetroe (1987) contend that language proficiency is crucial to planning the quantity, but not the quality of writing. Jones (1985) says that mastering the linguistic code and being proficient in it does not necessarily entail mastering the written code. In contrast, Hanania and Shikhani (1986) argue that the correlation between multiple-choice

te

te

re

in

th

th

co

gr

(1

sp

ed

th

th

wr

la

as

emp

ed

th

id

co

la

pr

tests and integrative tests (cloze tests) and performance tests, such as writing tests, is significant.

Waltman (1983) conducted a study to assess the relationship between competency in grammar and the scores in a business communication course. His conclusion was that the correlation between written report grades and the usage test scores was marginal. He also found the correlation between the final course grade and grammatical competence to be moderate.

Grammatical competence which, according to Canale (1983), includes knowledge of vocabulary, pronunciation, spelling, and word and sentence formation, is crucial for editing written material since it helps students handle the structure of the language. Krashen (1984) contends that teaching grammar does not provide the students with writing ability. Zamel (1982) indicates that teaching language in writing classes does not help to view writing as discovering meaning. Pearl (1979) says that emphasizing grammar will make the students obsessed with editing. And if students are preoccupied with editing, they will not worry significantly about formulating new ideas (Sommers, 1980).

Reid (1987) gives two causes which lead to communication failure of nonnative writers. One is the lack of schemata. The other is the emphasis on language proficiency. Reid says that unfortunately, many

non

inf

the

Rei

lan

the

inf

stu

con

ess

stu

pro

pro

stu

wri

bot

kno

nonnative speakers do not have the necessary background information and experience (schemata) that would allow them to complete academic writing tasks successfully.

> . . . This problem is not fundamentally a question of language proficiency, although frustrated university professors may lay the blame for unsuccessful written communication not on what is immediately obvious. "This student does not understand what I want; I think he needs work in grammar" (p. 34).

Reid proceeds to argue that despite the importance of language proficiency in writing, it does not constitute the core problem. Rather, it is the lack of background information that causes the problem.

The message that has been obtained from these studies is that grammar and language proficiency may constitute an important factor, but not the only essential one in learning how to write well. These studies challenged the notion that emphasizing language proficiency in writing classes may solve writing problems. Doing so may aggravate them. Therefore, this study will attempt to draw conclusions for teaching writing based on the hypothesis that writing hinges on both students' prior knowledge of the topic and students' knowledge of language.

ut.
(1!
ar
kn
pr

st
st
st
se
ar
th
wo
St
wo
th
as
le

am
sh
fl

Measuring Prior Knowledge
and Writing Performance

Prior Knowledge

A prior knowledge measurement was successfully utilized with native speakers by Langer (1984), Newell (1984), and Chesky and Hiebert (1987). In their recent article, Newell and MacAdam (1987) explained the prior knowledge measurement and how it was applied in two previous studies.

These studies provide the measurement with which students' prior knowledge was assessed in the present study. The first step is to choose a topic for the students to write about. Next, the raters read a selected article on the theme of that topic. From that article, raters independently choose words or phrases that represent the central ideas to that theme. Those words/phrases constitute the prior knowledge measurement. Students then are asked to write associations to those words or phrases. For scoring the students associations, the prior knowledge measurement indicated that students' associations must be categorized by raters into three levels: fluency, organization, and combination.

Fluency was defined by Langer (1984) as the amount of knowledge the students had about the topics and should be scored on a three-point scale: (3) high fluency, (2) moderate fluency, and (1) low fluency.

g

(
o
p
c

u
o
a
(
r

<u>T-</u>

c
(1
r
l
"s
f

c
su
wa

Organization is scored within the organizational guidelines depicted in Figure 1 from Newell and MacAdam (1987). Combination is the accounting at highly organized and partially organized knowledge. These procedures are explained in detail in the methodology chapter.

Writing Measurement

This section reviews the literature which was utilized to elicit a measurement of T-unit length, amount of subordination, revision strategies, global coherence, and involvement. The rest of the writing measurement (content and text sophistication) were originated by the researcher.

T-Unit Length

T-unit length is a measure of linguistic complexity. O'Hare (1973), Mellon (1969), Crowhurste (1980), Hunt (1965), and Loban (1976) state that a relationship exists between the length of T-units and linguistic complexity. Hunt termed this relationship "syntactic maturity," and Mellon called it "syntactic fluency."

As Myers indicates, the T-units are used to show complexity, but do not show the utilization of subordination. To measure subordination, a further step was taken. This was quantifying the ratio of clauses to
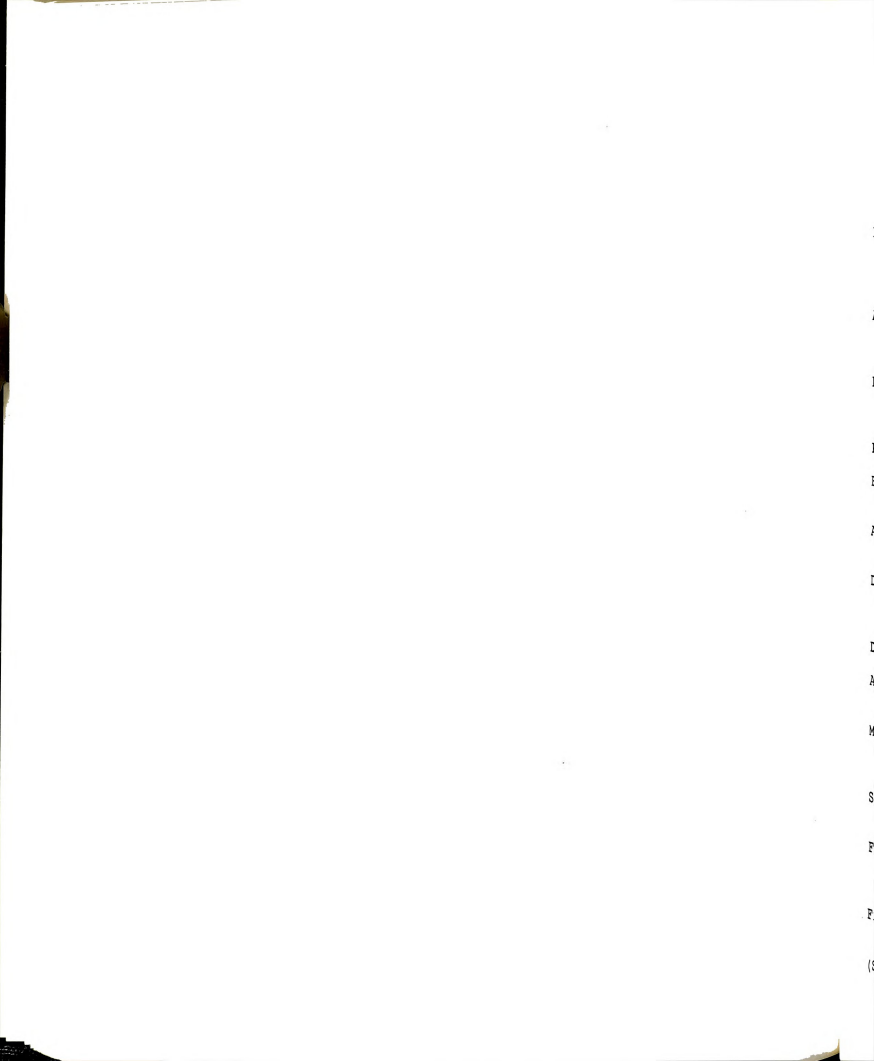
Highly Organized Knowledge (3)

Superordinate concepts--higher class category
e.g., schizophrenia--"One of a group of severe mental disorders"

Definitions--precise meaning
e.g., schizophrenia--"a psychotic disorder characterized by withdrawal from reality including behavioral disturbances."

Analogies--substitution or comparison for a literal concept of expression
e.g., schizophrenia--"schizophrenia is a god-demon"

Linking--connecting one concept with another
e.g., schizophrenia--"schizophrenia is like living in two worlds because . . ."

Partially Organized Knowledge (2)

Examples--equal class, but more specific
e.g., schizophrenia--"split personality"

Attributes--subordinate to large class
e.g., schizophrenia--"character disorder"

Defining characteristics--defines a major aspect of the concept
e.g., schizophrenia--"withdrawal from reality"

Diffusely Organized Knowledge (1)

Associations--peripheral cognitive links
e.g., schizophrenia--"Jekyll and Hyde"

Morphemes--echoes smaller unit of meaning such as prefixes, suffixes, or root words
e.g., schizophrenia--"Schizoid"

Sound alikes--similar phonemic units
e.g., schizophrenia--"Lotte Lenya"

Firsthand experiences--peripheral responses based on recent exposure
e.g., schizophrenia--"crazy--like in the movies"

Figure 1. Levels of organization and response categories: Schizophrenia.

(Source: Newell & MacAdam, 1987)

T
c
a
(
t
o
i
r
t
p
in
I
t
a
w
sy

An

su
co
ob
ra
an
in
by

T-units in order to find out how often subordinate clauses were added to main clauses. Myers (1985) defines a T-unit as "the main clause and all of its modifiers" (p. 30). To measure the students' writing complexity, the raters were given guidelines for T-unit counts originated by Hunt (1965), used by Mellon (1969), and illustrated by Meyers (1985). Using those guidelines, raters were trained to count every T-unit in the essays; they also counted the words. The mean number of words per T-units was obtained by dividing the number of words in the essay by the number of T-units in the same essay. It is probably appropriate to indicate here that despite the criticism that T-unit length has been conceived of as a measure of syntactic complexity, the T-unit is still widely used in measuring native and nonnative speakers' syntactic ability.

Amount of Subordination

As Beaman (1984) indicated, amount of subordination is also an indicator of linguistic complexity. The amount of subordination is measured by obtaining the ratio of main clauses to all clauses. This ratio is measured by counting all clauses (subordinate and main) in an essay and counting all the main clauses in the same essay then dividing the number of all clauses by the number of main clauses.

R

i
n
c
i
h
a
c
o
r
co

of
re
su
Ex
st
im
ex
im
wr

of
st

Revision Strategies

Revision is pausing to go forward. Its importance comes from the notion that if a writer does not go back, that writer cannot successfully carry on the composition in an orderly fashion. Revision is an important component in written discourse strategies that helps the writers to clarify the meaning of the text they are writing. Taylor (1981) defines revision as "that crucial point in the process when discovery and organization come together, when writers refine and recast what they have written and shape it into a coherent written statement" (p. 7).

According to Murray (1978), there are two levels of revision: internal and external. He defines internal revision as a concentration on the content to rework the subject, information and argument, and structure. External revision pertains to the audience and relates to style and tone, language, and mechanics. This step is important as Perl (1979) contended to translate explicitly the tacit sense which would result in the improvement of the form and the product of the students' writing.

In light of these definitions, a simple counting of internal revision strategies, external revision strategies, and total revision strategies evolved.
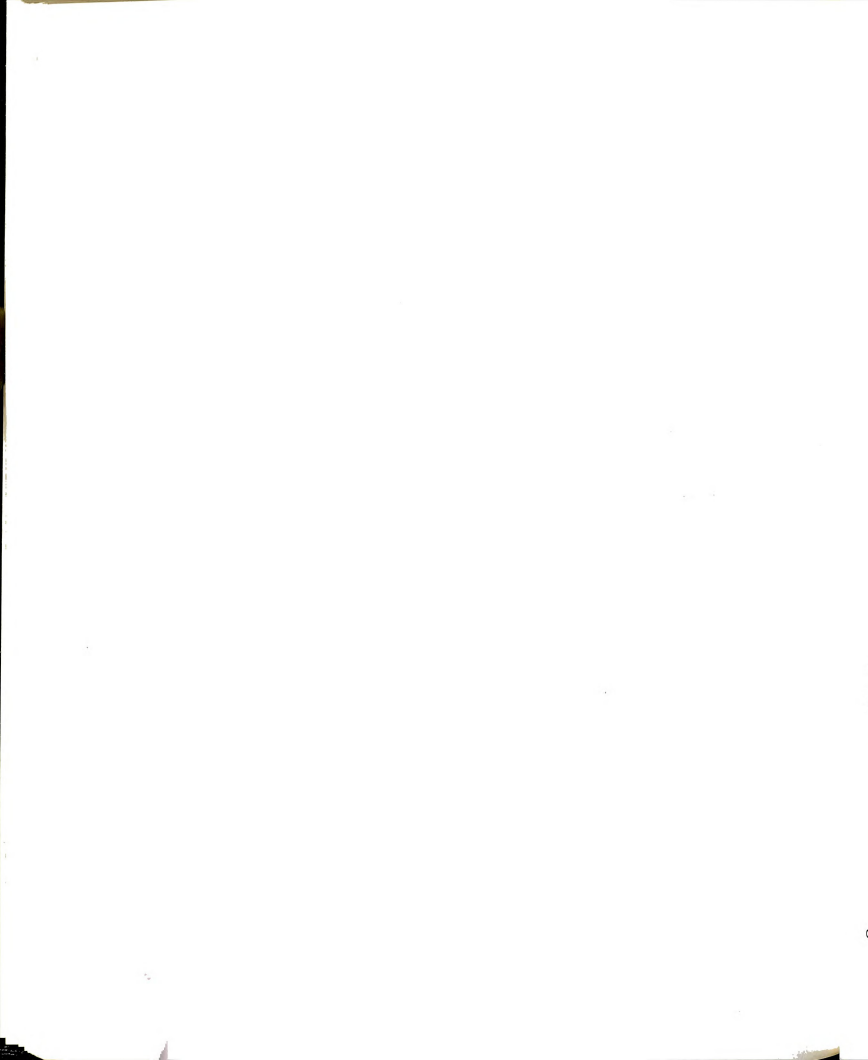
Global Coherence

According to Cooper (1988), Langer (1984), Carrell (1982), and Witte and Faigley (1981), the cohesive ties provided in Haliday and Hasan (1976) do not measure the quality of coherence. Cooper said, "Writing exercises must go beyond syntax to include the complete written text" (p. 356). And Langer states, "(a) more coherent text would not necessarily have more cohesive ties than a less coherent one" (p. 33). Rather, coherence is determined by the degree to which cohesive chains interact with each other. Langer also contends that a more coherent text "would necessarily have more interaction among the cohesive chains" (p. 33) than would a less coherent text.

Coherence in this study means the extent to which a text is globally coherent. A recent definition of coherence provided by Phelps (1985) and modified by Cooper (1988) is:

> Coherence is a property of intentional global relatedness that readers ascribe to textual meaning and thus receive their own integration or are strongly correlated with the intentions of the writer. Just as coherence is the semantic and pragmatic integrity discovered by readers in textual meaning, cohesion is broadly the verbal relatedness of the texts as a cuing system (p. 354).

So coherence is related to readers, while cohesion is related to texts. A recent Holistic
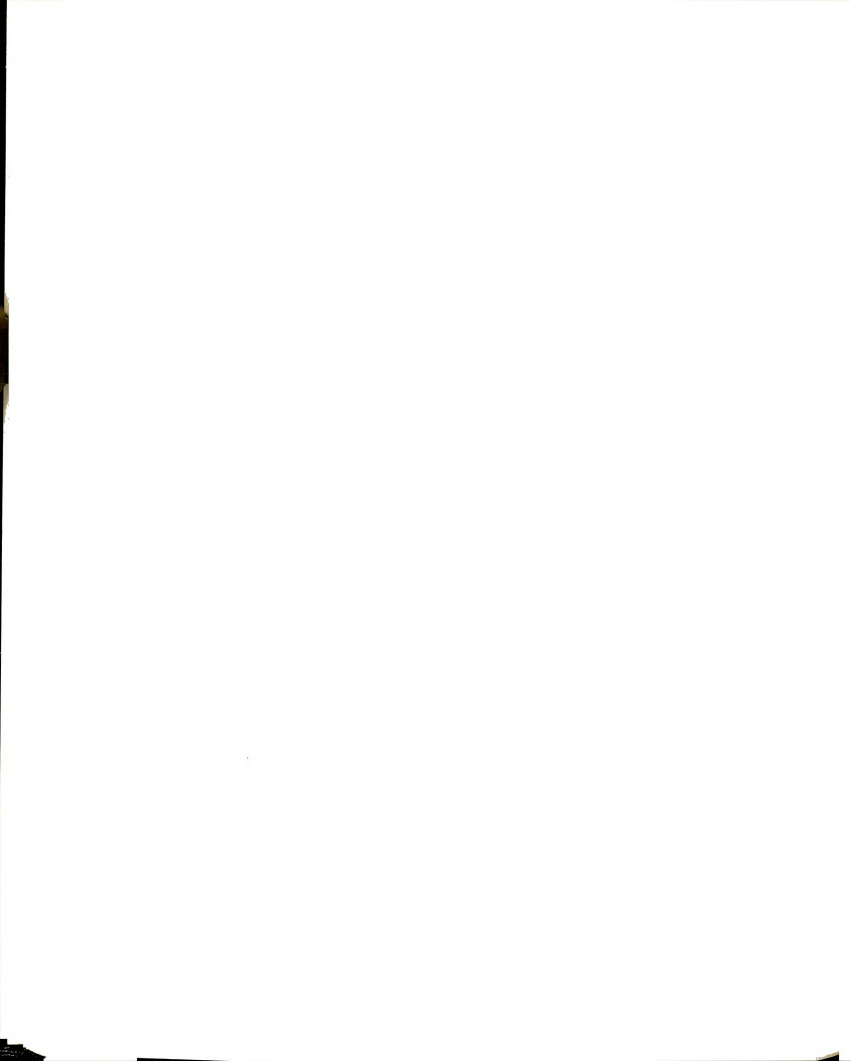
Coherence Scale provided by Bamberg (1984) of the University of Southern California measures the extent to which the text seems coherent to the reader.

To measure coherence, Bamberg's (1984) five-point coherence scale was used. In this scale, number 5 denotes "fully coherent" and number 1 denotes "miscellaneous." This measure will be discussed in more detail in Chapter Three.

Involvement

Chesky (1984) defined involvement as the degree to which students like their writing, find it easy, and believe they truly have something to say to someone. The involvement measurement in this study was designed by the research based on Chesky's definition of involvement and based on Krashen's (1984) effective filter hypothesis.

Summary

These studies have shown that readers' previous knowledge about a passage helps them construct the totality or scope of the writer's message and arrive at full comprehension. This research recognizes the equal importance of both the reader and the text as well as the necessity of the interaction between them in order for comprehension to be achieved.

These results encouraged researchers to conduct studies to investigate the degree to which writers'
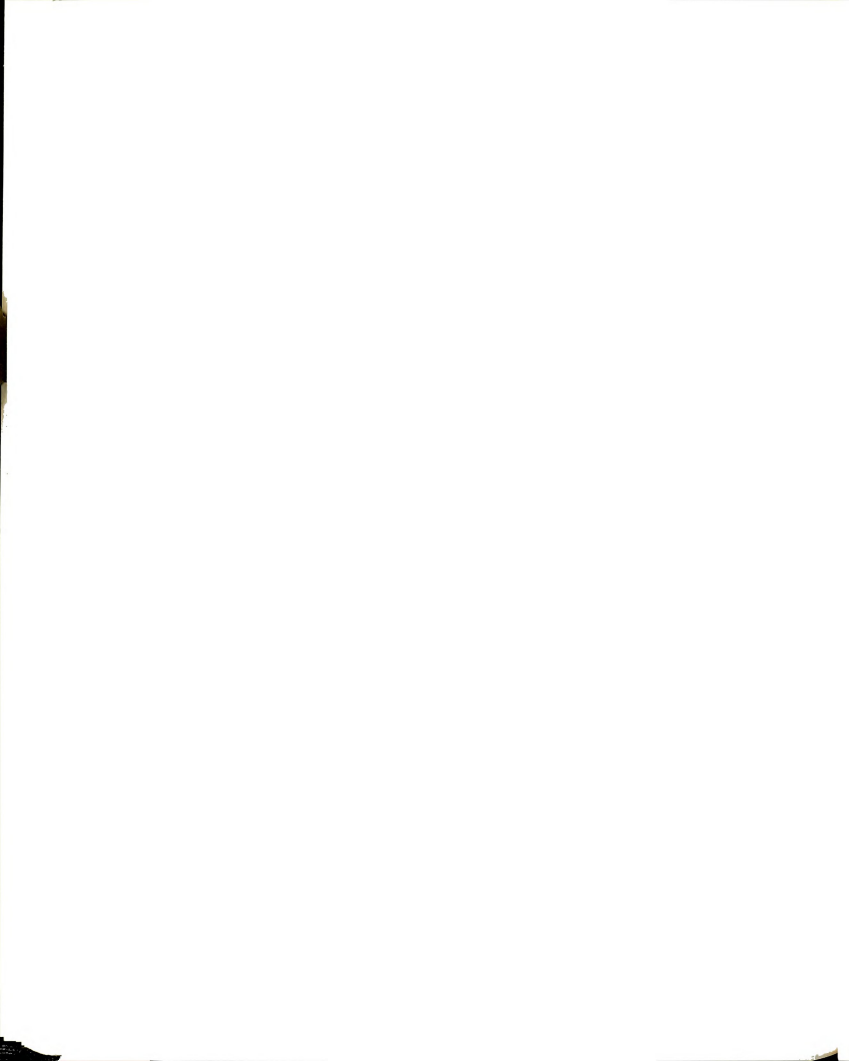
previous knowledge is important to their writing. The results on the whole have indicated significant relationships. However, the research has left some other questions, such as the role of background knowledge in writing of ESL students.

In this review of the literature, we have a also seen that studies about the relationship between grammar and language proficiency and writing of nonnative speakers is not so substantial as was once assumed.

Included in this chapter is also a review of the measurement of prior knowledge and some writing elements, such as T-unit length, amount of subordination, revision strategies, global coherence, and involvement with the texts. We have discussed the state of the art of the measurement of each writing element.
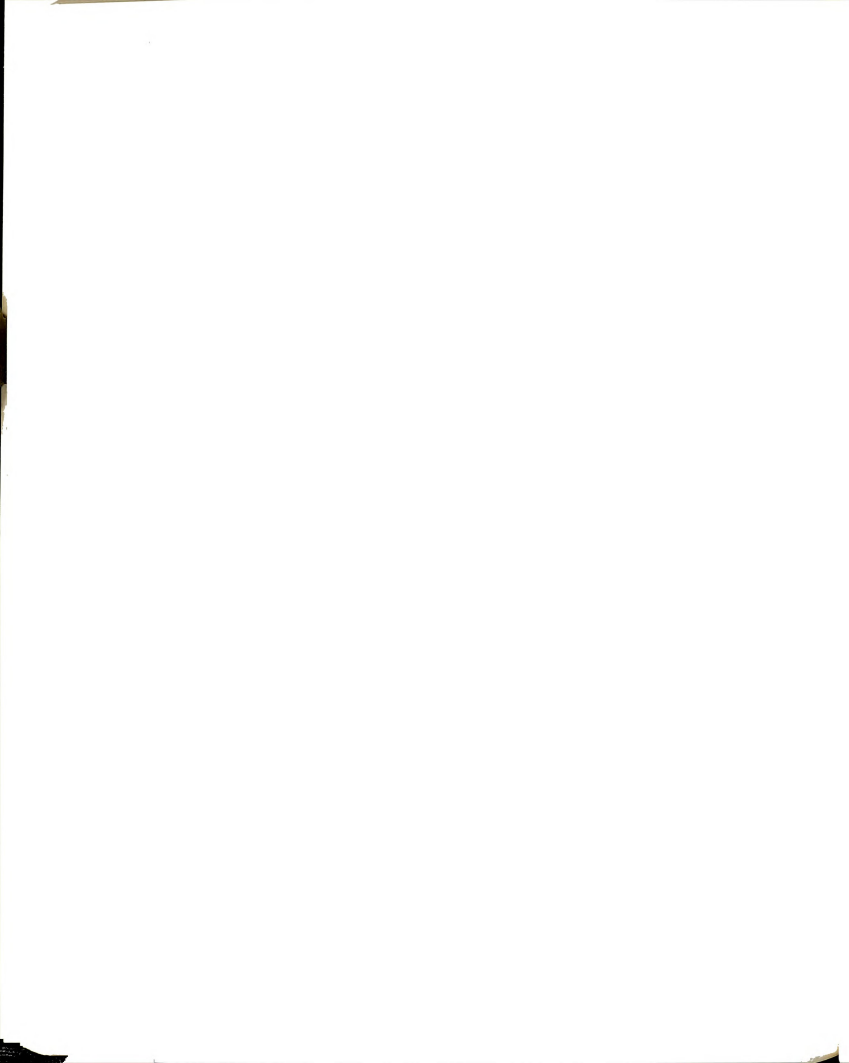
CHAPTER III

METHODOLOGY

The main purpose of this study was to examine the relationship among prior knowledge, language proficiency and writing among nonnative speakers. This chapter presents a description of all variables, samples, materials, and procedures followed to administer, score, and analyze the tasks performed by both the subjects and the raters in the collection of the data. A brief description of the statistical procedures used to analyze the data is also provided.

The Study's Variables

The prior knowledge and overall language proficiency which constitute the two major independent variables of this study were represented by several components. The sub-components of prior knowledge are overall knowledge, fluency, organization, and combination. The sub-components of overall language proficiency are a subset of those language skills measured by the language proficiency test of the English Language Center of Michigan State University. Those
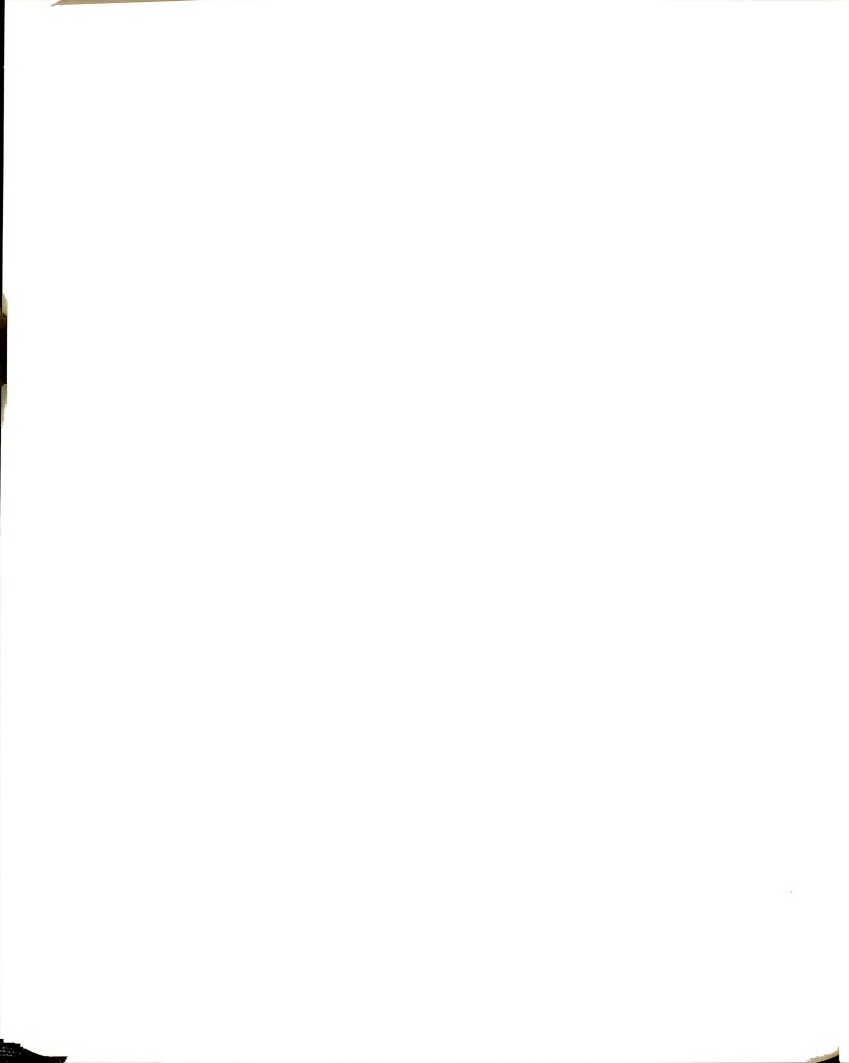
skills are grammar, vocabulary, reading, listening, and writing.

The measures of the students' writing which constitute the dependent variables are:

1. Linguistic complexity represented by:
    a. T-unit length
    b. Amount of subordination
2. Writing proficiency scores (as measured by the ELC)
3. Revision strategies
    a. Internal revision
    b. External revision
    c. Total revision
4. Content length
    a. Number of words
    b. Number of ideas
5. Global coherence
6. Text sophistication
7. Involvement with writing.

Subjects

The accessible population was a group of students who were studying English at the advanced levels in the English Language Center in the spring of 1988. The study was carried out in accordance with the requirements for human subjects and the English Language Center
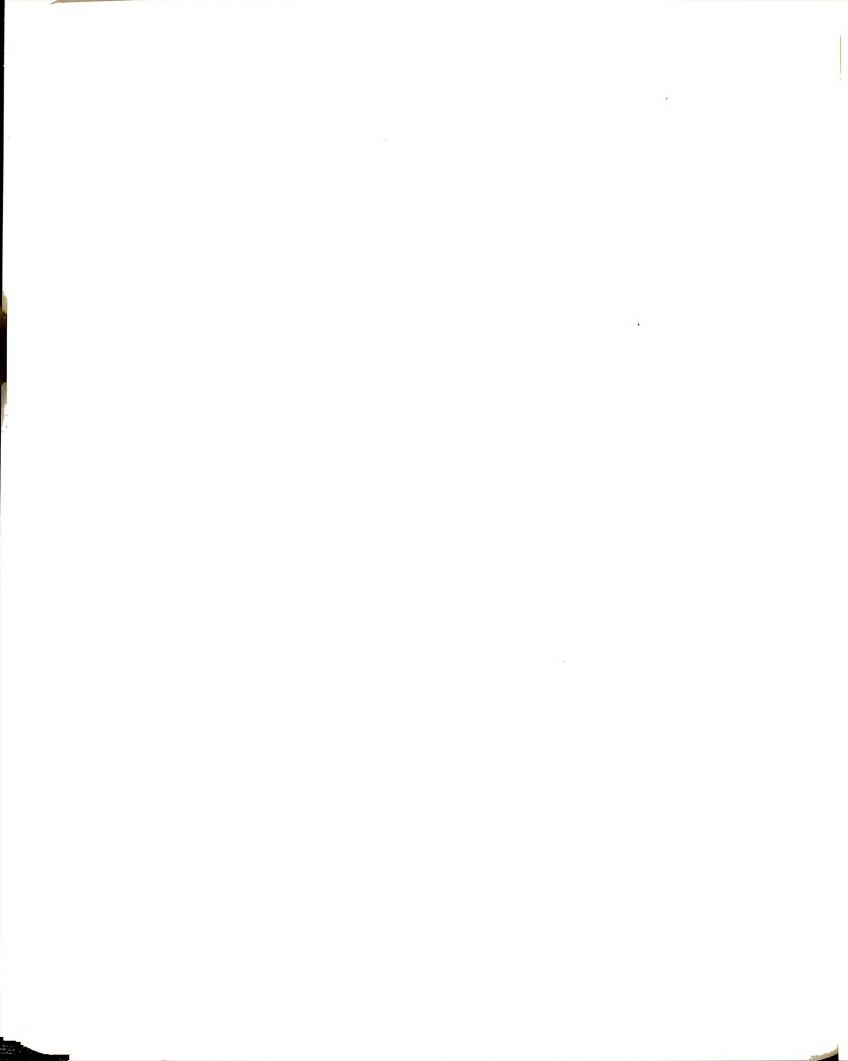
regulations. After requests had been approved, all students in levels D and E were asked to participate voluntarily in the study (see Appendix A). However, only 65 out of 102 students attending these levels agreed to participate in the study. Sixteen students were later excluded from the study because of incomplete responses to one of the study's two tasks (the prior knowledge task and the written discourse task). Only 49 students were found to have complete responses to both tasks. This number constituted the final number of students participating in the study.

Materials

Topics.--The researcher began with the following ten topics which were reviewed by the guidance committee: eclipses, snoring, condominiums, hurricanes, how to fix an automobile, high blood pressures, diving, and photography. Of these topics, photography, diving, and eclipses were considered most appropriate in conjunction with the instructional program of the English Language Center.

Selecting the Prompts for the Prior Knowledge Test

The researcher selected the three prose passages about photography, diving, and eclipses from the Britannica Encyclopedia. Those passages were given to
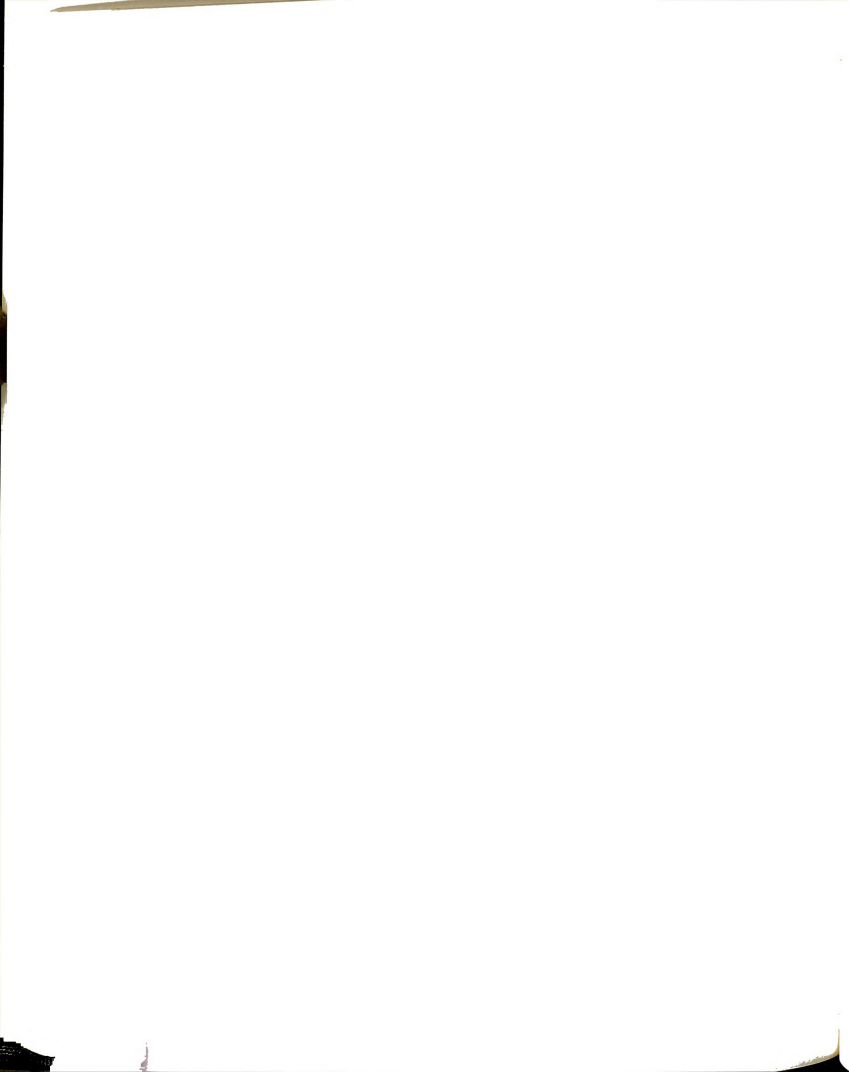
three raters who selected seven prompts from each passage. The prompts were the words or phrases that best represented the central ideas of each topic. Before making their selections, the three raters were provided with guidelines for selecting the prompts provided by Newell and MacAdam (1987) (See Appendix G).

Each rater was asked to rank independently the order of their seven prompts from the most important to least important. The five most important prompts on which all three raters agreed were chosen. Disagreement among raters was resolved through discussion in a meeting moderated by the researcher.

A pilot study was conducted to train the raters on how to score the subjects' prompts and on how to score the writing elements. In the training session held during the pilot group, the researcher met with the three raters to discuss the results and to help resolve any differences of opinion.

Prior Knowledge Test and Background Questionnaire

After the problems that arose during the pilot study were overcome, the researcher met with the subjects in special sessions. In those session, the subjects were given booklets which contained both the background information questionnaire and the prior knowledge tests (see Appendices B and C). In the background
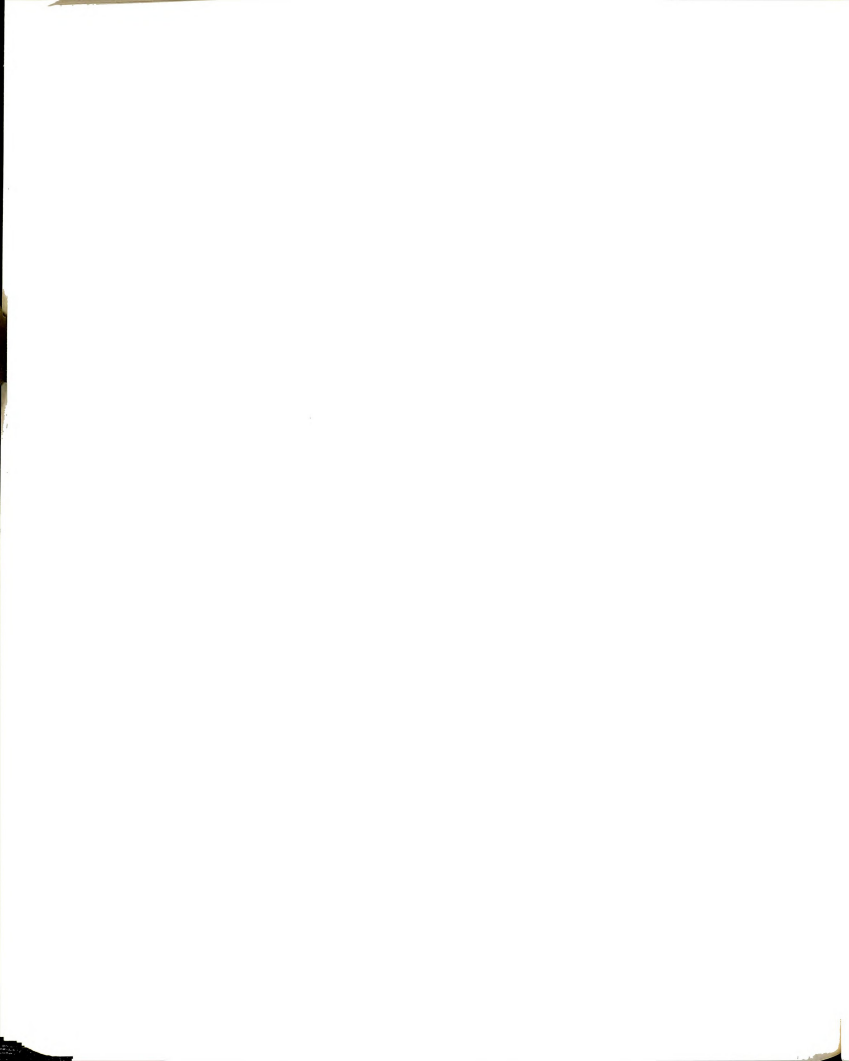
questionnaire, the subjects were asked to provide information about their ages, gender, English Language Center's proficiency scores, level of education, native language, and the amount of reading they did.

After the subjects had completed the background information questionnaire, they were guided to the prior knowledge test section. Together with the researcher, they went over the examples provided in the prior knowledge test to make sure they knew how to perform the test. After the researcher felt comfortable that the subjects understood the task, the subjects were given forty-five minutes to write associations to the fifteen prompts representing the topics of photography, diving, and eclipses. Three minutes were allowed for each prompt. To insure the subjects' comfort during the test performance, they were told this test would be utilized for research purposes only, and no scores would be provided. Furthermore, they were also assured that their names would not be revealed to any one other than the researcher.

Scoring the Subjects' Associations in the Prior Knowledge Test

As was done during the pilot study, the three raters used the procedures outlined by Newell and MacAdam (1987) (see Appendix D) to score the associations to the
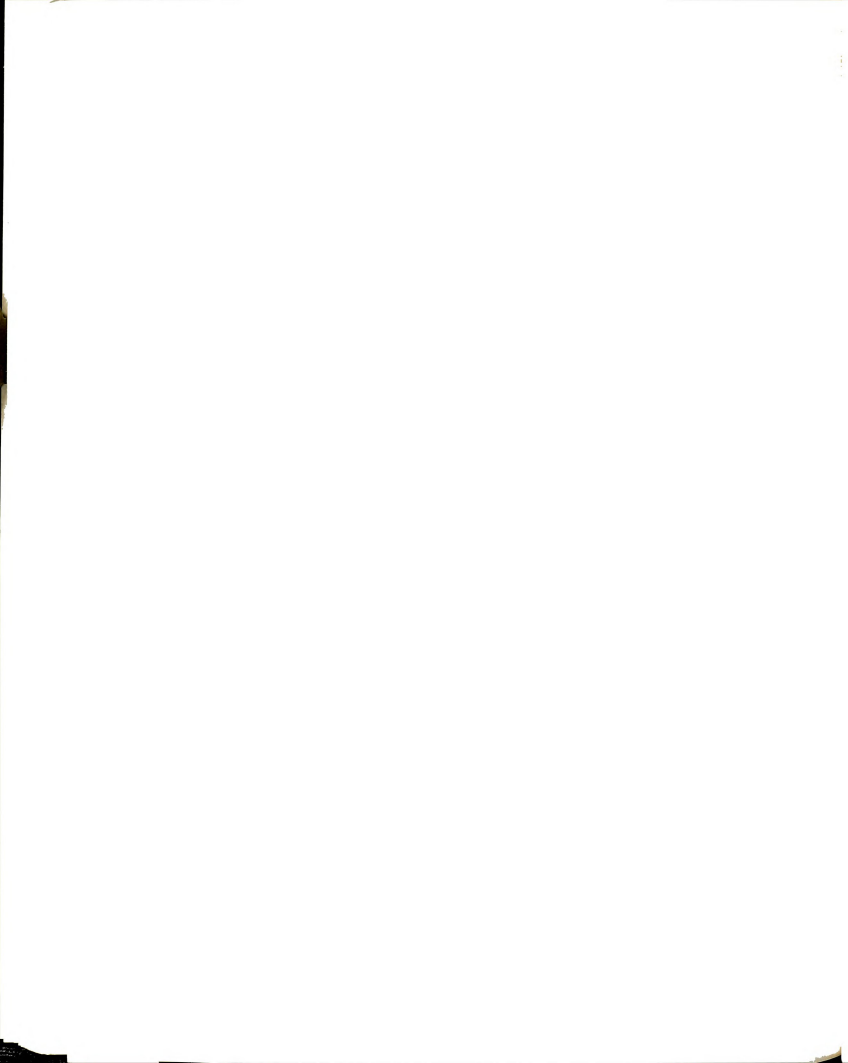
prompts.   The raters scored the associations on three bases:

1. Fluency: A score for the total number of responses to the prompts.   The assumption is made that a larger number of responses indicates a greater amount of knowledge about the topic.

2. Organization: A score for organization or quality of knowledge.   To score this category, raters examined the responses to each prompt and gave a score. To determine a student's total score for organization of knowledge of a topic, the highest level of responses to each topic was averaged across all five prompts.   For example, if the student's prompts are scored 2, 2, 3, 1, and 2, they total 10 points.   These 10 points are then divided by the number of prompts (five), yielding an average score of 2 (10/5 = 2).   Thus, the student received an average score of 2 for the organization of knowledge or the quality of his/her knowledge about the topic (high quality = 3, moderate = 2, low = 1).

3. Combination: A score that combines partial and high organization.   In other words, the scores of high knowledge and moderate knowledge are combined to represent the combination scores, and the low (chance) scores were excluded.   For example, the above-mentioned student would
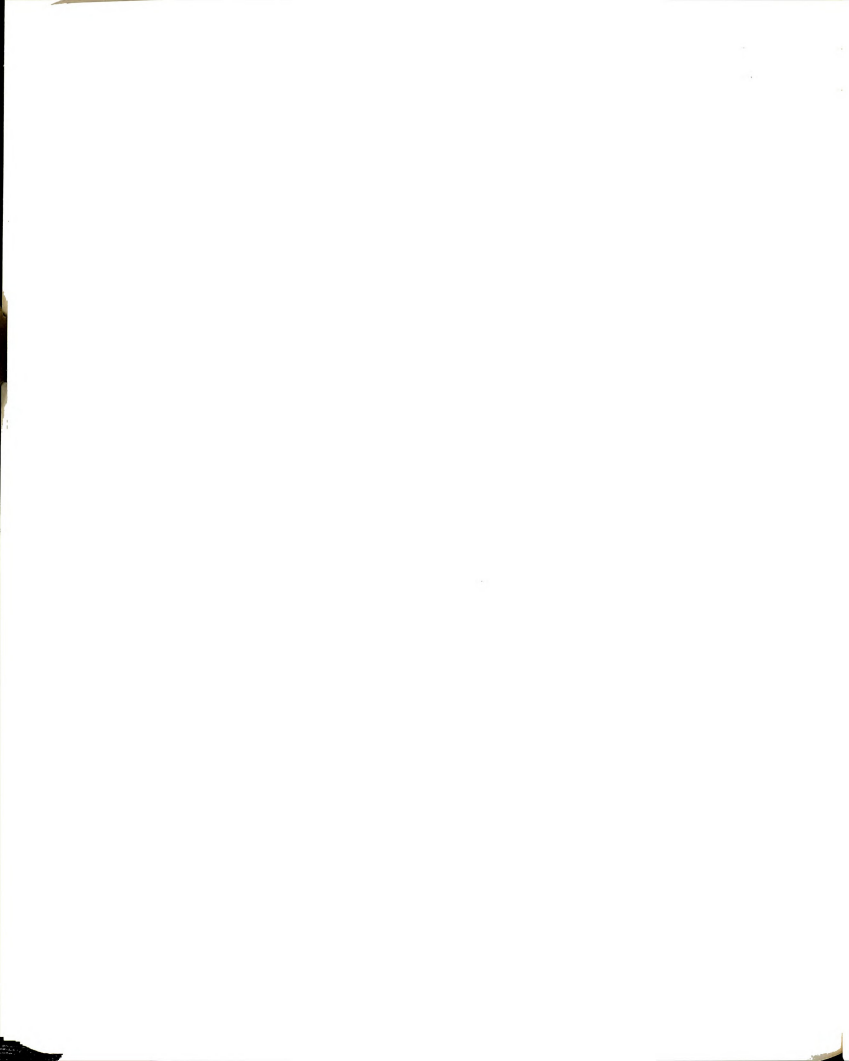
receive a score of (9) for combination because one of the prompts received a low score (1) which was omitted.

Two goals were achieved as a result of scoring these students' associations. First, the students' prior knowledge scores were obtained. Second, after analyzing those scores, it was possible to know which topic of the three had the largest spread of knowledge. Consequently, eclipses was chosen to be the topic for our subjects' writing. Interrater reliability on the test for fluency, organization, and combination of this topic eclipses was .86, .82, and .91, respectively.

Writing Performance and Involvement Questionnaire

Since eclipses happened to be the topic with the largest spread of knowledge, the subjects were asked in an in-class session to write a forty-minute composition about eclipses. In the same session and after the subjects finished writing their compositions, they were asked to spend five minutes to respond to a short questionnaire about their involvement in writing about the topic (see Appendix E).

Writing Measurement

The students' compositions were then given to the three raters who were trained during the pilot study. The compositions were scored for writing measures in the
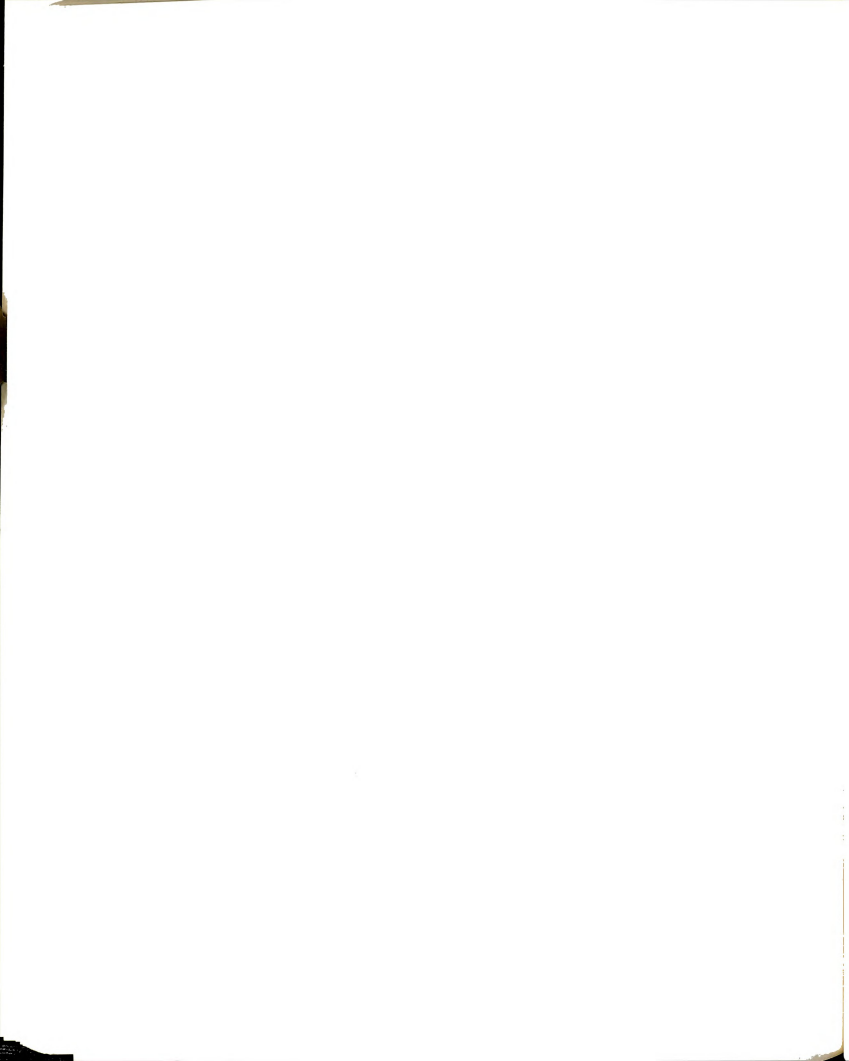
categories of T-unit length, amount of subordination, writing proficiency revision strategies, content length, global coherence, and text sophistication.

T-Unit Length and Amount of Subordination

T-units length and amount of subordination are two measures of linguistic complexity. To measure the mean T-unit length, the three raters were instructed to count only T-units which were either error-free or those containing minor errors which did not interfere with the "readability" of the text. Second or third degree errors, as they were classified by Nas (1975), would be the kind of errors that might hinder the readability of the text, and were not counted. After omitting the T-units that contained major errors, raters counted the remaining number of T-units and the number of words in each of the compositions . The mean number of words per T-unit was obtained by dividing the number of words in the essays by the number of T-units in that essay (Hunt, 1965).

Concerning the second indicator of linguistic complexity which is the existence of subordination, a ratio of main clauses to all clauses was quantified. This was done by (a) counting all clauses (subordinate and main clauses), (b) counting only the main clauses, and (c) dividing the number of all clauses by the number of main clauses.
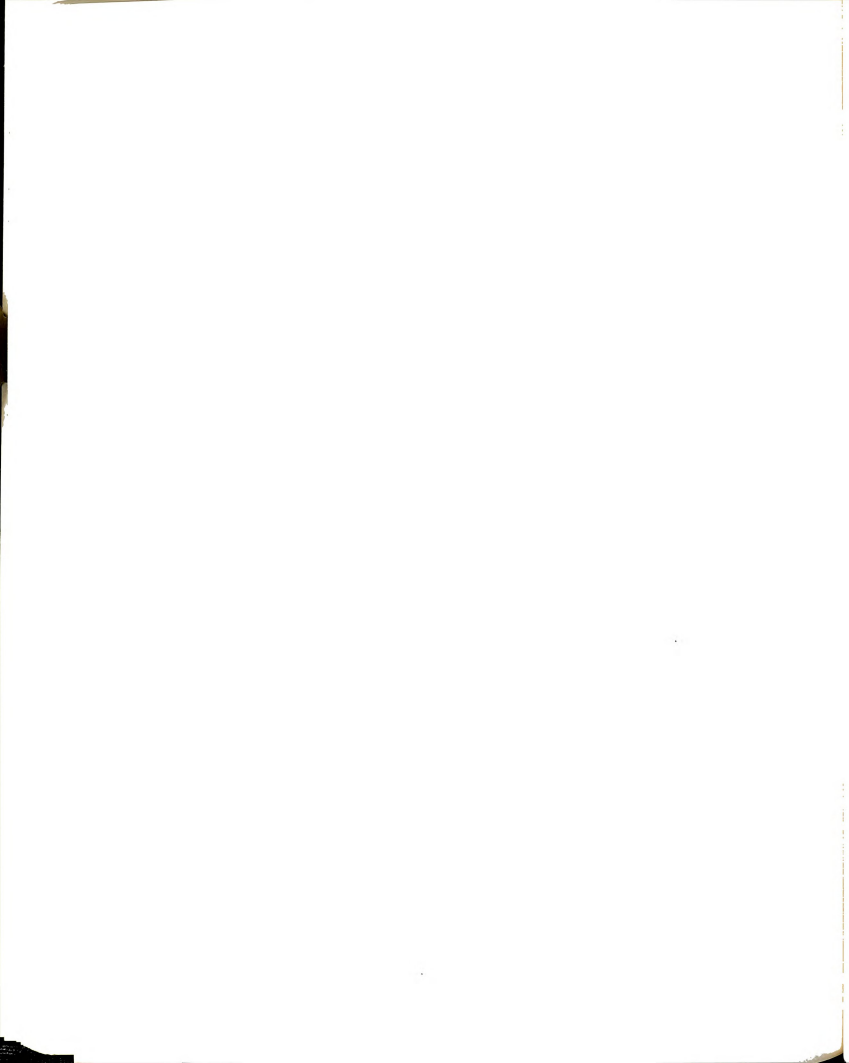
The three raters were asked to work independently. After all compositions were rated by all the raters, a meeting was arranged to discuss and overcome any discrepancies among the raters (see Appendix F for Linguistic Complexity Measures).

Writing Proficiency Scores

The scoring procedures outlined by the English Language Center of Michigan State University were followed to score the writing language proficiency of the students' compositions. The three raters were teachers at the Center and were experienced in applying the Center's writing scale which was used in this study. This scale measures clarity of the texts, language errors, vocabulary choice, and organization (see Appendix G for English Language Center's Writing Scale).

For scoring the subjects' compositions, the raters read each of the compositions and assigned it a score on a 35-100 scale. The final score of each essay was the average of the three raters' scores. The interrater reliability was quantified by Michigan State University's SPSS-X Computer Program and was found to be .82.

Revision Strategies

Revision strategies included counting internal and external revision strategies. Using samples from the
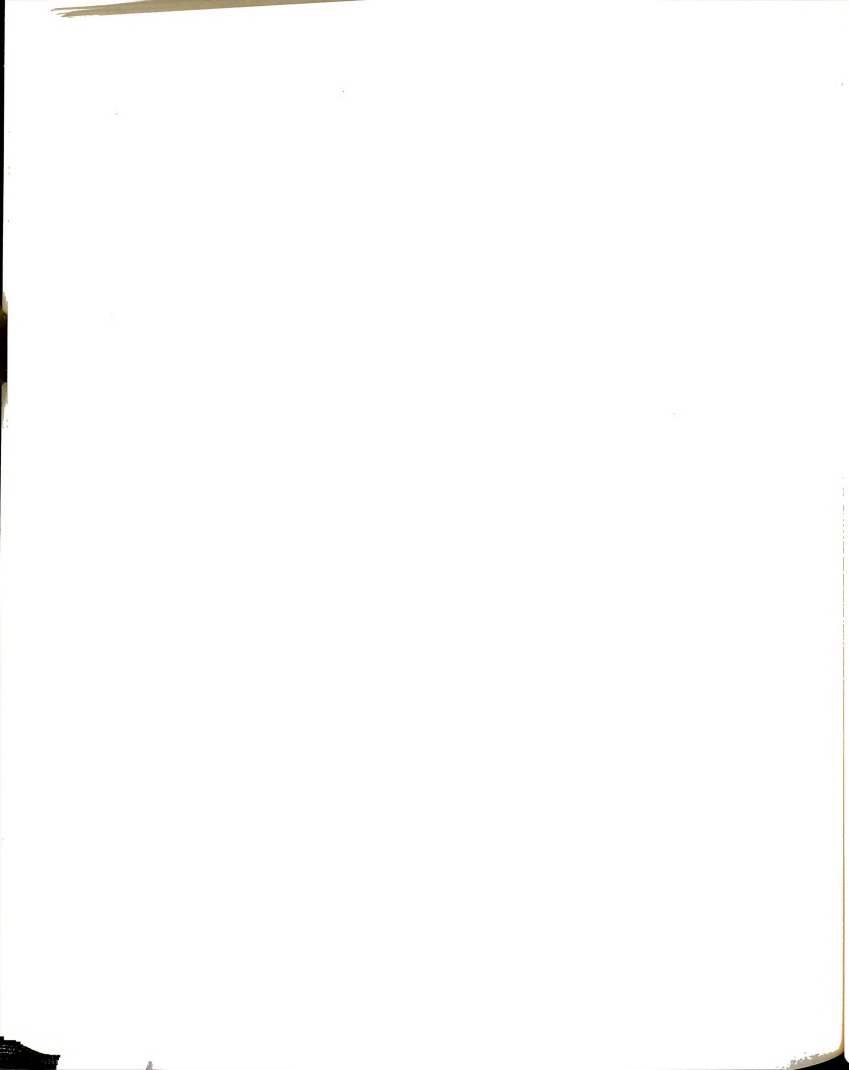
pilot study, the researcher and the raters met several times to discuss the way of counting the revision strategies and to discuss differences in opinion. After the raters had enough information about how to score the revision strategies, they were asked to count the revision strategies which occurred in the compositions of the subjects (see Appendix F for categories of internal and external revision) The count included the changing of sentences, phrases, and words; cutting; adding; reordering; embedding; and word choice.

Content

The length of the texts was quantified by both the number of words and the number of central ideas contained. The method previously used for counting the words to measure the T-unit length was used again in this section to determine the length of the texts. Furthermore, the raters were asked to count the number of central ideas to determine how fluent the text was. Then, in a three-point scale, the raters rated each essay test as having high fluency (3), moderate fluency (2), or low frequency (1). Both the number of words and the number of ideas were utilized to quantify the length of the texts in this study. Content measure are included in Appendix F.
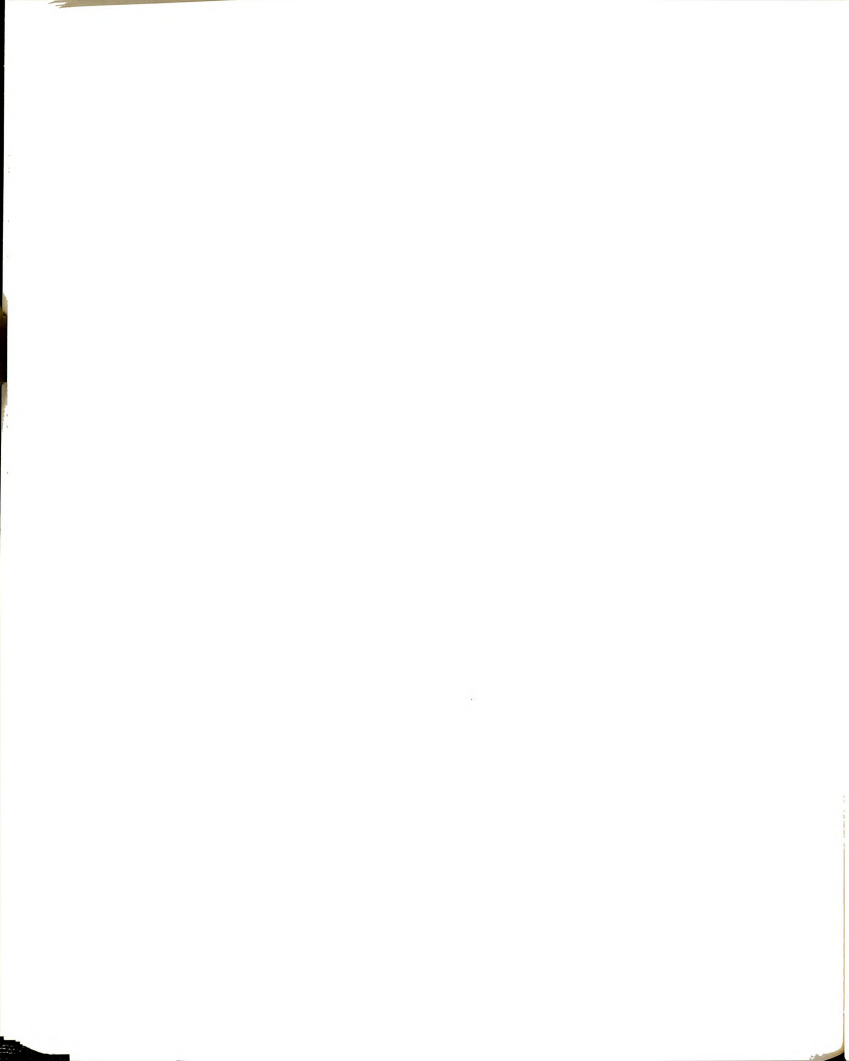
Global Coherence

The global coherence scale of Bamberg (1984) was utilized to measure the global coherence of the texts in this study. The lowest category in this scale is "miscellaneous" with the highest category being "fully coherent" (see Appendix G for global coherence scale). The three raters independently scored each text's global coherence with the guidance of this scale. The three raters's scores of each text were averaged to figure the final coherence score of each text. Interrater reliability of the three raters was .90.

Text Sophistication

Before raters scored the text sophistication in this study, the researcher met with them to discuss the way text sophistication was to be scored. Examples from the pilot study were used to illustrate this process. The meetings of the researcher and the raters were also utilized to resolve any differences in opinion among the raters.

The text sophistication variable was measured through raters' decisions concerning how sophisticated each text was. Their decisions were made and quantified by answering questions about the essays which were concerned with the complexity and sophistication of the
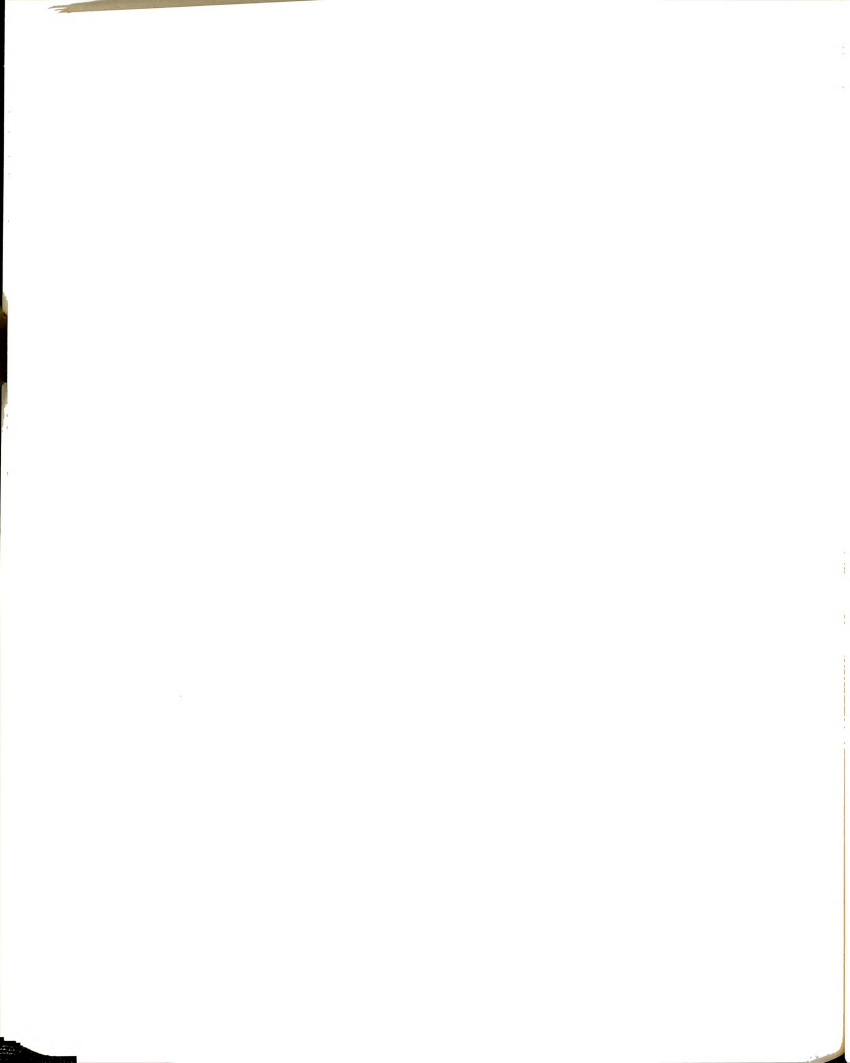
terms used in the text, and the amount of definitions explanations, and repetitions.

The measurement of this variable is contained in Appendix F.

Involvement

Chesky (1984) defined involvement as the degree to which students like their writing, find it easy, and believe they truly have something to say to someone. The involvement measurement in this study was designed by the researcher and based on Chesky's definition and Krashen's (1982) affective factor hypothesis. Participants were asked questions about the topic immediately after writing their texts. The questions concerned the writers' anxiety, confidence, interest, liking, and whether they would write again about this topic if they had a chance. The questions were intended to reflect their feelings about the topic while writing. This measurement was used in the pilot study and worked well. The obtained reliability was a relatively high reliability of .84. The involvement measurement is included in Appendix E.

Language Proficiency and Writing

The participants' language proficiency level was determined by their scores on the English Language Center's Language Proficiency Test. The participants were asked in the questionnaire (Appendix B, Item 4) to provide
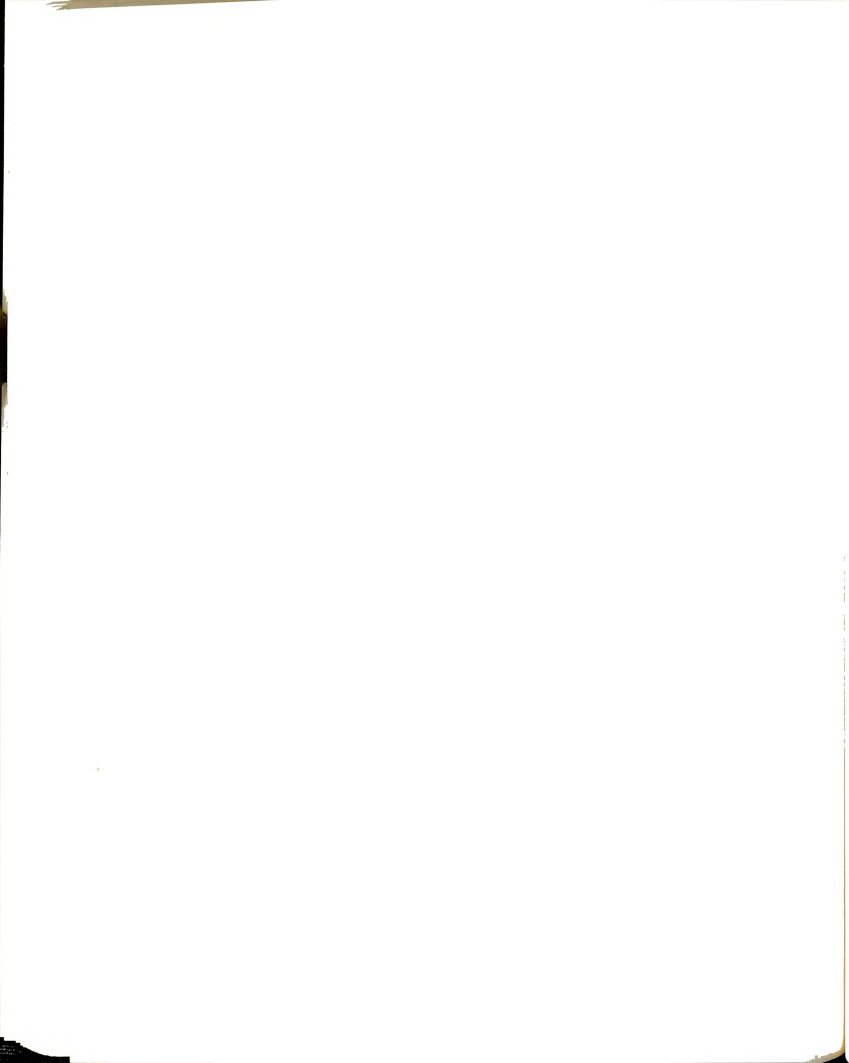
the latest scores they achieved on the test. Those scores were used to examine the relationship between language proficiency and written discourse components mentioned and explained above.

Data Analysis

After data were collected from both students and raters, responses were coded, perfectness and reliability were examined. Also the interrater reliability among the three raters was checked. The researcher used coding procedures and computer programming assisted by of colleagues who were experienced in this field.

The mean scores of the three raters were quantified and used to represent the measurement of the three prior knowledge measurements--fluency, organization, and combination. These scores were also used to represent the written discourse measures: T-unit length, subordination, writing global language proficiency, revision strategies, number of words, number of ideas, coherence, and text sophistication.

To tabulate the demographic information of the participants, the frequency analysis was used. The correlation coefficient was used to compute the relationship between the participants' demographic information, amount of reading, prior knowledge, and language proficiency and all the written discourse
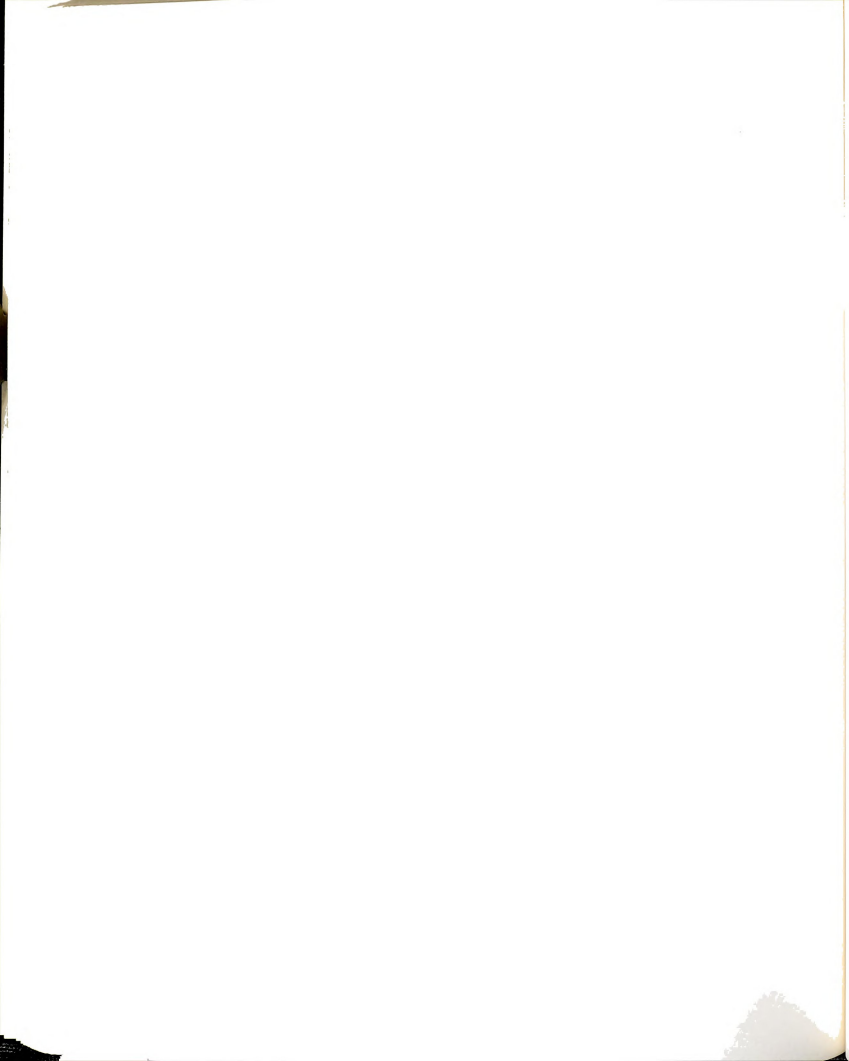
measures. Regression was also used to explain the effects of demographic information, amount of reading, prior knowledge and overall language proficiency on the written discourse measures.

Multivariate analysis of variance and Analysis of Variance were used only to compare differences in written discourse components according to various native-language groups. The Tukey test was also used to compare the means of each of the two subgroups in the written discourse measures.

The SPSS-X statistical package was used in the Michigan State University's computer to derive and analyze the results. The results and the analysis are reported in the next chapter.

Summary

This chapter lays out a road map of what was to be accomplished in the study. The fundamental goal of this study was to find the relationship among prior knowledge, overall language proficiency, and ESL written discourse measures. To carry out this goal, 49 advanced students attending the English Language Center in Spring, 1988, participated in the study. "Eclipses" was the topic chosen and prior knowledge was first measured. Prior knowledge is composed of fluency, organization, combination, and overall knowledge. A standard method was
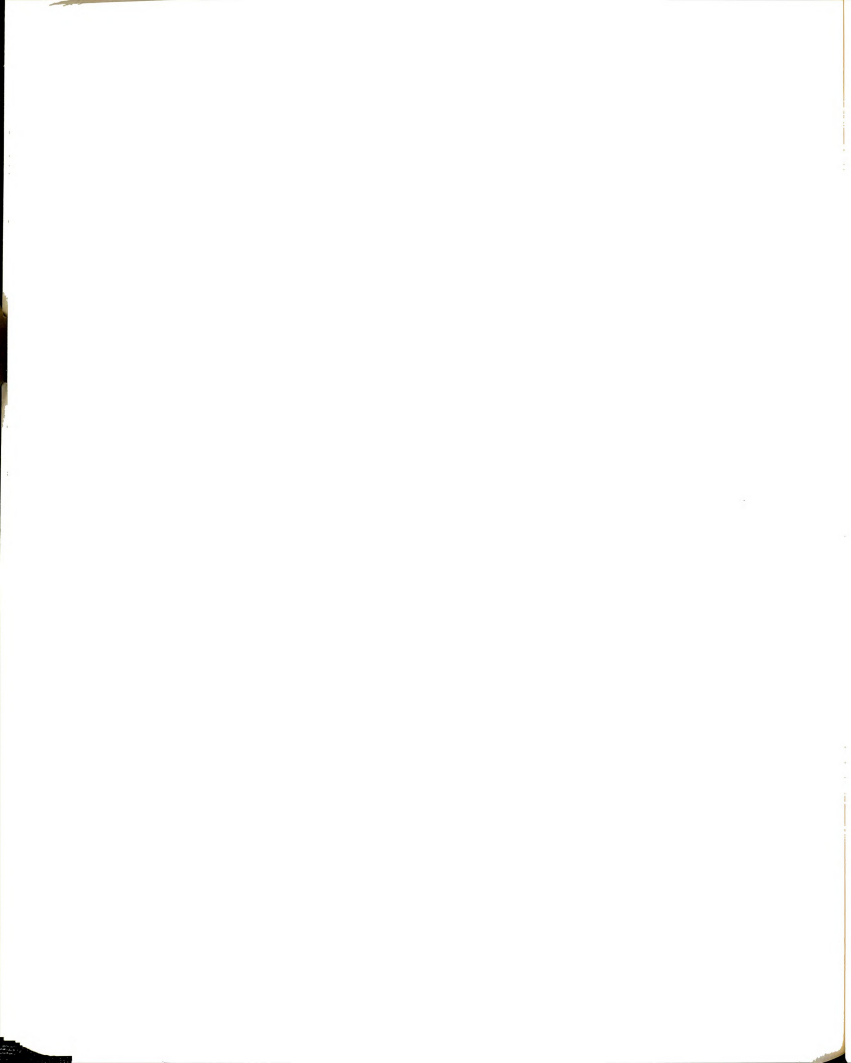
followed to construct a prior knowledge test; three raters were trained to score it. In measuring the students' language proficiency, the English Language Center Language Test was used. The students were asked to write on the topic of eclipses. This topic was chosen from three topics because it was found to be the topic with the largest spread of knowledge. Subjects were also asked to respond to a questionnaire measuring their personal background, language proficiency, amount of reading, and involvement. The subjects' writing performance was analyzed by three trained raters who scored the essays for writing proficiency, content, text sophistication, global coherence, and revision strategies. Both prior knowledge and overall language proficiency were utilized to assess their effects on the subjects' writing performance. The effects of the subjects' demographic characteristics and the amount of reading they do on the subjects' writing were also assessed.
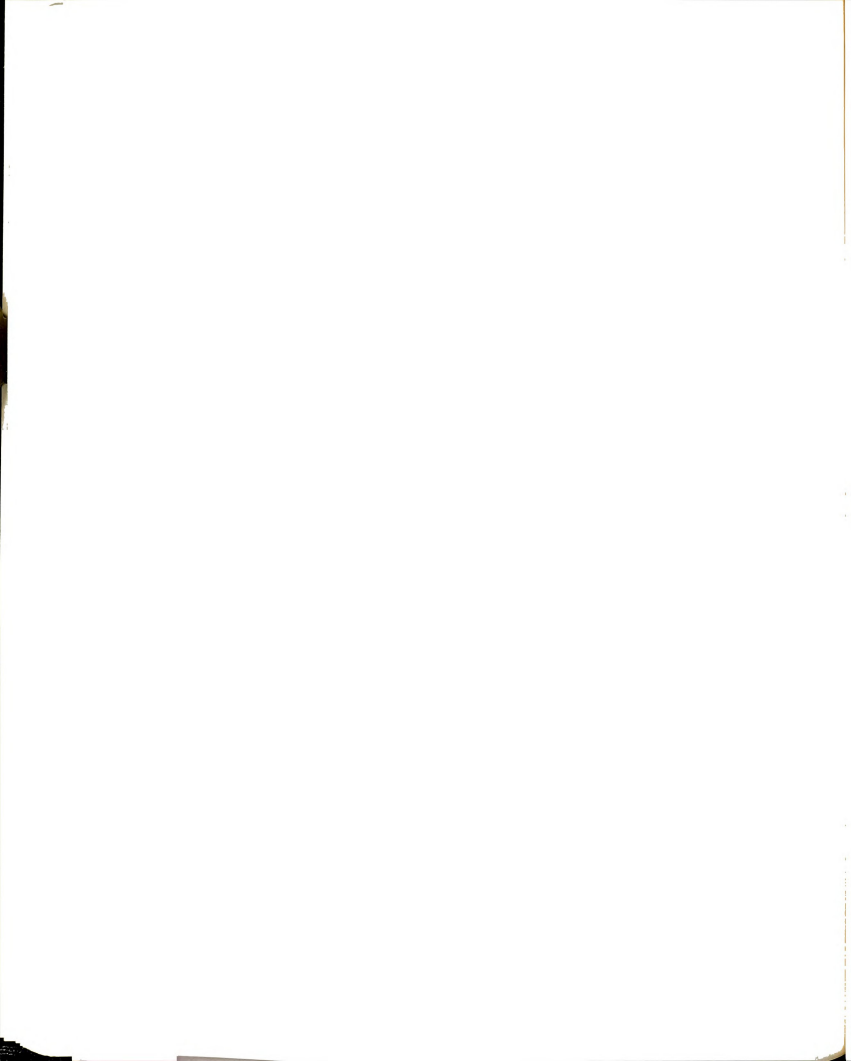
CHAPTER IV

RESULTS

The main goal of this study was to investigate the relationship among prior knowledge, overall language proficiency, and written discourse of nonnative speakers of the English language. This study also investigated the effects of both students' background information (age, gender, etc.) and the amount of reading they do on their writing.

This study attempted to address the following questions:

1. Is there any difference among the participants' writing related to their personal characteristics and the amount of reading they do?

2. What is the relationship between prior knowledge about a specific topics and the nonnative speakers' written discourse?

3. What is the relationship between the overall language proficiency and written discourse of nonnative speakers?

4. What is the additive effect of both prior knowledge and overall language proficiency on nonnative speakers' written discourse?

These are important issues in teaching written discourse to nonnative speakers and very crucial to the field of writing. A prior knowledge test, the raters' evaluation of the writing measures, the participants' writing on the topic eclipses, and a questionnaire were the means utilized to elicit information to answer these questions.

Hypotheses

In this study it was hypothesized that:

Hypothesis 1: There is no relationship between the nonnative speakers' prior knowledge about a specific topic and their scores in (a) a writing test, (b) content, (c) text sophistication, (d) global coherence, (e) linguistic complexity, (f) revision strategies, and (g) involvement.

Hypothesis 2: There is no relationship between the nonnative speakers' overall language proficiency and (a) writing proficiency scores, (b) content, (c) text sophistication, (d) global coherence, (e) linguistic complexity, (f) revision strategies, and (g) involvement.

To test these hypotheses, the advanced students attending the English Language Center in Spring Term of 1988 were asked to participate in the study. As a result of their participation, data related to prior knowledge, overall language proficiency, and written discourse measures were collected.

prior

partici

used t

knowle

partic

Tukey

prior

the s

chapt

Three independent raters were hired to score the prior knowledge and the written discourse of the participants. Correlation and regression techniques were used to quantify the relationship between both prior knowledge and overall language proficiency and the participants' written discourse and MANOVA, ANOVA, and Tukey test were used to measure the differences in the prior knowledge and the written discourse measures among the subgroups as follows:

The findings of this study are presented in this chapter as follows:

I. The descriptions of the participants and their writing performance. Samples of prior knowledge tests and writing are provided in Appendix I.

    1. Characteristics of the participants

    2. Characteristics of the sample performance

       a. The sample's prior knowledge task

       b. The characteristics of the sample's essays

II. The results:

    3. The relationship of demographic information and amount of reading with writing

    4. Writing proficiency scores

par

age

ou

ma

of

of

10

be

(6

pa

(

5. Content

    a. Number of words

    b. Number of ideas

6. Text sophistication

7. Global coherence

8. Linguistic complexity

    a. T-unit length

    b. Subordination

9. Revision strategies

10. Involvement

Characteristics of the Participants

Part of the study was designed to elicit the participants' background information, such as gender, age, level of education, native language, and ELC scores.

As indicated in Table 1, the data disclose that out of 49 participants, the majority 29 (59.2%) were male, and 20 (40.8%) were female. The data show that out of the 49 participants, 5 (10.2%) were less than 20 years of age, 18 (36.7%) were between 20 and 24 years of a age, 10 (20.4%) were 25-29 years of age, 8 (16.3%) were between 30-34, 5 (10.2%) were between 35-39, and only 3 (6.1%) were 40 years of age or above.

The level of education data show that 12 (24.5%) participants were holding diplomas from high school , 23 (46.9%) were holding degrees from college, 13 (26.5%)

Table 1. Gender, Age, Level of Education, and Native
          Language

Variable	F	Percent
Gender		
Male	29	59.2
Female	20	40.8
Age		
Below 20 years	5	10.2
20-24	18	36.7
25-29	10	20.4
30-34	8	16.3
35-39	5	10.2
40 and above	3	6.1
Level of Education		
High School	12	24.5
College	23	46.9
Masters Degree	13	26.5
Other	1	2.5
Native Language		
Arabic	6	12.2
Chinese	10	20.4
Korean	1	2.0
Spanish	3	6.1
Japanese	23	46.9
Indonesian	4	8.2
Turkish	2	4.0
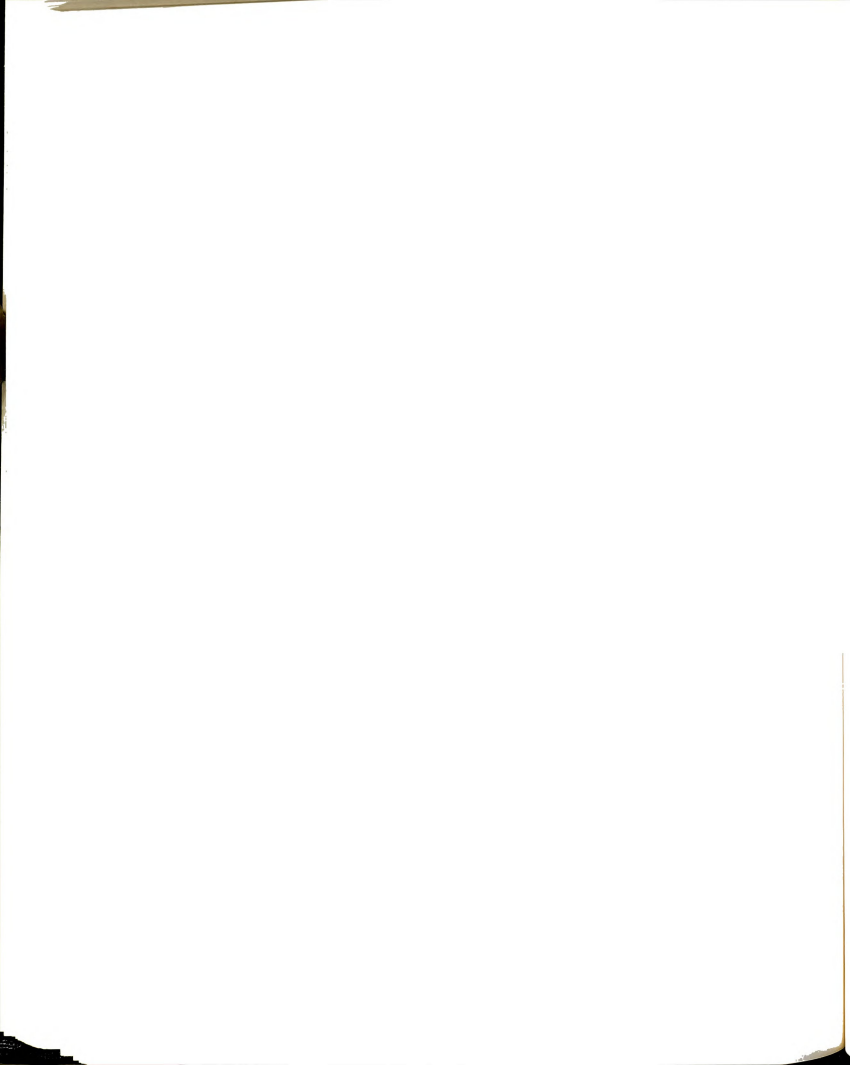
participants were holding master's degrees, and one
participant did not indicate the degree he was holding.

Concerning the participants' cultural background,
6 (12.2%) were Arabic-speaking students, 10 (20.4%) were
Chinese, 1 (2.0%) was Korean, 3 (6.1) were Spanish, 23
(46.9%) Japanese, 4 (8.2%) were Indonesian, and 2 (4.0%)
Turkish.

Table 2 illustrates the participants' ELC scores.
The scores reflect the average of grammar, reading,
writing and vocabulary of the official test of the ELC.
As it is summarized in Table 2, 7 (14.3%) of the
participants had scores between 65-70, 8 (16.3% had
scores between 71-75, 19 (38.8) had scores between 76-80,
10 (20.4%) had scores between 81-85, while 5 (10.2%) had
scores between 86-89.

Table 2. ELC Scores of Participants

ELC Scores	F	Percent
65-70	7	14.3
71-75	8	16.3
76-80	19	38.8
81-85	10	20.4
86-89	5	10.2
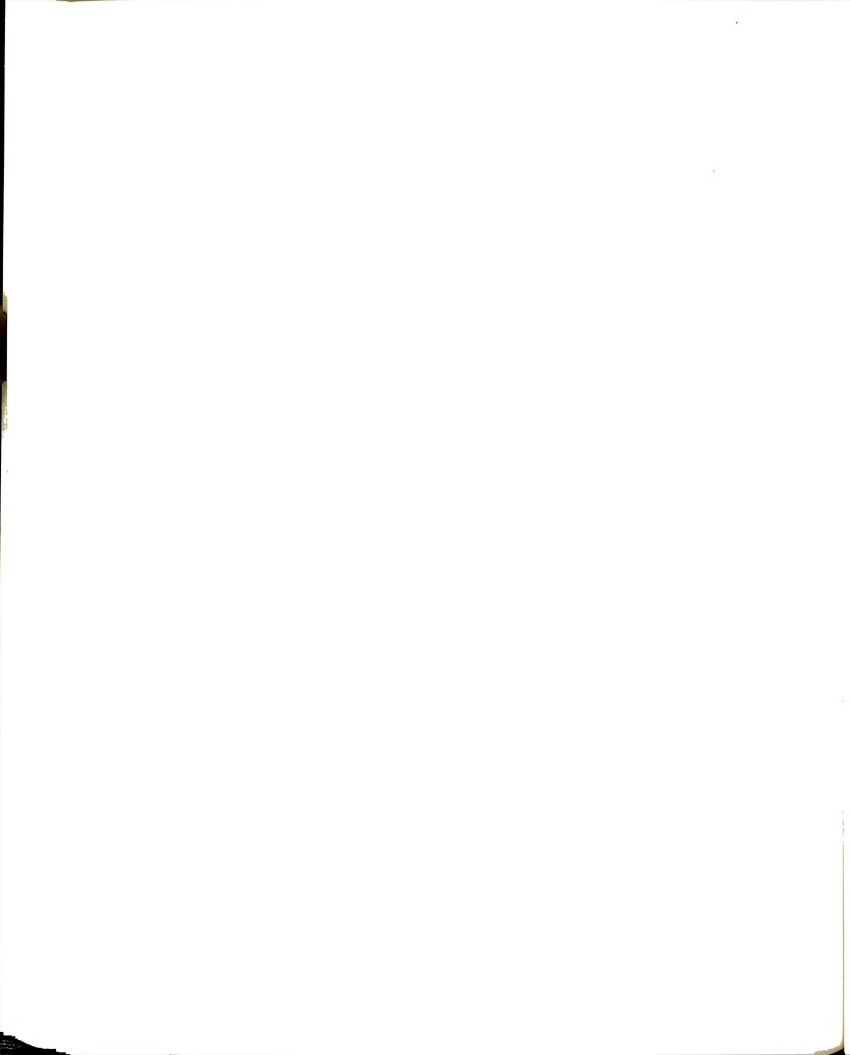
Characteristics of the Sample Performance

The Sample's Prior Knowledge Task

This task was aimed at measuring the participants' prior knowledge. As it was indicated in the previous chapter, these raters were hired to score the prompts representing each topic. As a result of this procedure, scores of fluency, organization, and combination, the three measures of the prior knowledge were obtained. The results showed first that the interrater reliability in rating the fluency, organization, and combination are .71, .79, and .81, respectively. The scores of the three raters were averaged, and the results shown in Table 3 indicate that for fluency, the minimum score of the sample was 1.00 and the maximum score was 3.0 with a mean of 1.95 and a standard deviation of .61. For organization, the minimum score is 6.00, the maximum score is 14.00 with a mean of 10.31 and standard deviation of 2.06. For combined knowledge, the minimum score is 2.00, the maximum score is 14.00 with a mean of 9.04 and standard deviation of 3.00.

The Characteristics of the Sample's Essays

To provide background information about the participants' writing ability, some characteristics of

Table 3. Characteristics of the Sample's Prior Knowledge
         Task

Prior Knowledge	Minimum	Maximum	Mean	S.D.
Fluency	1.00	3.00	1.95	.61
Organization	6.00	14.00	10.31	2.06
Combination	2.00	14.00	9.04	3.00

their essays are explained. Among those characteristics
are the number of words, the number of T-units, the
number of clauses, the number of topics, revision
strategies (internal, external, and total), the number of
words per T-unit, the ratio of all clauses to main
clauses, coherence scores, and language proficiency
scores.

        As indicated in Table 4, the data reveal that a
the minimum number of words in the essays is 82 words,
while the maximum number is 445 words with a mean of
265.55 and a standard deviation of 93.68. The minimum
number of total T-units is 7, while the maximum number is
43 with a mean of 25.02 and a standard deviation of 8.46.
The essays have a minimum number of 7 for the central T-
units, maximum number of 42, with a mean of 24.69 and a
standard deviation of 8.34. But for the peripheral T-
units, the essays have the minimum number of 1 and the
maximum number of 5 with a mean of 1.10 and a standard
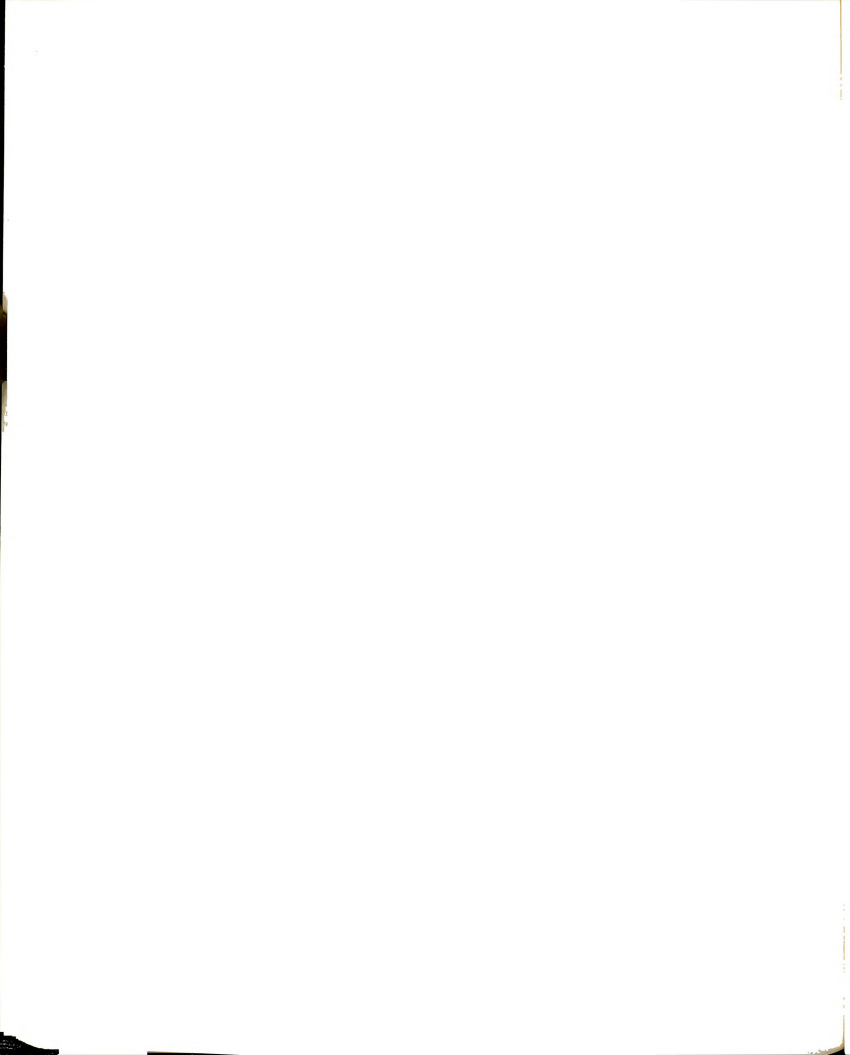
Table 4. Characteristics of the Sample's Essays

Variables	Minimum	Maximum	Mean	S.D.
No. of Words	82	445	265.55	93.68
Total of T-units	7	43	25.02	8.46
No. of Central T-units	7	42	24.69	8.34
No. of Peripheral T-units	1	5	1.10	.59
No. of Clauses	10	59	33.20	11.02
No. of Main Clauses	5	36	21.06	7.26
No. of Topics per Essay	1	7	4.00	1.40
No. of Internal Revision	0	9	2.10	2.23
No. of External Revision	0	72	14.61	13.39
No. of Total Revision	0	76	16.71	14.13
Linguistic Complexity	7	15.45	10.68	1.84
Subordination	1.20	2.22	1.61	.24
Global Coherence	2	4	3.40	.54
Writing Proficiency Scores	66.33	83	75.32	3.72
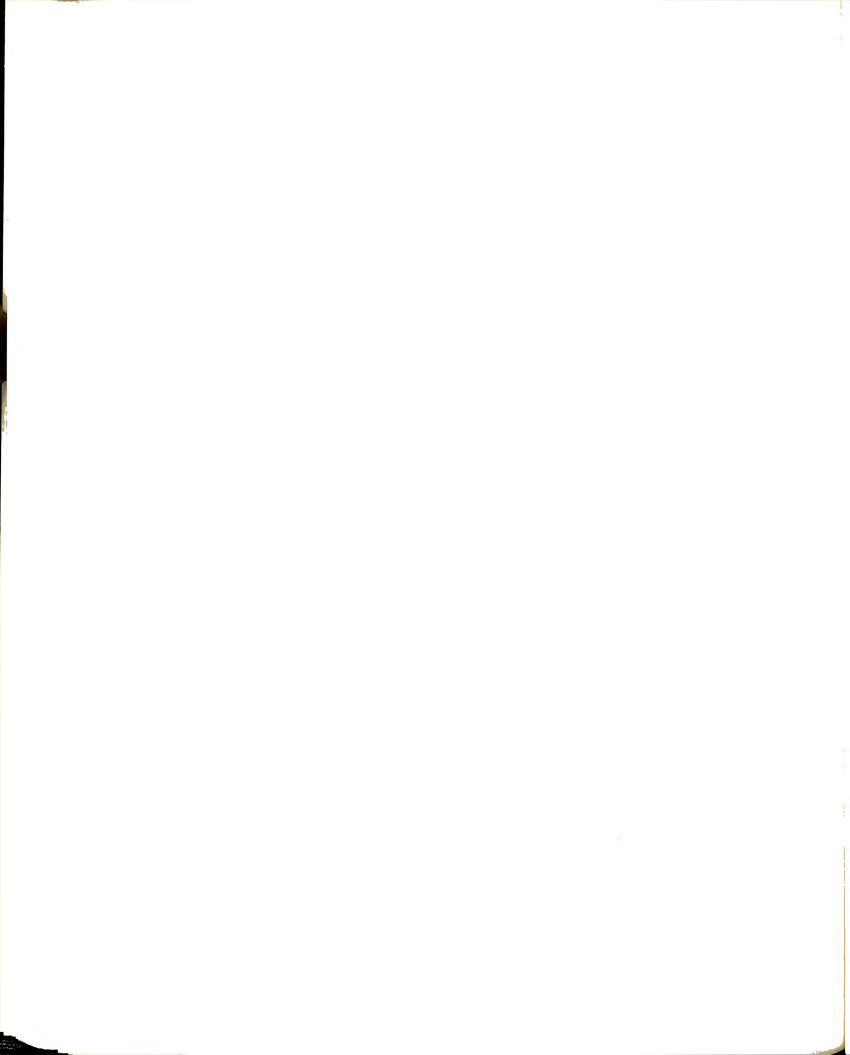
deviation of .59. Concerning the number of all clauses, the essays have a minimum number of 10 and a maximum number of 59, with a mean of 33.20 and standard deviation of 11.02. For main clauses, the minimum number of main clauses is 5, and the maximum number is 36, with a mean of 21.06 and standard deviation of 7.26. The minimum number of topics in each essay is 1, and the maximum number is 7, with a mean of 4.00 and standard deviation of 1.40.

The revision variable is divided into three components: internal revision, external revision, and total revision. The data show that the minimum number of internal revision is 0 (zero), and the maximum number is 9, with a mean of 2.10 and standard deviation of 2.23. In external revision, the minimum number is also 0 (zero), while the maximum number of total revision is 76, with a mean of 16.71 and standard deviation of 14.13.

The linguistic complexity computation shows that the minimum number of words per T-unit is 7, and the maximum number per T-unit is 15.45, with a mean of 10.68 and standard deviation of 1.84. In subordination, the minimum ratio of all clauses to main clauses is 1.20, and the maximum number is 2.22, with a mean of 1.61 and a standard deviation of .24. Coherence was rated separately, and the minimum score of coherence is 2,
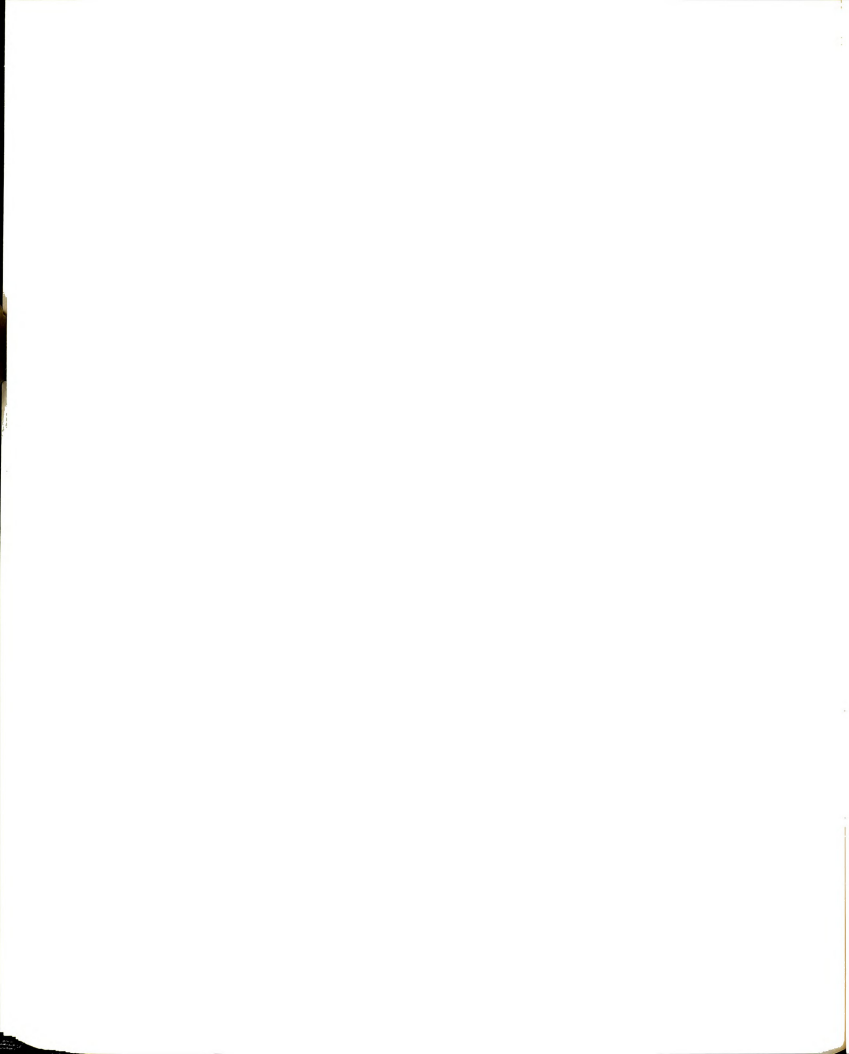
while the maximum coherence score is 4 with the mean of 3.40 and standard deviation of .54.

The sample's essays were rated for the writing proficiency scores. The data show that the minimum score for this variable is 66.33, and the maximum score is 83 with a mean of 75.32 and a standard deviation of 3.72.

Relationships of Demographic Information and Amount of Reading with Writing

Schema theory generally does not emphasize the rules of age, level of education, gender, and amount of reading on reading comprehension, nor have the studies applying this theory to writing also included these variables. It, therefore, seemed important to have these variables contained in our model. The question addressed by this inclusion is: What is the relationship among the participants' demographic information, amount of reading, and writing discourse measures?

Concerning the relationship between the participants' demographic information and written discourse measures, Table 5 shows that there was a significant positive relationship between age and number of words (.279, $p < .03$), number of ideas (.309, $p < .02$), and involvement (.331, $p < .01$). This means that the greater the age, the longer the participants' texts, and the more the participants were involved with their texts.
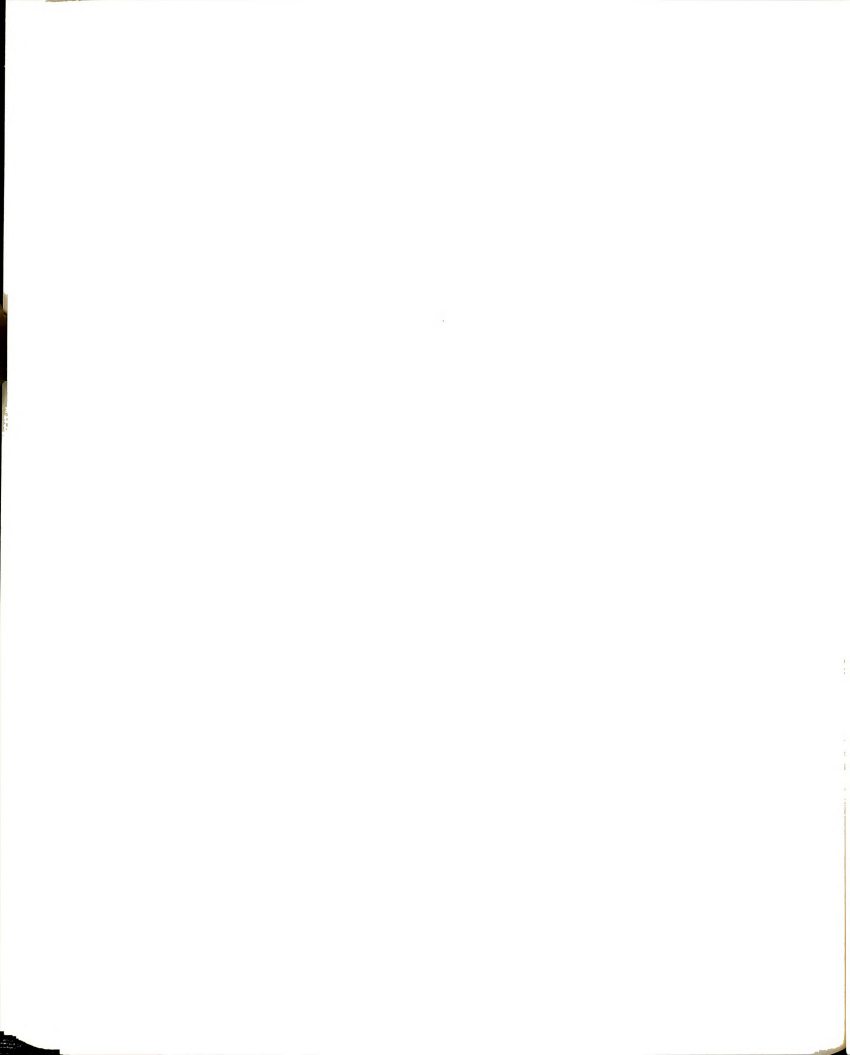
Table 5. The Relationship of Age, Level of Education,
and Amount of Reading with Written Discourse
Measures

Writing Measure	Age	Level of Education	Gender	Amount of Reading
Linguistic Complexity				
T-unit Length	.077	.014	.189	.005
Subordination	−.019	−.181	.065	.193
Writing Proficiency Scores	.068	−.052	−.047	.027
Revision Strategies	−.131	−.042	.046	.341**
Content				
No. of Words	.279*	−.042	.046	.341**
No. of Ideas	.309*	.072	−.142	−.010
Global Coherence	.088	−.010	−.156	−.012
Text Sophistication	.137	−.049	−.128	−.060
Involvement	.331**	.241*	−.240	.341**

*Significant at p<.05.

**Significant at p<.01.

The table also shows that there was a positive significant relationship between the level of education and involvement (.241, p<.05). That is, the higher the participants' educational degrees, the more involved they were with their texts.

Concerning the relationship between the amount of reading and written discourse measures, Table 5 shows that there was a significant positive relationship between the amount of reading and revision strategies (.341, p<.05) and involvement (.341, p<.008).

The multiple regression reveals that together age, level of education, gender, and amount of reading do not significantly account for the variance in any of the written discourse measures.

Comparisons by Native Language

Is there any difference among the participants' writing related to their native language?

MANOVA and ANOVA were used to determine if a difference exists between the population means of writing variables among the subgroups (Arabic, Chinese, Japanese, Spanish, and Indonesian). The writing variables are T-unit length, subordination, global coherence, text sophistication, writing proficiency scores, involvement, number of words, and number of ideas. As the ANOVA results showed, as indicated in Table 6, only the mean of

Table 6.   MANOVA and ANOVA Results for the Difference
            Between the Population Means Writing Measures
            by Native Language

Variables	ANOVA-F	ANOVA-P	MANOVA-P
Writing Variables			.02*
T-unit Length	2.212	.08	
Subordination	4.610	.004**	
Writing Proficiency Scores	1.03	.39	
Number of Words	.625	.64	
Number of Ideas	.909	.46	
Global Coherence	1.428	.24	
Text Sophistication	.806	.52	
Involvement	2.448	.06	

 *Significant at < .05.

**Significant at < .01.

subordination was found to be significantly different at $\leq$ = .01 according to group native language. The MANOVA P-value shows that the native language has a significant effect on writing because the overall difference among the means of all variables according to group native language is significant.

Analysis of variance p-values and the means of the variables which were found to be significantly different are shown in Table 7. Tukey's Test indicates that Spanish subjects have a higher organization and combination means than those of the Chinese subjects. The results also show that the Arabic and the Spanish subjects had higher subordination than the Chinese and the Japanese. ANOVA P-values and the means of the variables that were found not significant are shown in Table 8.

Writing Proficiency Scores

Writing Proficiency Scores and Prior Knowledge

Hypothesis 1.A: There is no relationship between the nonnative speakers' prior knowledge and writing proficiency scores of their essays.

Table 9 shows that there was a positive significant relationship between overall prior knowledge and writing proficiency scores (.485, p<.001) for all the groups. In addition, there was a positive significant relationship shown between writing proficiency scores and
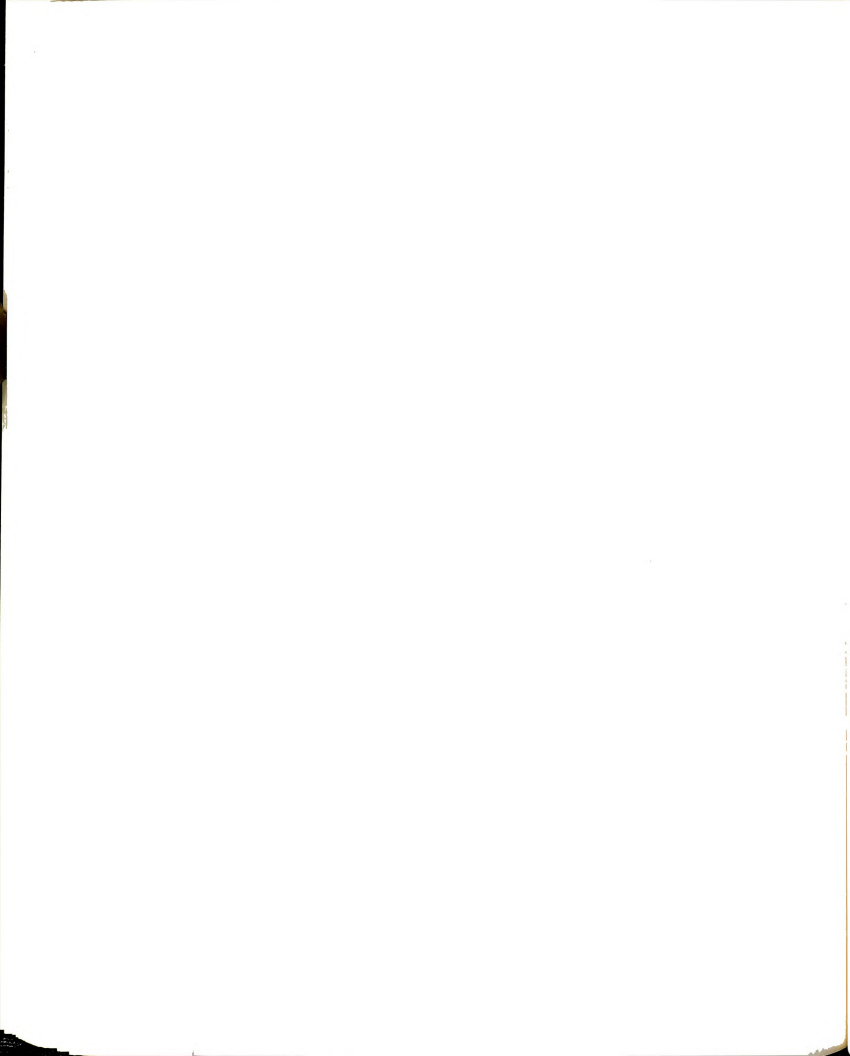
Table 7. Means of Organization, Combination, and
          Subordination by Native Language.

Group	N	Organization	Combination	Subordination
Arabic	6	11.83	11.11	1.85
Chinese	10	9.70	8.30	1.47
Japanese	23	9.89	8.52	1.56
Spanish	3	12.66	11.88	1.85
Indonesia	4	11.58	11.25	1.66
ANOVA P VALUE		.02*	.04*	.004*

*Significant at p<.05.

Table 8. Means of Writing Proficiency Scores, Number of Words, Number of Ideas, Text Sophistication, Global Coherence, T-Unit Length, Revision Strategies, and Involvement of Writing Components by Native Language.

Group	Arabic	Chinese	Japanese	Spanish	Indonesian	ANOVA Values
N	6	10	23	3	4	
Language Proficiency	73.05	76.93	75.37	75.88	75.83	.39
Number of Words	282	293	248	268	294	.64
Number of Ideas	2.16	2.60	2.26	2.66	2.75	.46
Text Sophistication	12.83	12.40	11.73	12.66	12.75	.52
Global Coherence	3.33	3.76	3.30	3.22	3.50	.25
T-unit Length	10.04	11.12	10.41	13.36	10.45	.08
Revision Strategies	17.7	14.8	17.8	10.6	27.5	.06
Involvement	14.50	13.00	10.47	12.33	15.25	.06
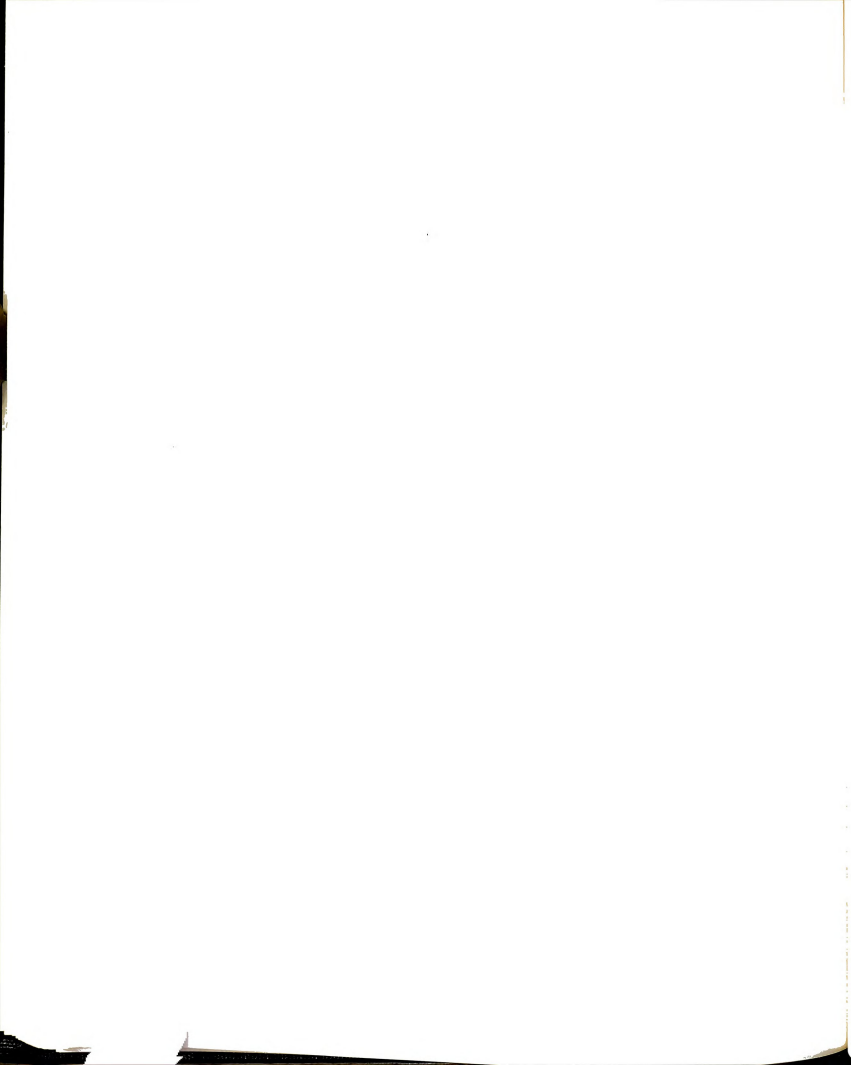
Table 9. Correlation Between Prior Knowledge and Writing Proficiency Scores

Groups	Overall Knowledge/ Writing Proficiency Scores	Fluency/ Writing Proficiency Scores	Organization/ Writing Proficiency Scores	Combination/ Writing Proficiency Scores
All Groups	.485***	.357**	.457***	.494***
Arabia	.767*	.748*	.80*	.732*
Chinese	.347	.612*	.276	.319
Japanese	.755***	.363*	.730***	.772***
Miscellaneous	.513	.696**	.460	.467

*p   .05
**p   .01
***p   .001

fluency (.357, p<.01), organization (.457, p<.001), and combination (.494, p<.001).

For the Arabic subgroup, there was a positive significant relationship between overall prior knowledge and writing proficiency scores (.767, p<.05). There was also a positive significant relationship between writing proficiency scores and fluency (.748, p<.05), organization (.80, p<.05), and combination (.732, p<.05).

For the Chinese subgroup, there was a positive significant relationship only between fluency and writing proficiency scores (.612, p<.05).

For the Japanese subgroups, there was a positive significant relationship between overall prior knowledge and writing proficiency scores (.755, p<.001). There was also a positive significant relationship between writing proficiency scores and fluency (.363, p<.05), organization (.730, p<.001), and combination (.772, p<.001).

For the miscellaneous group, there was a positive significant relationship only between fluency and writing proficiency scores (.696, p<.01).

On the other hand, looking at the same table, we conclude that there was not any significant relationship between prior knowledge as a total and writing proficiency scores for Chinese and miscellaneous subgroups, between organization and writing proficiency

scores for Chinese and miscellaneous subgroup, or between combination and writing proficiency scores for Chinese and miscellaneous subgroups.

Writing Proficiency Scores
and Overall Language
Proficiency

Hypothesis 1.B: There is no significant relationship between overall language proficiency and writing proficiency scores.

Table 10 shows that there was a positive significant relationship between overall language proficiency and global language proficiency (.333, p<.01) for all the group.

Table 10. Correlation Between Overall Language Proficiency (OLP) and Writing Proficiency Scores

Groups	OLP/Writing Global Proficiency
All Groups	.333**
Arabic	.279
Chinese	.289
Japanese	.335*
Miscellaneous	.401

*p < .05
**p < .01
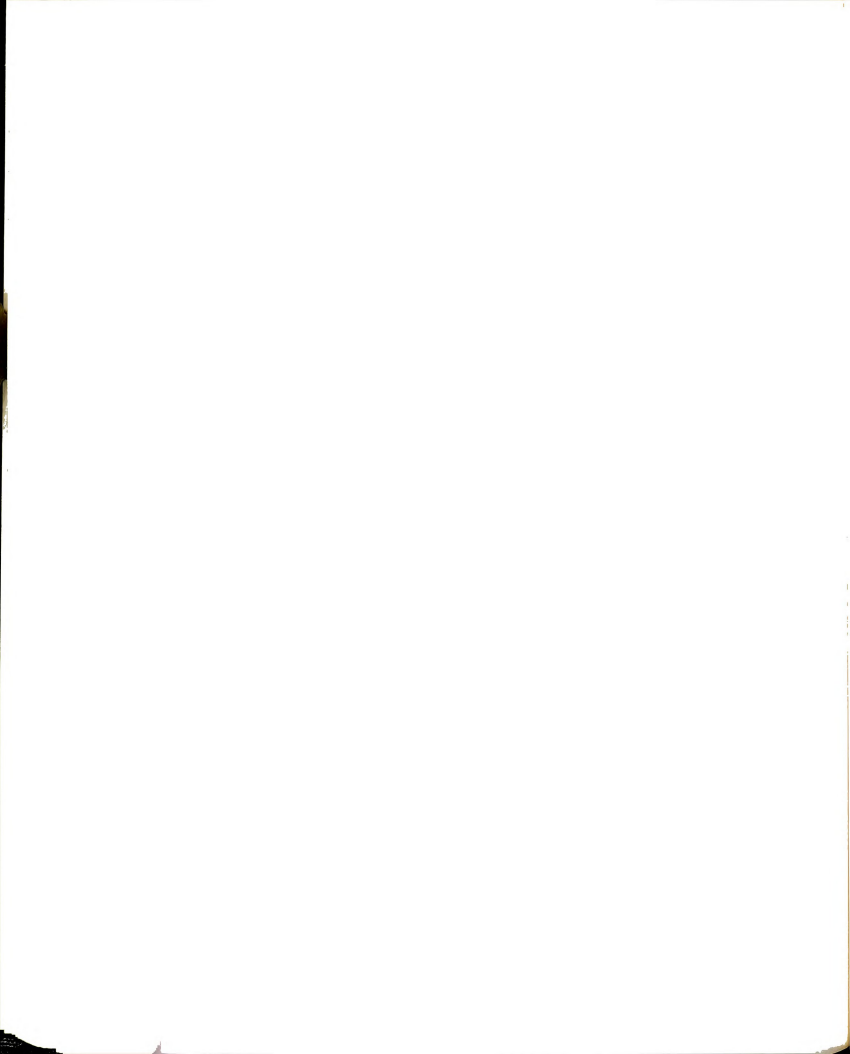
For the Japanese subgroup, there was also a positive significant relationship between overall language proficiency and writing proficiency scores (.335, p<.05).

On the other hand, looking at the same table, we find no relationship between overall language proficiency and writing proficiency scores for the Arabic, the Chinese, and the miscellaneous subgroups.

The Additive Effect

The question related to the additive effect is: What is the additive effect of prior knowledge and overall language proficiency on writing proficiency scores?

The results of using regression analysis indicated in Table 11 show that prior knowledge was a significant predictor for writing proficiency scores at the p<.01 level. The results also show that 29.2% of the total variance in writing proficiency scores was accounted for by both variables. Stepwise regression analysis show that 23.5% of the total variance in the writing proficiency scores was accounted for by the prior knowledge alone. The overall language proficiency, however, is a marginal predictor for the writing proficiency scores at the p<.0591) level. So, the results of the relationship between prior knowledge and
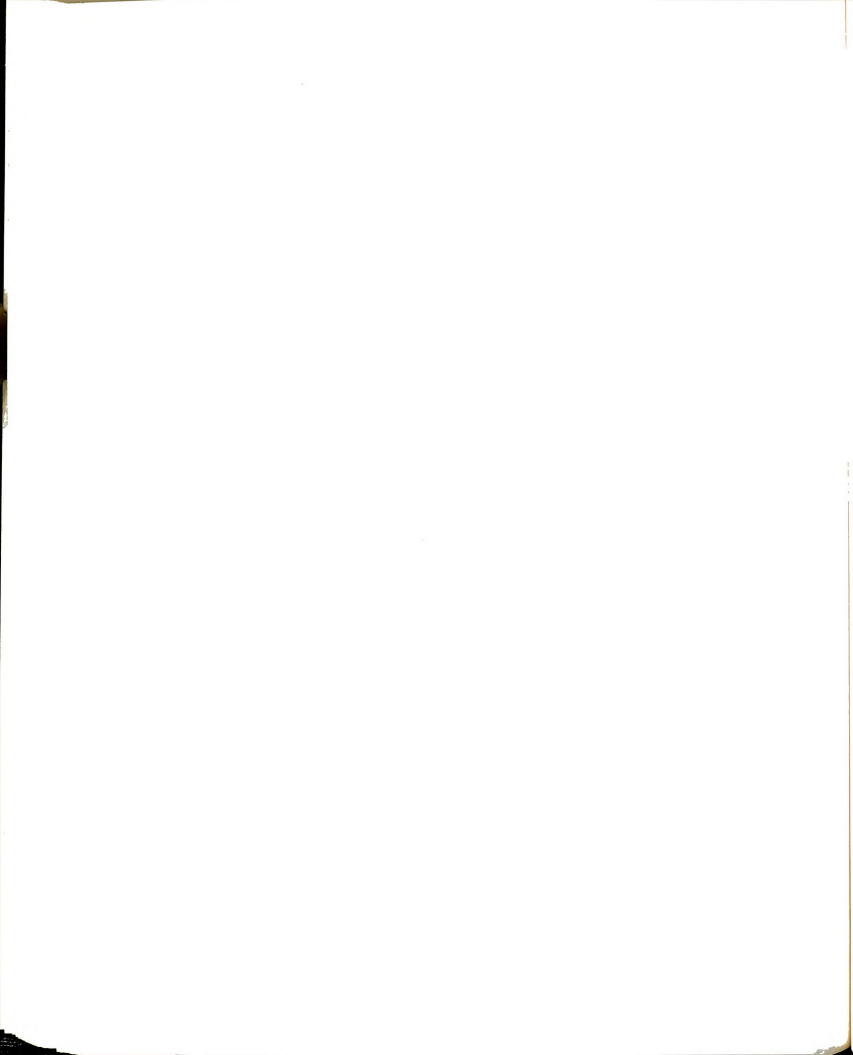
Table 11. Regression Results of Writing Proficiency
          Scores (n = 49)

Variables	Coefficient	Significance
Overall Knowledge	.2968	.0013*
Language Proficiency	.1579	.0591
Constant	56.7116	.0000**
Multiple R = .5408 R-SQR = .2925		

*p < .01; **p < .001

writing proficiency scores show that there was a
significant positive relationship between all prior
knowledge scores and writing proficiency scores for
almost all the group and all the subgroups.

The very few instances where there is lack of
significant relationship between prior knowledge and
writing proficiency scores do not keep us from concluding
that the relationship between prior knowledge and writing
proficiency scores is significant.

Concerning the results of the relationship
between overall language proficiency and writing
proficiency scores, we find that they were significantly
related for the whole group and for the Japanese subgroup
only.
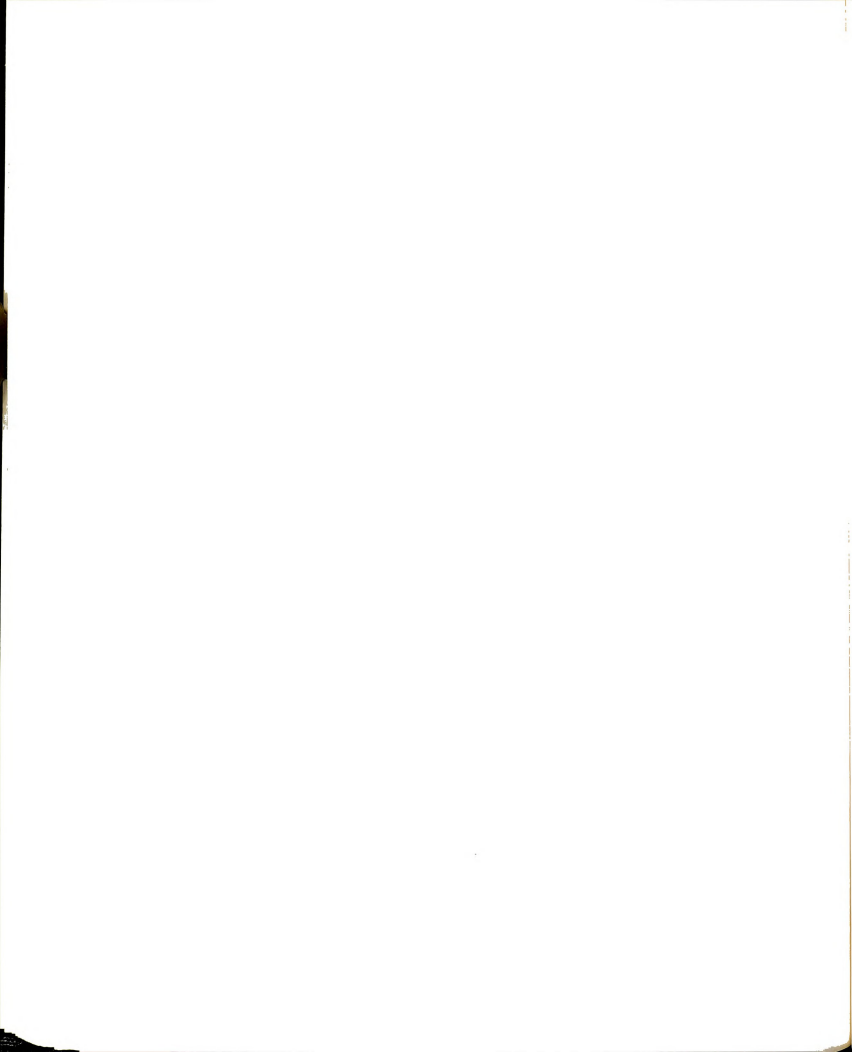
However, prior knowledge accounts for more variance on the writing proficiency scores than overall language proficiency.

Content: Number of Words and Number of Ideas

Content and Prior Knowledge

Hypothesis 1.B: There is no relationship between the nonnative speakers' prior knowledge and the content: number of words and number of ideas.

Number of Words

Table 12 shows that there was a positive significant relationship between overall prior knowledge and the number of words (.406, p<.01) for all the groups. There was also a positive significant relationship between the number of words and fluency (.410, p<.01), organization (387, p<.01), and combination (.387, p<.01) for all the groups.

For the Arabic group, there was a positive significant relationship between overall prior knowledge and the number of words (.694, p<.05). There was also a positive significant relationship between the number of words and organization (.720, p<.05), and combination (.676, p<.05) for the Arabic subgroup.

For the Chinese subgroup, there was a positive significant relationship between prior knowledge and the number of words (.719, p<.05). There was also a positive
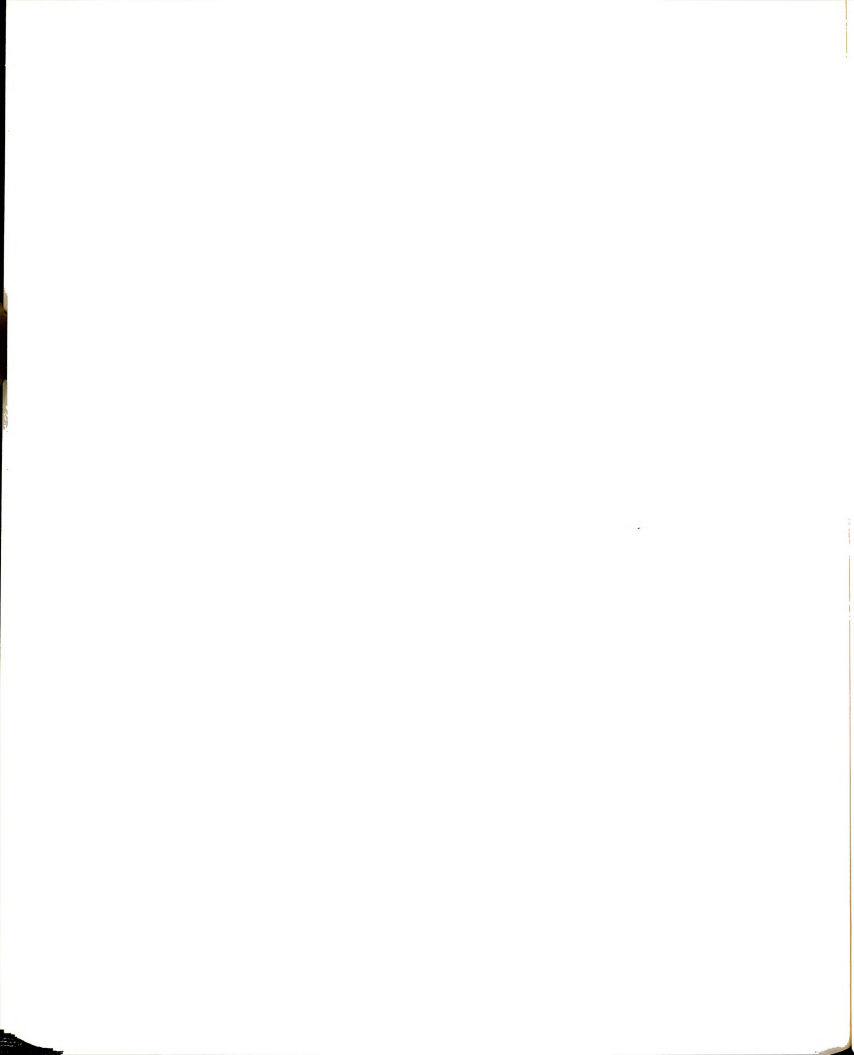
Table 12. Correlation Between Prior Knowledge and Content: Number of Words and Number of Ideas for all Groups and Each Group

Group	Overall Knowledge		Fluency		Organization		Combination	
	Words	Ideas	Words	Ideas	Words	Ideas	Words	Ideas
All Group	.406**	.542***	.410**	.410**	.387**	.507***	.387**	.553***
Arabic	.694*	.828*	.630	.759*	.720*	.850**	.676*	.812*
Chinese	.719*	.519*	.624*	.731**	.716**	.573*	.728**	.498*
Japanese	.427*	.522**	.416**	.223	.387*	.495**	.403*	.546**
Miscellaneous	.211	.807**	.247	.760**	.204	.763**	.192	.785**

*p < .05
**p < .01
***p < .001

significant relationship between the number of words and fluency (.624, p<.05), organization (.716, p<.05), and combination (.728, p<.01) for the Chinese subgroup.

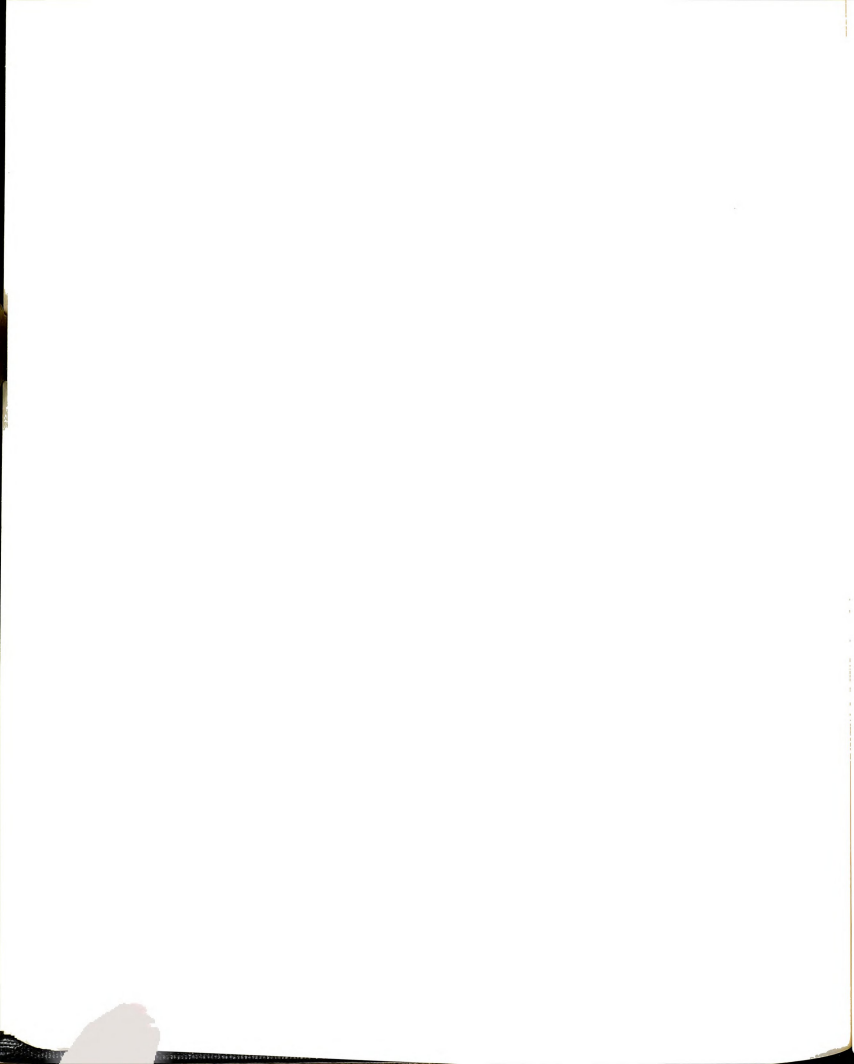For the Japanese subgroup, there was a significant positive relationship between prior knowledge and the number of words (.427, p<.05). There was also a significant positive relationship between the number of words and fluency (.416, p<.01), organization (.387, p<.05), and combination (.403, p<.05) for the Japanese subgroup.

On the other hand, looking at Table 12 we find that there was not any significant relationship between fluency and the number of words for the Arabic subgroup. We also found no significant relationship between prior knowledge as total or as components and the number of words for the miscellaneous subgroup.

The Number of Ideas

Table 12 also shows that there was a significant positive relationship between overall prior knowledge and the number of ideas (.542, p<.001) for all the group. There was also a positive significant relationship between the number of ideas and fluency (.410, p<.01), organization (.507, p<.001), and combination (.553, p<.001) for all the group.
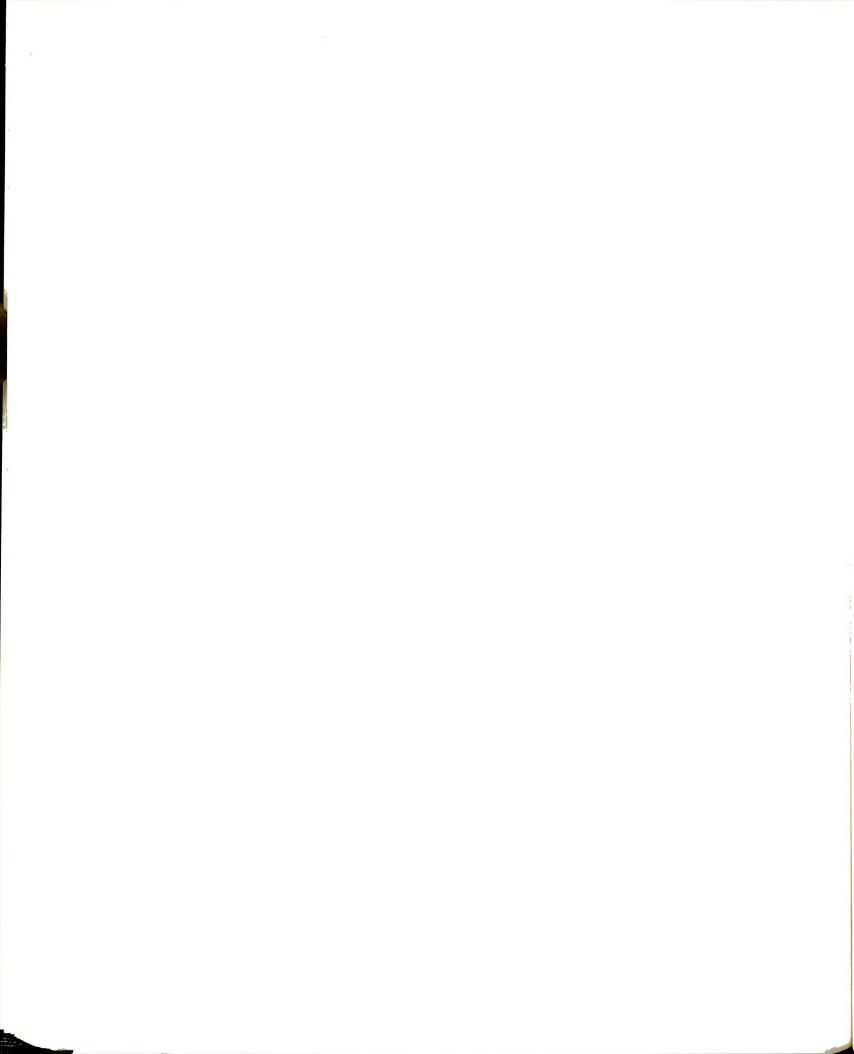
Table 13. Correlation   Between   Overall   Language
          Proficiency (OLP) and Content: Number of
   Words and Number of Ideas

Groups	OLP/Content	
	Number of Words	Number of Ideas
All Groups	.298*	.166
Arabic	.284	.629
Chinese	.776**	.439
Japanese	.348*	.177
Miscellaneous	.201	.250

 *p <.05

**p < .001

        For the Arabic subgroup, there was a significant
positive relationship between overall prior knowledge and
the number of ideas (.828, p<.05).   There was also a
positive significant relationship between the number of
ideas and fluency (.759, p<.05), organization (.850,
p<.01), and combination (.812, p<.05) for the Arabic
subgroup.

        For the Chinese subgroup, there was a positive
significant relationship between overall prior knowledge
and the number of ideas (.519, p<.05).   There was also a
significant relationship between the number of ideas and
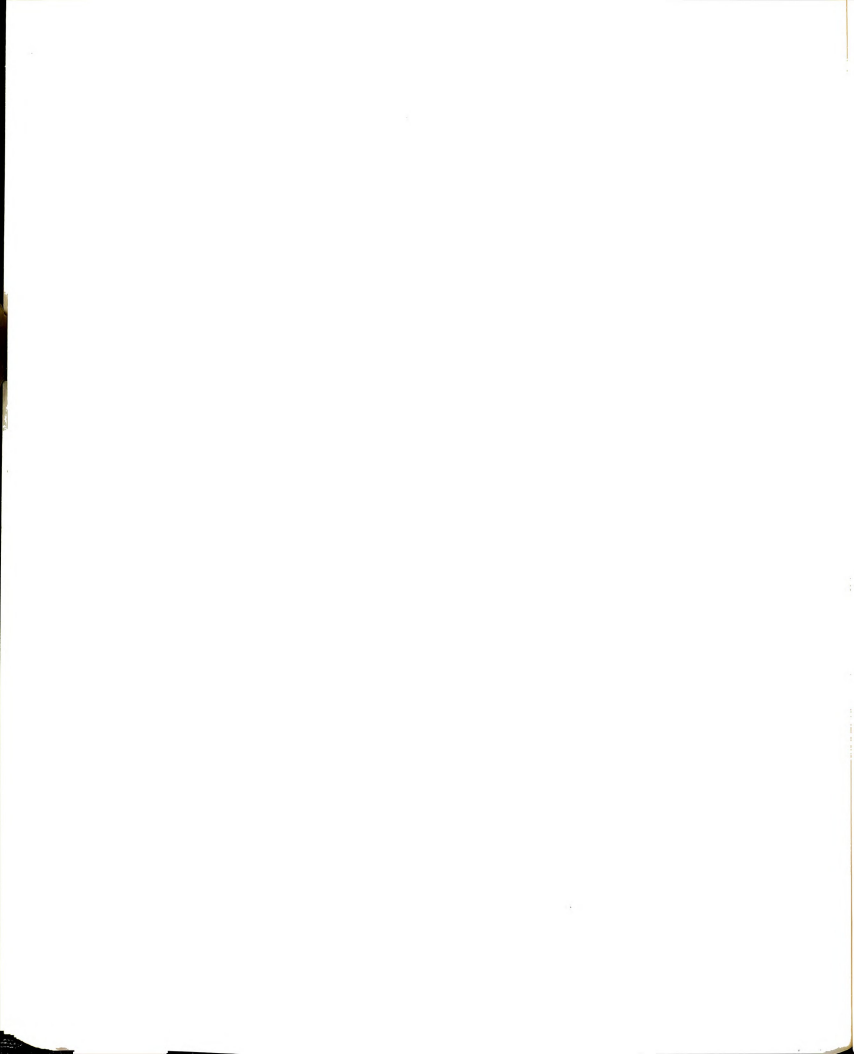
fluency (.731, p<.01), organization (.573, p<.05), and combination (.498, p<.05) for the Chinese subgroup.

For the Japanese subgroup, there was a positive significant relationship between overall prior knowledge and the number of ideas (.522, p<.01). There was also a positive significant relationship between the number of ideas and organization (.495, p<.01), and combination (.546, p<.01) for the Japanese subgroup.

For the miscellaneous subgroup, there was a positive significant relationship between overall prior knowledge and the number of ideas (.807, p.<01). There was also a positive significant relationship between the number of ideas and fluency (.760, p<.01), organization (.763, p<.01), and combination (.785, p<.01) for the miscellaneous subgroup.

On the other hand, looking at Table 12, we found that there was not a significant relationship between fluency and the number of ideas only in the Japanese subgroup.

Content and Overall Language Proficiency

Hypothesis 2-B: There is no relationship between overall language proficiency and content: number of words and number of ideas.

Number of Words

Table 13 shows that there was a positive significant relationship between overall language
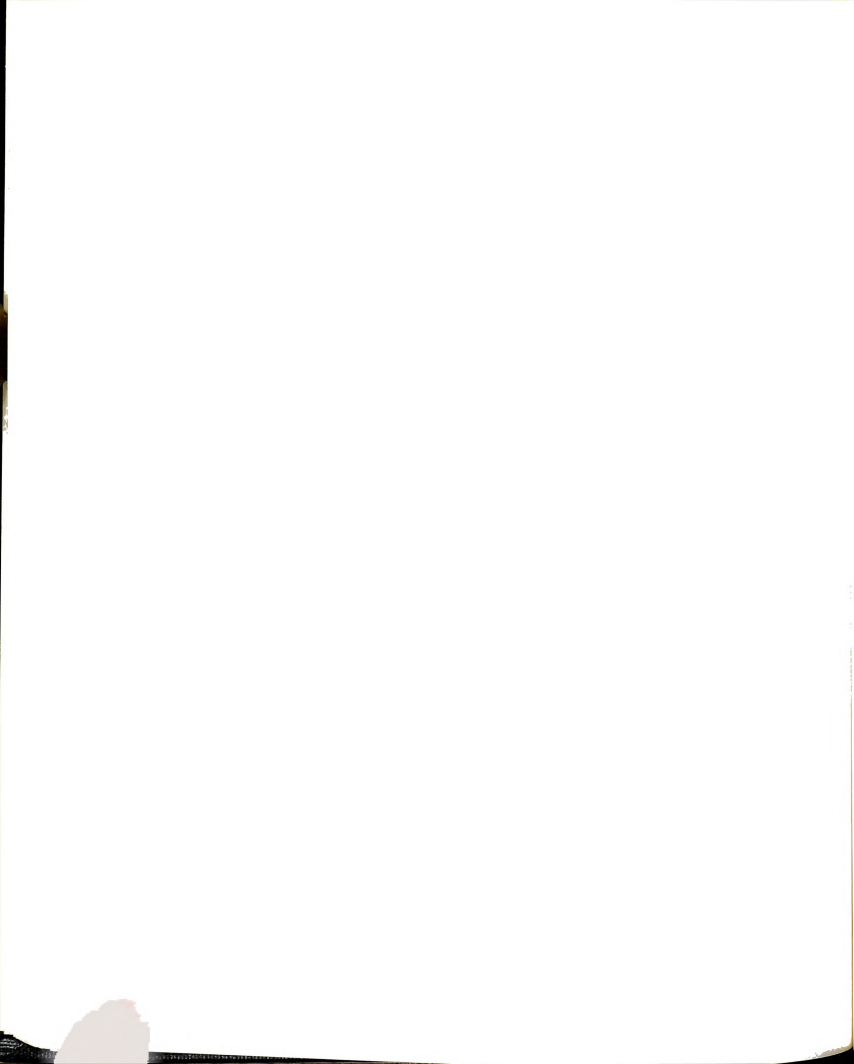
proficiency and number of words (.298, p<.05) for all the groups. There was also a positive significant relationship between overall language proficiency and number of words (.776, p<.01) for the Chinese subgroup. A positive significant relationship also existed between overall language proficiency and number of words (.348, p<.05) for the Japanese subgroup.

On the other hand, there was no significant relationship between overall language proficiency and the number of words for the Arabic subgroup, and the miscellaneous subgroup.

The Number of Ideas

Table 13 shows that there was no significant relationship between overall language proficiency and the number of ideas for all the group or for the subgroups.

The Additive Effect

The question related to the additive effect is: What is the additive effect of prior knowledge and overall language proficiency on content: number of words and number of ideas?

The results of regression indicated in Table 14 for the number of words show that overall knowledge is a significant predictor for the number of words at p<.01, while the overall language proficiency is not. Both variables account for 21.2% of the total variance in the
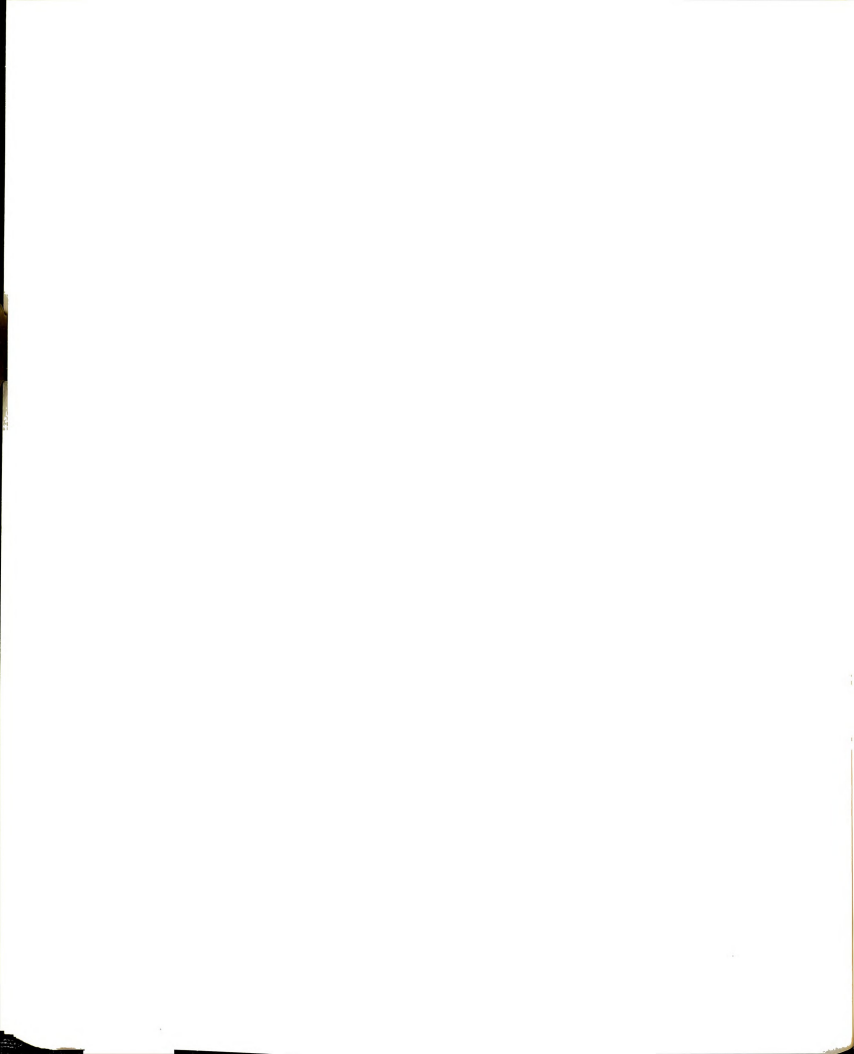
Table 14. Regression Results of the Content: Number of
          Words (n = 49)

Variables	Coefficient	Significance
Overall Knowledge	6.1842	.0098**
Language Proficiency	3.6465	.0993
Constant	-.0011	.3717
Multiple R = .4614 R-SQR = .2129		

**$p < .01$.

number of words. A stepwise regression analysis shows
that prior knowledge alone accounts for 16.4% of the
total variance in the number of words.

The results of regression indicated in Table 15
for the number of ideas show that the overall prior
knowledge as a significant predictor for the number of
ideas at $p < .001$. Both variables account for 29.7% of the
total variance in the number of ideas. A stepwise
regression analysis shows that the overall prior
knowledge variable alone accounts for 29.4% of the total
variance in the number of ideas. The overall language
proficiency was not a significant predictor for the
number of ideas.

So, the results of the relationship between prior
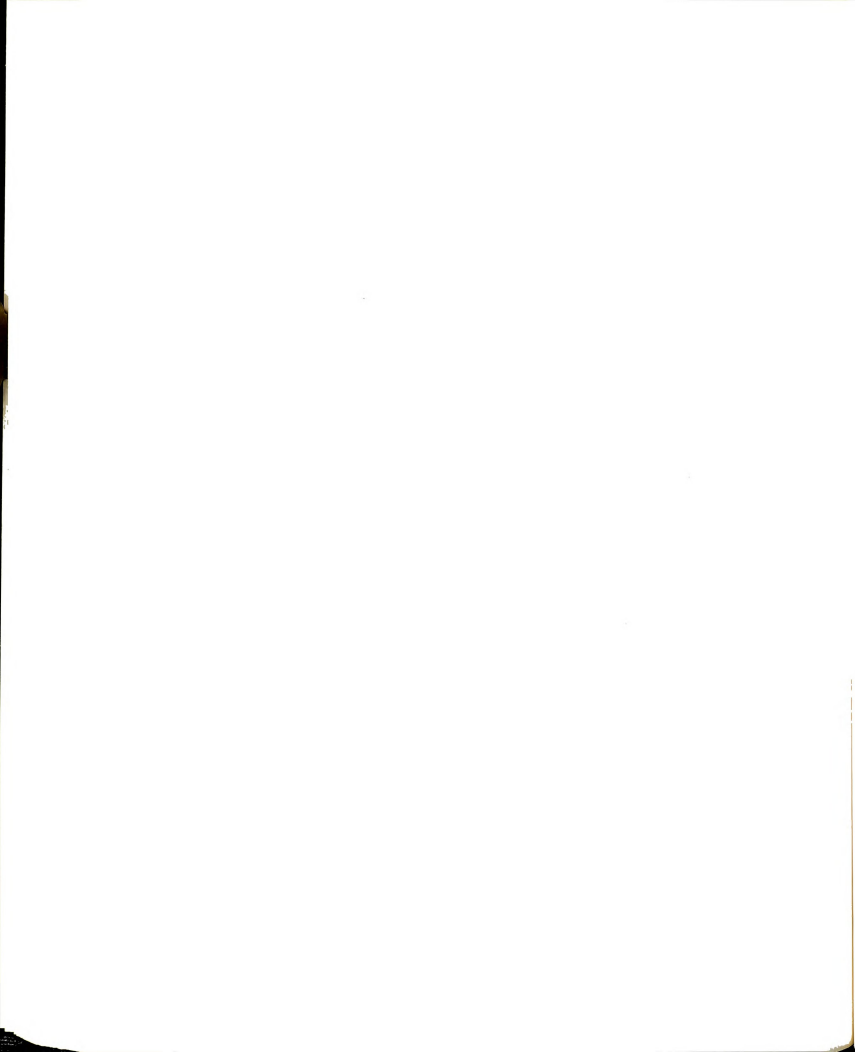knowledge and content indicate that prior knowledge had a

Table 15. Regression Results of the Content: Number of
          Ideas (n = 24)

Variables	Coefficient	Significance
Overall Knowledge	.0726	.0001***
Language Proficiency	.0075	.6473
Constant		

Multiple R = .5451
R-SQR   = .2971

***p < .01

strong positive relationship with content: number of
words and number of ideas. The overall prior knowledge
was also found to be a significant predictor for both
number of words and number of ideas.

On the other hand, the overall language
proficiency had no relationship with content. It was not
a significant predictor for content either.

Text Sophistication

Text sophistication and prior knowledge:

Hypothesis 1-C: There is no relationship between the
    nonnative speakers' prior knowledge and text
    sophistication.

Table 16 illustrates that there was a positive
significant relationship between overall knowledge and
text sophistication (.283, p<.05) for the whole groups.
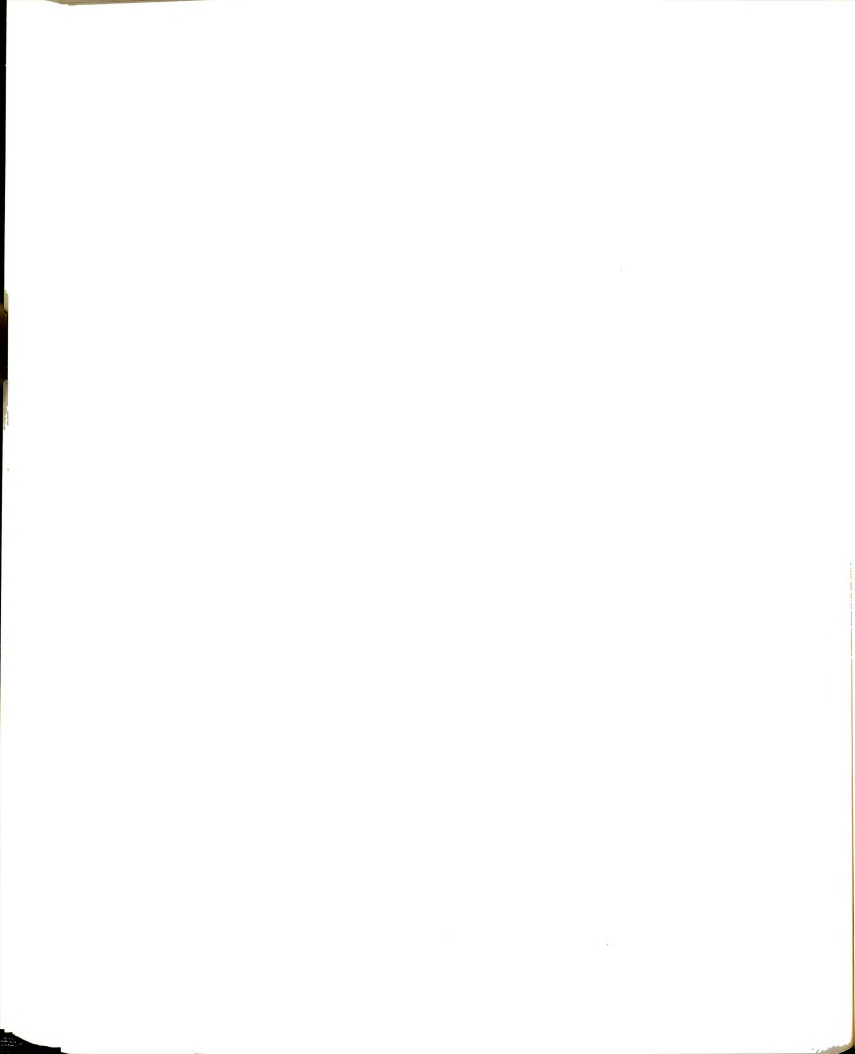There was also a positive significant relationship shown

Table 16. Correlation Between Prior Knowledge and Text Sophistication for All Groups and Each Group

Groups	Overall Knowledge/ Text Sophistication	Fluency/ Text Sophistication	Organization/ Text Sophistication	Combination/ Text Sophistication
All Groups	.283*	.228	.271*	.281*
Arabic	.634	.689*	.599	.639
Chinese	-.397	-.111	-.430	.412
Japanese	.266	.058	.269	.262
Miscellaneous	.661*	.729**	.617*	.626*

*p < .05
**p < .01
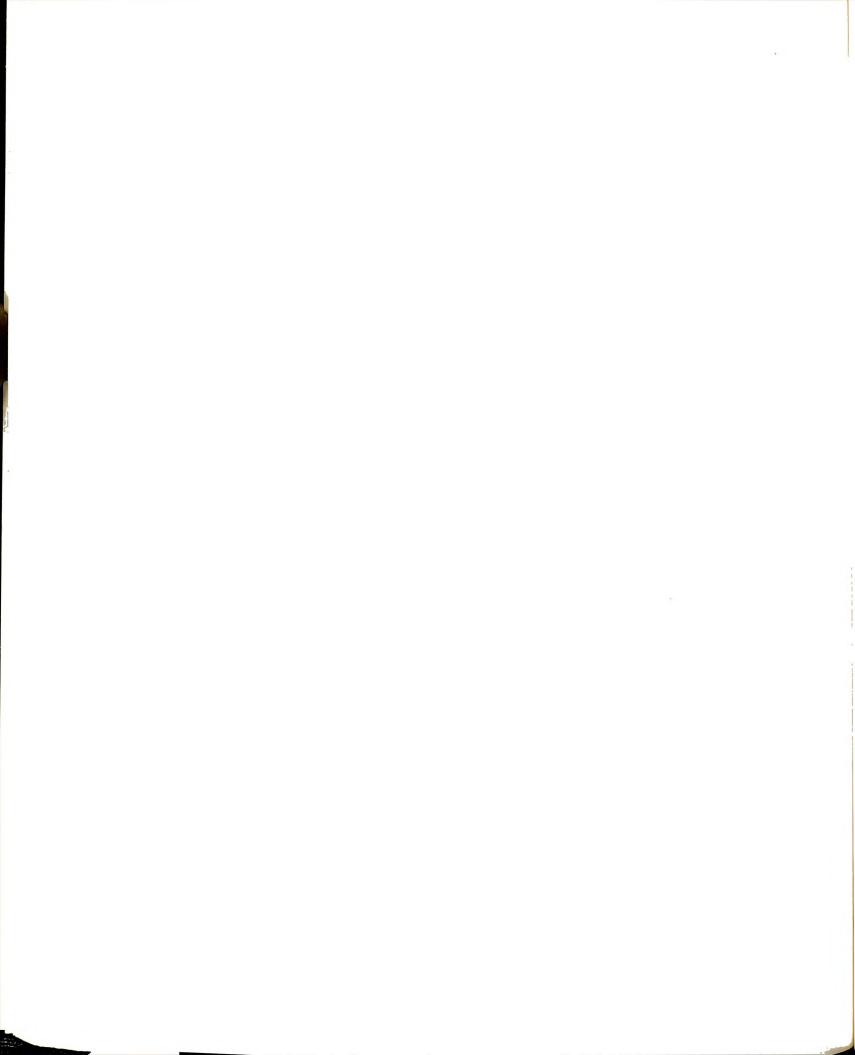
between text sophistication and organization (.271, p<.05) and combination (.281, p<.05) for all the groups.

For the Arabic subgroup there was a positive significant relationship between fluency and text sophistication (.689, p<.05).

For the miscellaneous subgroup, there was a positive significant relationship between overall prior knowledge and text sophistication (.661, p<.05). There was also a positive significant relationship between text sophistication and fluency (.729, p<.01), organization (.617, p<.05), and combination (.626, p<.05).

Looking at Table 16, we see that there was no significant relationship between fluency and text sophistication for all the groups. For the Arabic subgroup, there was no significant relationship between text sophistication and overall knowledge, organization, or combination. For the Chinese and the Japanese subgroups, there was no significant relationship between prior knowledge total or any components with text sophistication.
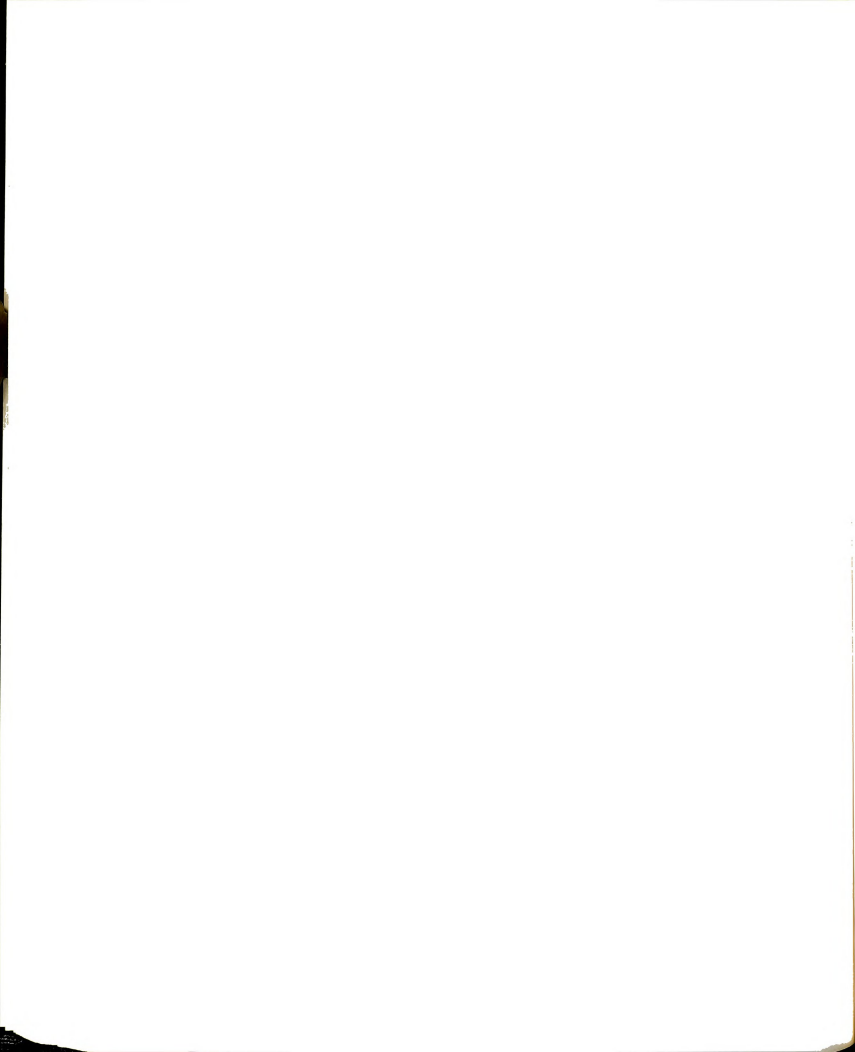
Text Sophistication and Overall
Language Proficiency

Hypothesis 2-C: There is no relationship between
overall language proficiency and text
sophistication of the nonnative speakers' written
discourse.

Table 17 shows that there was a positive
significant relationship between overall language
proficiency and text sophistication (.394, p<.05) for the
whole group.

Table 17. Correlation Between Overall Language
Proficiency and Text Sophistication

Groups	OLP/Text Sophistication
All Groups	.394*
Arabic	.863**
Chinese	-.633*
Japanese	.098
Miscellaneous	.137

*p < .05
**p < .01

For the Arabic subgroup, there was also a
positive significant relationship between overall
language proficiency and text sophistication (.863,
p<.01). However, for the Chinese subgroup, there was a
negative significant relationship between overall

language proficiency and text sophistication (-.633, p<.05).

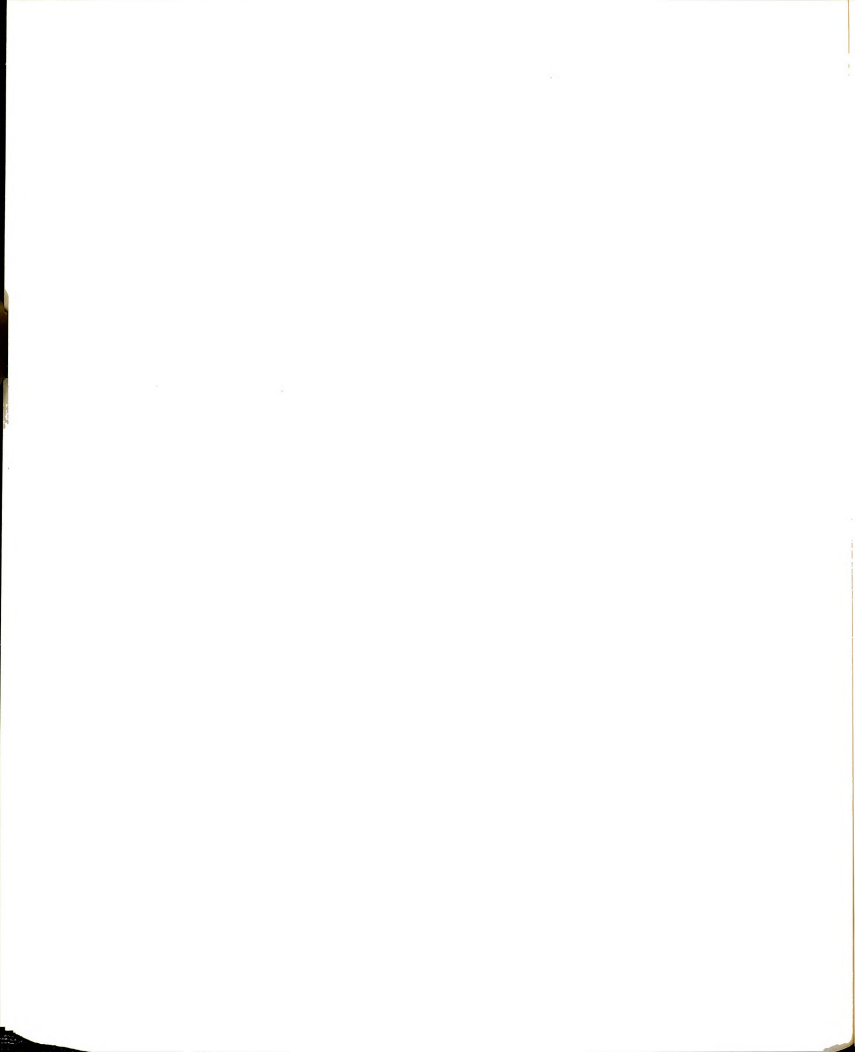On the other hand, for the Japanese and the miscellaneous subgroups, there was no significant relationship between overall language proficiency and text sophistication.

The Additive Effect

The question related to the additive effect is: what is the additive effect of prior knowledge and overall language proficiency on text sophistication?

The results of regression as indicated in Table 18 show that overall knowledge is marginally related to text sophistication at p<.0528. Looking at the same table, we notice that 8.05% of the total variance on the text sophistication was accounted for by overall knowledge. The overall language proficiency does not significantly contribute to the prediction of text sophistication.

Table 18. Regression Results of Text Sophistication

Variables	Coefficient	Significance
Overall Knowledge	.0445	.0528
Language Proficiency	.0420	.8979
Constant	3.2280	.0018**
Multiple R = .2838 R-SQR = .0805		

**p < .01.

        Also   there   was   a   positive   significant
relationship between overall language proficiency and
text sophistication for all the groups, and the Arabic
subgroup.

        For the Chinese subgroup, there was a negative
significant   relationship   between   overall   language
proficiency and text sophistication.

        The additive effect results show that overall
knowledge must be considered a marginal predictor of the
text sophistication.

Global Coherence

Global Coherence and
Prior Knowledge

    Hypothesis 1-D: There is no significant relationship
        between the nonnative speakers' prior knowledge
        and global coherence of their essays.

Table 19 shows that there as a positive significant relationship between overall knowledge and global coherence (.273, p<.05) for all the group. There was also a positive significant relationship between global coherence and fluency (.307, p<.05) and combination (.268, p<.05) for all the group.

This is also exactly the same for the Japanese subgroup. There was a positive significant relationship between overall knowledge and global coherence (.391, p<.05) for this subgroup. There was also a positive significant relationship between global coherence and fluency (.413, p<.05) and combination (.377, p<.05) for the Japanese subgroup.

On the other hand, looking at the same table, we find that there was no significant relationship between organization and global coherence in all the groups. For the Arabic, Chinese, or miscellaneous subgroups, there was no significant relationship between global coherence and overall knowledge, or its three components. For the Japanese subgroup, only organization did not have a significant correlation with global coherence.

Global Coherence and Overall Language Proficiency

Hypothesis 2-D: There is no significant relationship between overall language proficiency and global coherence in the nonnative speakers' written discourse.
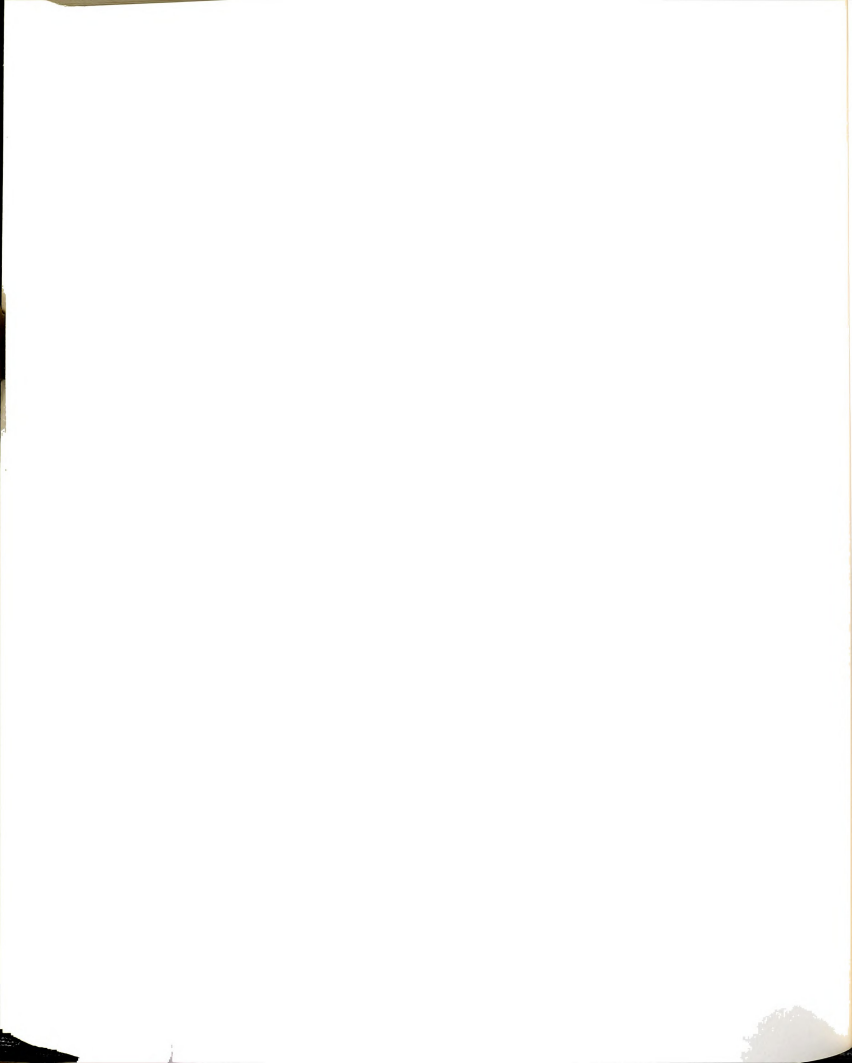
Table 19. Correlation Between Prior Knowledge and Global Coherence for All Groups and Each Group

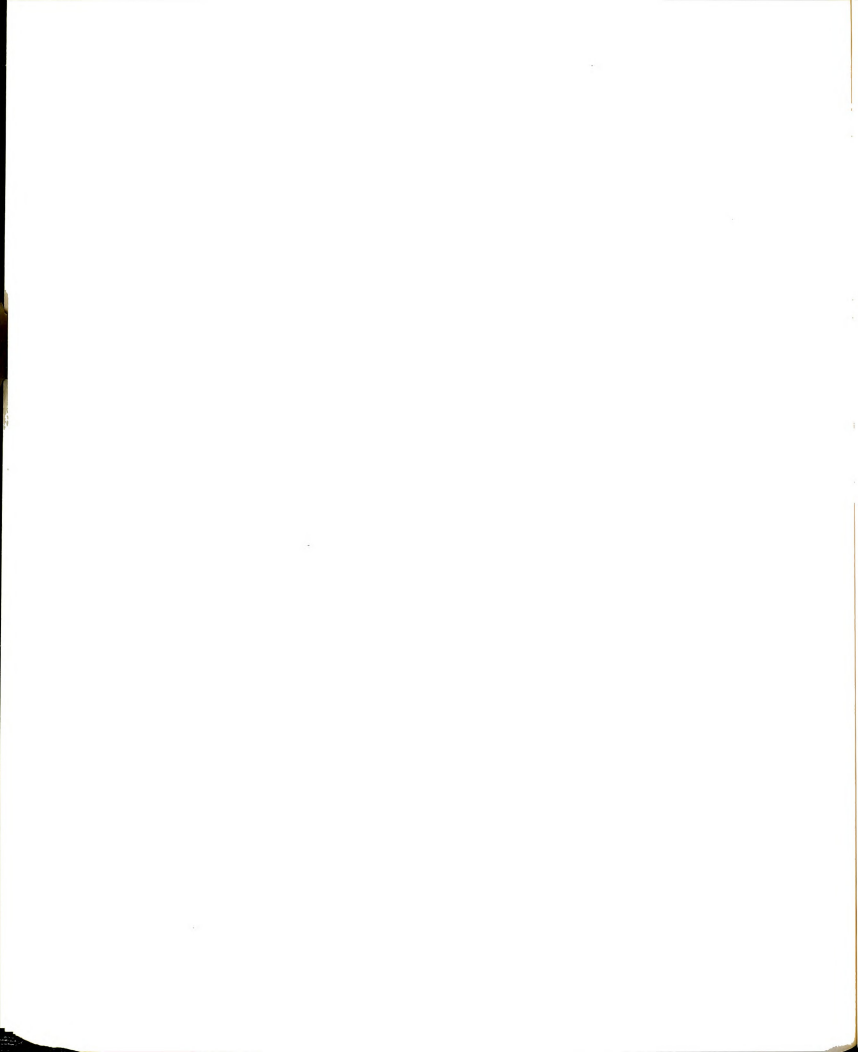| Groups	Overall Knowledge/ Coherence	Fluency/ Coherence	Organization/ Coherence	Combination/ Coherence
All Groups	.273*	.307*	.239	.268*
Arabic	.511	.630	.508	.480
Chinese	.150	.199	.122	.149
Japanese	.391*	.413*	.340	.377*
Miscellaneous	.364	.391	.391	.347

*p < .05

Table 20 shows that there was no significant relationship between overall language proficiency and global coherence the whole group, the Arabic, the Chinese, the Japanese, or the miscellaneous subgroups.

Table 20. Correlation Between Overall Language Proficiency and Global Coherence

Groups	OLP/Global Coherence
All Groups	.099
Arabic	−.316
Chinese	.196
Japanese	−.034
Miscellaneous	.432

The Additive Effect

The question related to the additive effect is: What is the additive effect of prior knowledge and overall language proficiency on global coherence?

The results of regression indicated in Table 21 show that neither prior knowledge nor overall language proficiency were a significant predictor for global coherence.
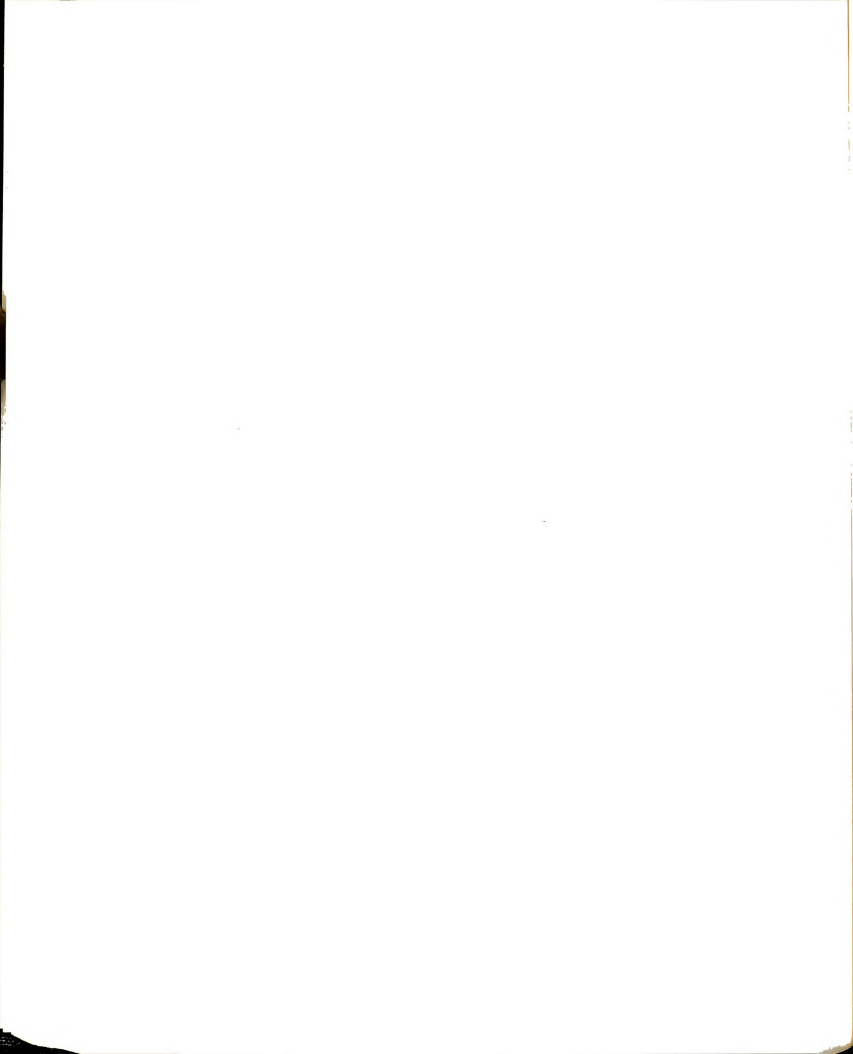
Table 21. Regression Results of Global Coherence
           (n = 49)

Variables	Coefficient	Significance
Overall Knowledge	.0144	.0753
Language Proficiency	.0136	.7509
Constant	1.0460	.0209

Multiple R = .2763
R-SQR   = .0763

So, the results of the relationship between prior knowledge and global coherence show that these two variables are significantly related for all the groups and for the Japanese subgroups with the exception of organization. The prior knowledge and global coherence are not significantly related for the Arabic, the Chinese, and the miscellaneous subgroups.

Overall language proficiency, on the other hand, did not have a significant relationship with global coherence for all the groups or with any of the subgroups.

None of the prior knowledge or overall language proficiency scores was a significant predictor for global coherence.
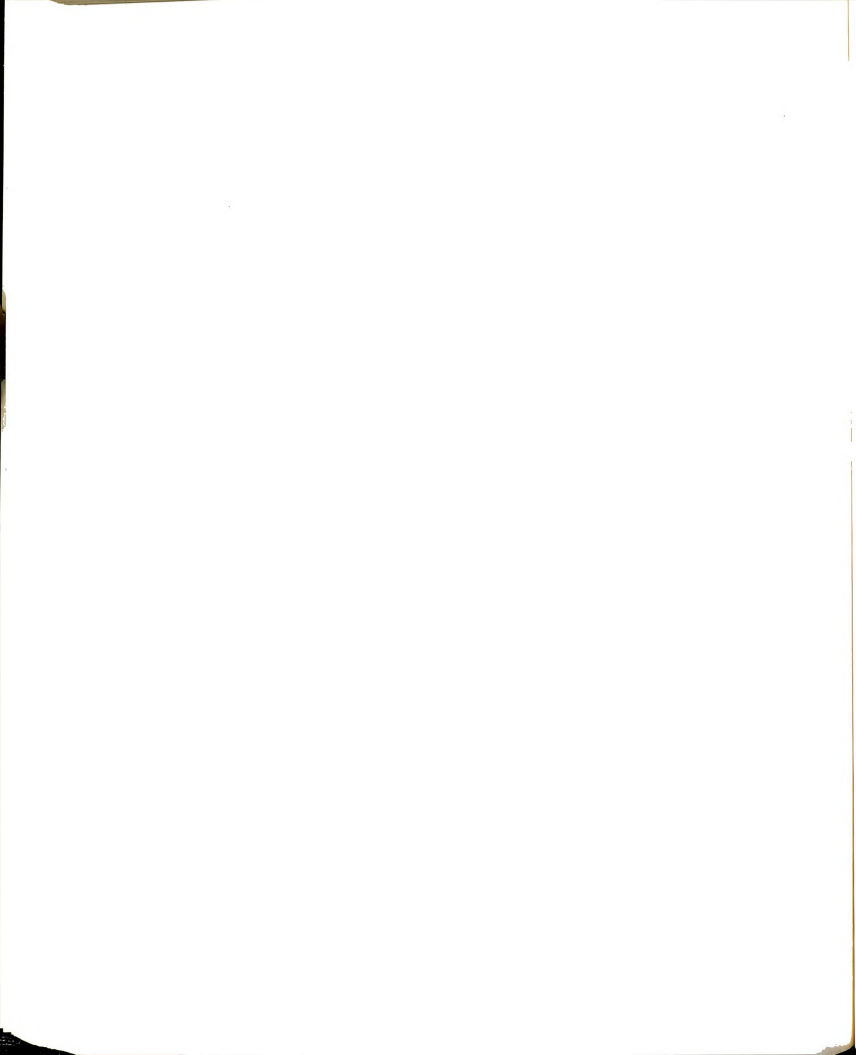
Linguistic Complexity: T-Unit
Length and Subordination

Linguistic Complexity and
Prior Knowledge

Hypothesis 1-E: There is no relationship between the
nonnative speakers' prior knowledge and T-unit
length and subordination in their essays.

Table 22 shows that there was a positive,
significant relationship between overall prior knowledge
score and T-unit length only for the Chinese subgroup
(.662, p<.05). Also, the prior knowledge are broken down
into the three components of fluency, organization, and
combination there is a statistical significant
relationship between each component with T-unit length.
That is, T-unit length is significantly correlated with
fluency (.776, p<.01), organization (.611, p>.05), and
combination (.633, p<.05).

There is also a statistically significant
relationship between organization and T-unit length
(.282, p<.05) only for the whole group. There is also a
negative significant relationship between prior knowledge
and subordination (-.819, p.<05) in the Arabic subgroup.

On the other hand, looking at the same table we
can conclude that there was not any statistical
significant relationship between the two components of
linguistic complexity and the overall knowledge as a
total or the prior knowledge components for all the group
or for any of the subgroups.

Table 22. Correlation Between Prior Knowledge and Linguistic Complexity: T-unit Length and Subordination for all Groups and Each Group

Groups	Overall Knowledge		Fluency		Organization		Combination	
	t-unit Length	Subordination	t-unit Length	Subordination	t-unit Length	Subordination	t-unit Length	Subordination
All Groups	.265	.161	.173	.154	.282*	.174	.253	.142
Arabic	.167	-.791	.223	-.651	.190	-.773	.135	-.819*
Chinese	.662*	.228	.776**	.258	.611*	.211	.633*	-.219
Japanese	.240	-.027	-.004	.086	.245	-.040	.261	-.037
Miscellaneous	.312	.283	.312	.064	.372	.355	.251	.261

*p < .05

**p < .01
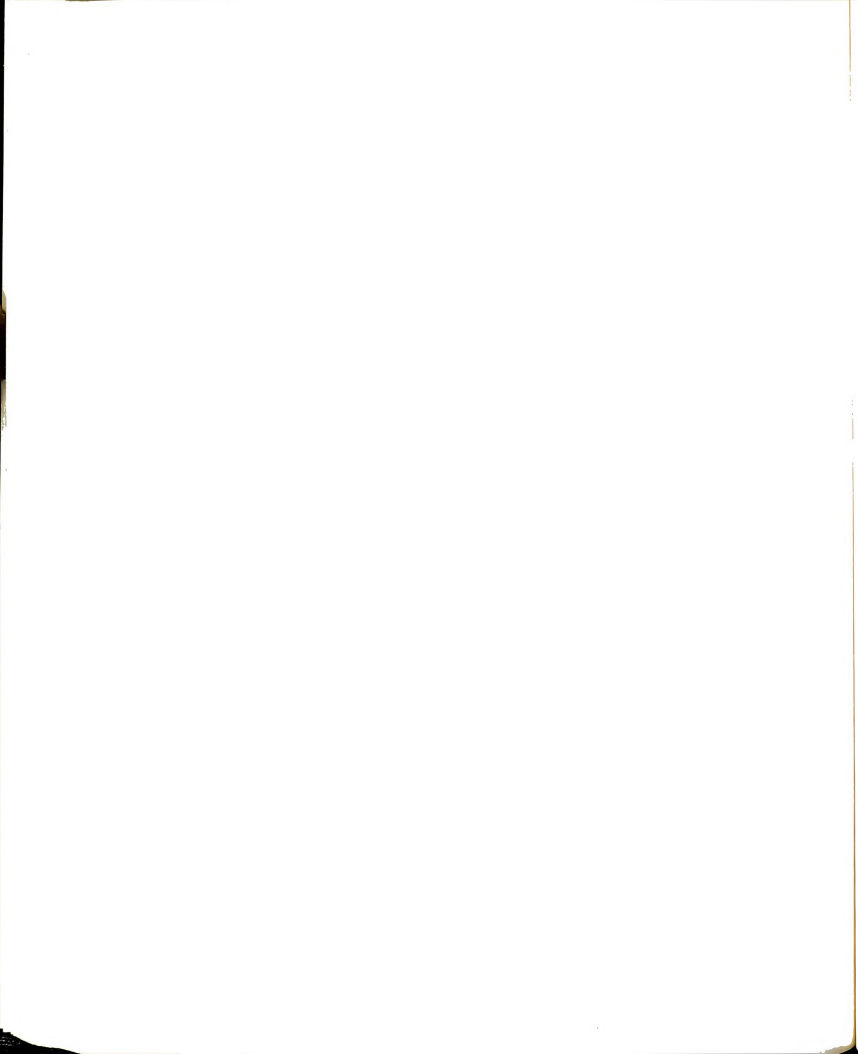
Linguistic Complexity and Overall
Language Proficiency

Hypothesis 2-E: There is no significant relationship between overall language proficiency and linguistic complexity.

Table 23 shows that there was a positive significant relationship between overall language
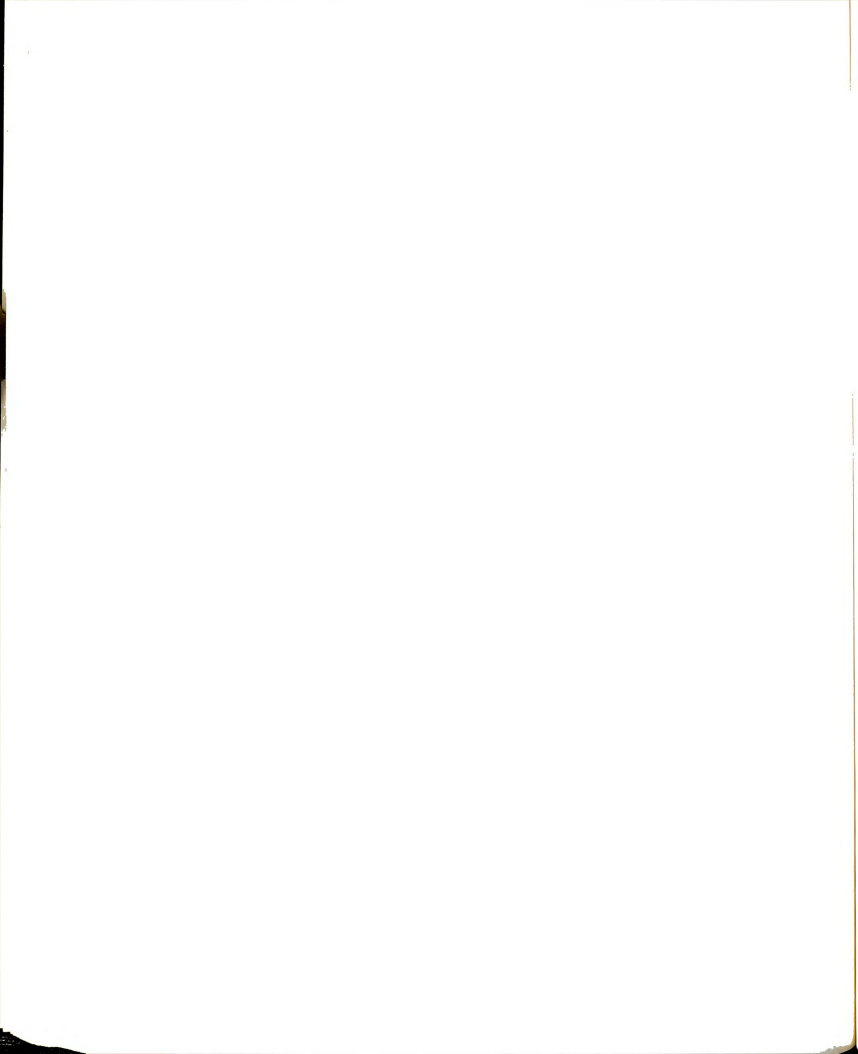
Table 23. Correlation Between Overall Language Proficiency (OLP) and Linguistic Complexity

Groups	Linguistic Complexity	
	OLP/T-unit Length	OLP/Subordination
All Groups	.438***	.172
Arabic	.136	-.792*
Chinese	-.021	-.513
Japanese	.514*	.406*
Miscellaneous	.491	.287

*p < .05
***p < .001

proficiency scores and T-unit length (.438, p<.001) for all the groups. There is also a negative significant relationship between overall language proficiency and subordination (-.792, p<.05) for the Arabic subgroup. For the Japanese subgroup, there is a positive significant relationship between overall language

proficiency scores and T-unit length (.514, p<.05) and subordination (.406, p<.05).

Looking at the same table, we find that there was not any relationship between overall language proficiency and T-unit length for the Arabic, the Chinese, and the miscellaneous subgroups. There was not any relationship between overall language proficiency and subordination for all the groups, the Chinese, thee miscellaneous subgroups either.

The Additive Effect

The question related to the additive effect is: What is the additive effect of prior knowledge and language proficiency on the linguistic complexity: T-unit length and subordination?

The results of regression for T-unit length are indicated in Table 24. The table shows that overall language proficiency was a significant predictor for T-unit length at p<.01, while the overall knowledge is not. Regression results also show that 22.4% of the total variance in the T-unit length was accounted for by both variables. A stepwise regression analysis shows that 19.2% of the total variance in the T-unit length was accounted for by the overall language proficiency alone.

Table 24.   Regression Results of the T-Unit Length
             (N = 49)

Variables	Coefficient	Significance
Language Proficiency	.1278	.0041**
Overall Knowledge	.0621	.1714
Constant	−.5866	.8572
Multiple R = .4738 R-SQR = .2245		

**Significant at p < .01.

        Table 25 shows that overall knowledge and overall
language proficiency were not significant predictors for
subordination.

        So, the results of the relationship between prior
knowledge and linguistic complexity show that there was a
significant relationship between prior knowledge as a
whole and as components and T-unit length only for the
Chinese subgroup.

        The results of the relationship between overall
language proficiency and linguistic complexity show that
there was a significant relationship between overall
language proficiency and T-unit length for the whole
group, and for the Japanese subgroup. There was also a
significant relationship between overall language
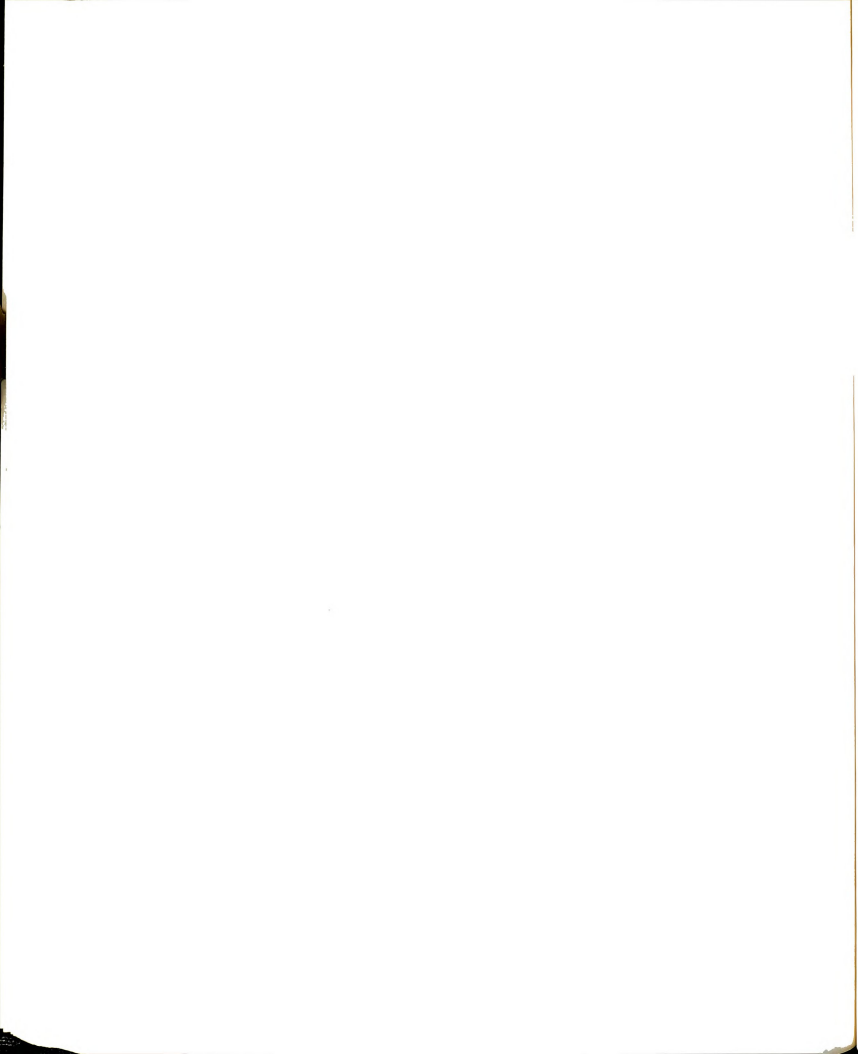proficiency and subordination for the Japanese subgroup,

Table 25. Regression Results of Subordination
           (N = 49)

Variables	Coefficient	Significance
Overall Knowledge	.0058	.3267
Language Proficiency	.0061	.3753
Constant	1.0060	.0390
Multiple R = .2152		
R-SQR = .0436		

but a significant negative relationship for the Arabic subgroup.

The results of the effect of the interaction between prior knowledge and overall language proficiency on linguistic complexity show that only overall language proficiency was considered to be a significant predictor for T-unit length.

Revision Strategies

Revision Strategies and Prior Knowledge

> Hypothesis 1-F: There is no relationship between the nonnative speakers' prior knowledge and the number of revision strategies found in their essays.

Table 26 shows that there was a positive significant relationship between revision strategies and

Table 26. Correlation Between Prior Knowledge and Revision Strategies for All Groups and Each Group

Group	Overall Knowledge/ Total Revision	Fluency/ Total Revision	Organization/ Total Revision	Combination/ Total Revision
All Groups	.170	.070	.167	.180
Arabic	.741	.582	.769*	.740*
Chinese	.132	-.120	-.145	-.116
Japanese	.044	.135	.056	.066
Miscellaneous	.390	.308	.391	.376

*p < .05.

organization (.769, p<.05), and combination (.740, p<.05) for the Arabic subgroup.

No other significant relationship was found between prior knowledge as total or between the prior knowledge components and revision strategies for all the groups or for any other subgroup.

Revision Strategies and Overall Language Proficiency

Hypothesis 2-F: There is no relationship between overall language proficiency and revision strategies.

Table 27 shows that there was a significant positive relationship between overall language proficiency and revision strategies (.873, p<.01) for the Arabic subgroup only.

Table 27.   Correlation Between Overall Language Proficiency (OLP) and Revision Strategies

Groups	OLP/Revision Strategies
All Groups	.122
Arabic	.873**
Chinese	.439
Japanese	-.017
Miscellaneous	.212

**p < .01

No other significant relationship was found between overall language proficiency and revision strategies for all the group or for any other subgroup.

The Additive Effect

The question related to the additive effect is: What is the additive effect of prior knowledge and overall language proficiency on revision strategies?

The results of regression indicated in Table 28 shows that neither prior knowledge nor overall language proficiency were a significant predictor for revision strategies.

So, the results of the relationship between prior knowledge and revision strategies show that there was a positive significant relationship between revision strategies and organization and combination for the Arabic subgroup.

The results of the relationship between overall language proficiency and revision strategies show that there was a positive significant relationship between revision strategies and overall language proficiency only for the Arabic subgroup.

Neither prior knowledge nor overall language proficiency are significant predictors for revision strategies.
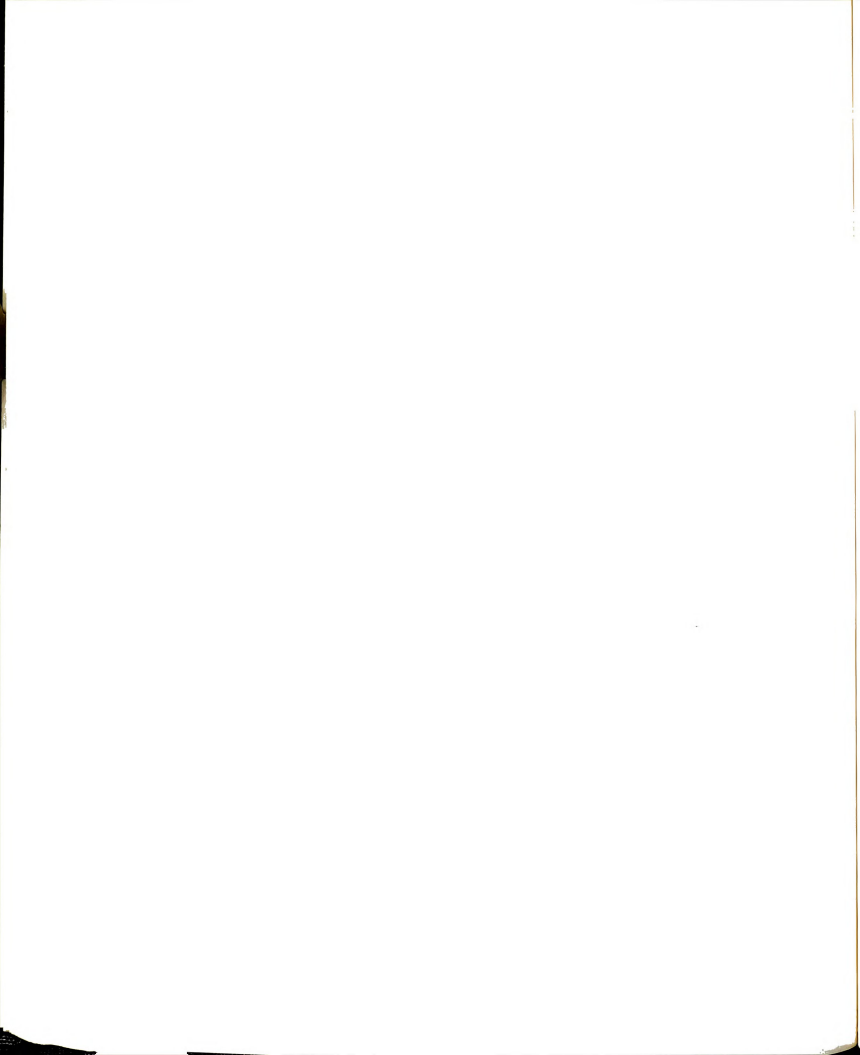
Table 28. Regression Results of Revision Strategies (n = 49)

Variables	Coefficient	Significance
Overall Knowledge	.3928	.3101
Language Proficiency	.2249	.5370
Constant	-9.1572	.7427

Multiple R = .1925
R-SQR   = .0370

Involvement

Involvement and Prior Knowledge

Hypothesis 1-G: There is no significant relationships between the nonnative speakers' prior knowledge and their involvement to writing.

Table 29 shows that there was a positive significant relationship between overall knowledge and involvement (.272, $p < .05$) for the whole group. There is also a positive significant relationship between involvement and organization (.264, $p < .05$) and combination (.274, $p < .05$) for all the groups.

Looking at the same table we notice that there was no significant relationship between prior knowledge as a whole or as components and involvement for any subgroup.
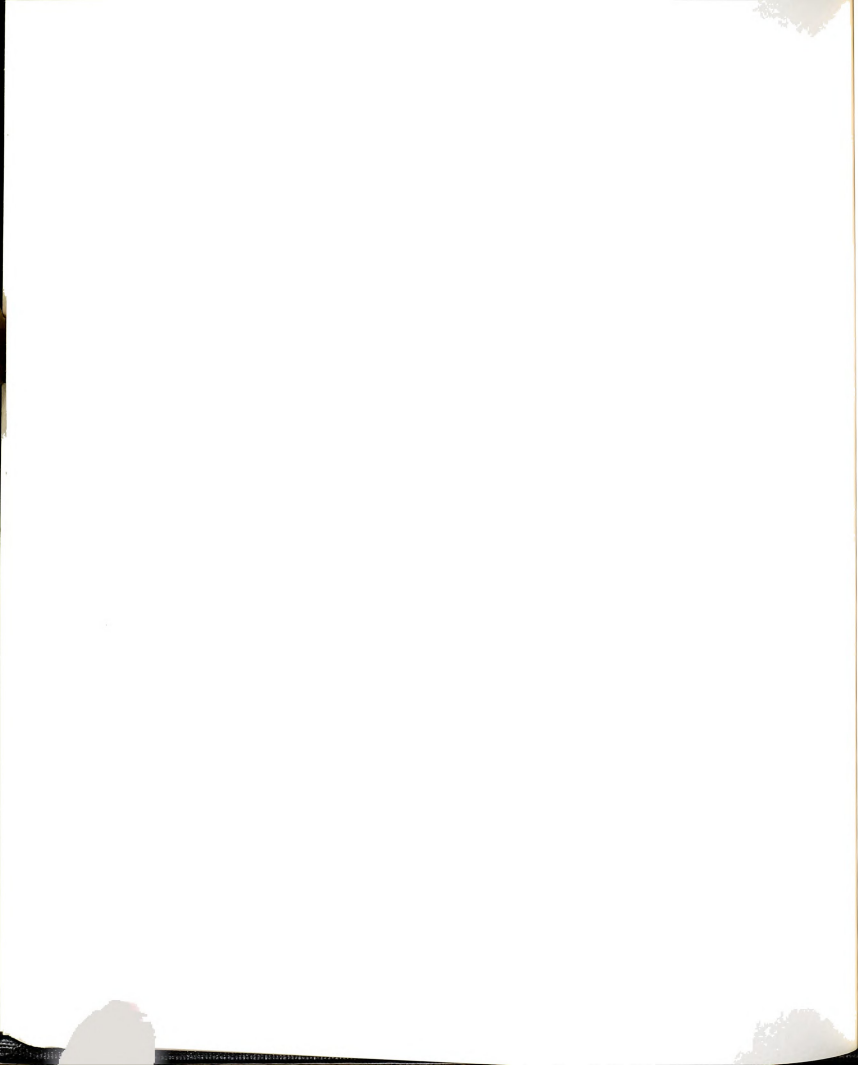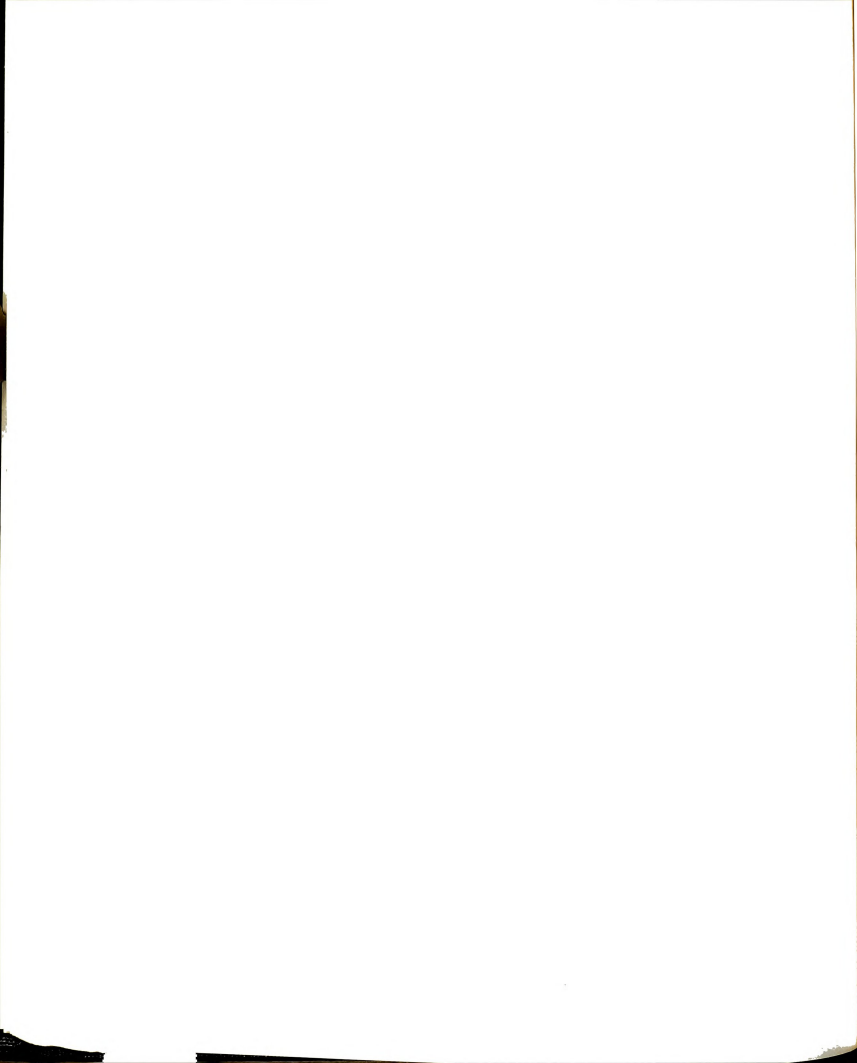
Table 29. Correlation Between Prior Knowledge and Involvement for All Groups and Each Group

Groups	Overall Knowledge/ Involvement	Fluency/ Involvement	Organization/ Involvement	Combination/ Involvement
All Groups	.272*	.198	.264*	.274*
Arabia	.125	-.186	-.070	-.151
Chinese	.332	.246	.318	.341
Japanese	.117	-.028	.122	.130
Miscellaneous	.444	.482	.371	.449

*p < .05

Involvement and Overall Language Proficiency

Hypothesis 2-G: There is no relationship between overall language proficiency and involvement.

Table 30 shows that there was no significant relationship between overall language proficiency and involvement for all the groups or for any of the subgroups.

Table 30.   Correlation Between Overall Language
Proficiency and Involvement

Groups	Involvement
All Groups	.275
Arabic	−.062
Chinese	.485
Japanese	.104
Miscellaneous	−.141

The Additive Effect

The question related to the additive effect is: What is the additive effect of overall prior knowledge and overall language proficiency on involvement.

The results of regression indicted in Table 31 show that neither overall knowledge nor overall language proficiency significantly contribute to the prediction of involvement.
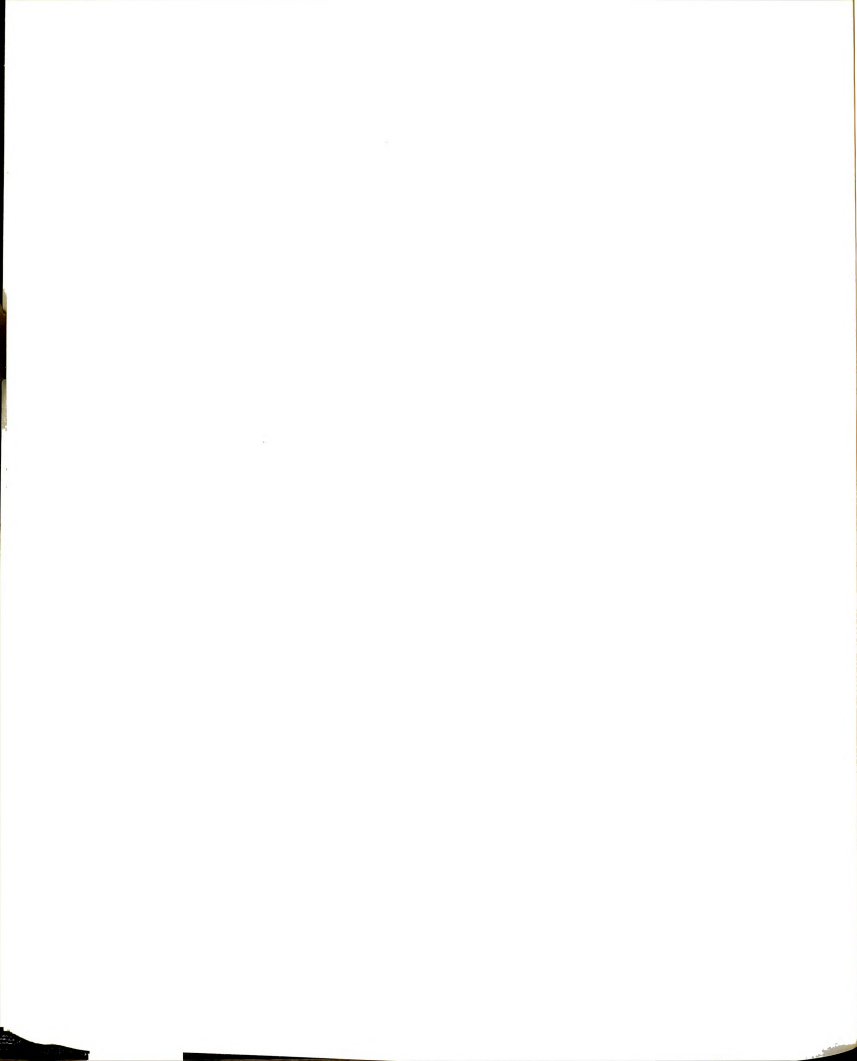
Table 31. Regression Results of Involvement

Variables	Coefficient	Significance
Overall Knowledge	.1950	.0734
Language Proficiency	.0232	.8179
Constant	6.0294	.4384
Multiple R = .2740 R-SQR = .0751		

So the results of the relationship between prior knowledge and involvement show that these two variables were not significantly related for all the groups with the exception of fluency. Fluency did not have a significant relationship with involvement for any of the groups. No other significant relationship was found between prior knowledge and involvement for any of the subgroups.

The overall language proficiency also had no significant relationship with involvement. Furthermore, neither prior knowledge nor overall language proficiency were a significant predictor for involvement.

Summary

Concerning the relationship between the demographic information (age, gender, and level of education) the results of the correlational analysis demonstrated a statistically significant relationship
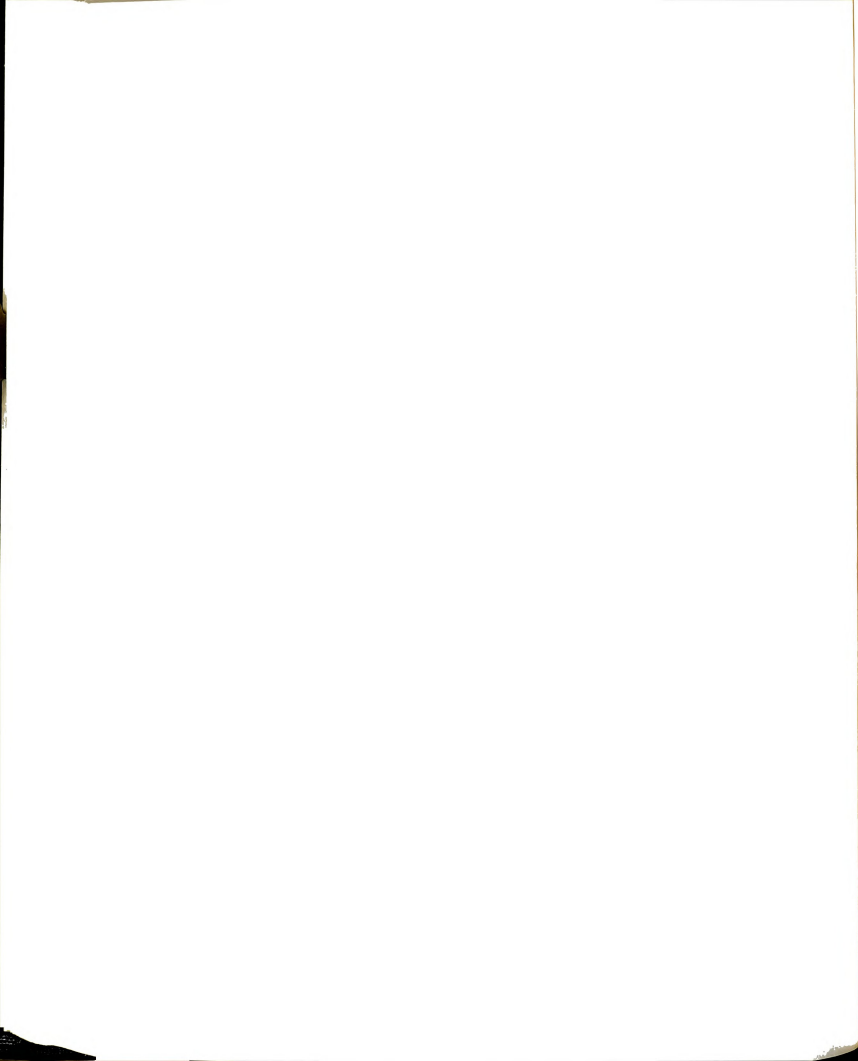
between age and content and involvement and between level of education and involvement. The results also show a significant relationship between amount of reading and involvement. This means that the older the students, the more they write and the more they are involved with their writing. Also, the more they read, the more they were involved with their writing.

Concerning the relationship between prior knowledge and writing measures, we conclude that there was a significant relationship between prior knowledge and writing proficiency scores and content. There was also a significant relationship between prior knowledge and text sophistication for all the groups and for the miscellaneous subgroup.

The results also showed that there was a relationship between prior knowledge and global coherence, revision strategies, and involvement. The relationship between prior knowledge and T-unit length for the Chinese subgroup was significant, but weak for the rest of the subgroups. Finally, the relationship between prior knowledge and amount of subordination was not significant for the whole group and all of the subgroups.
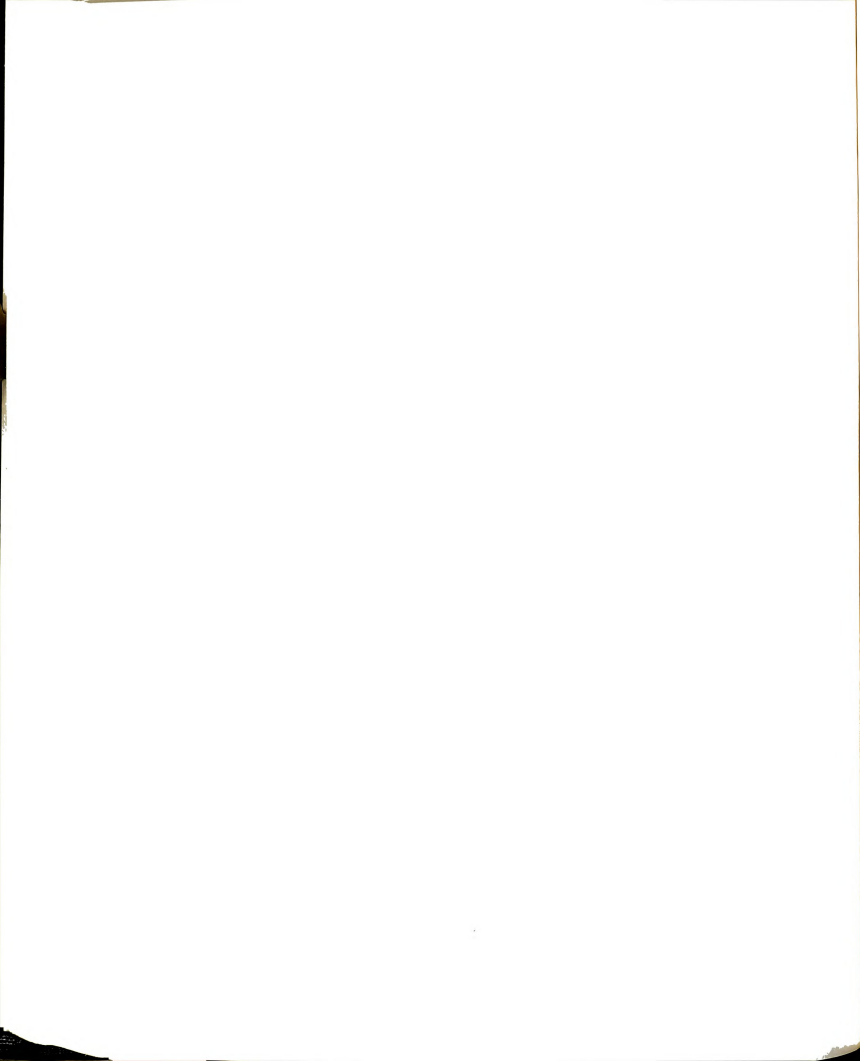
Concerning the relationship between overall language proficiency and writing, the results showed that there was a significant relationship between overall language proficiency and writing proficiency scores for
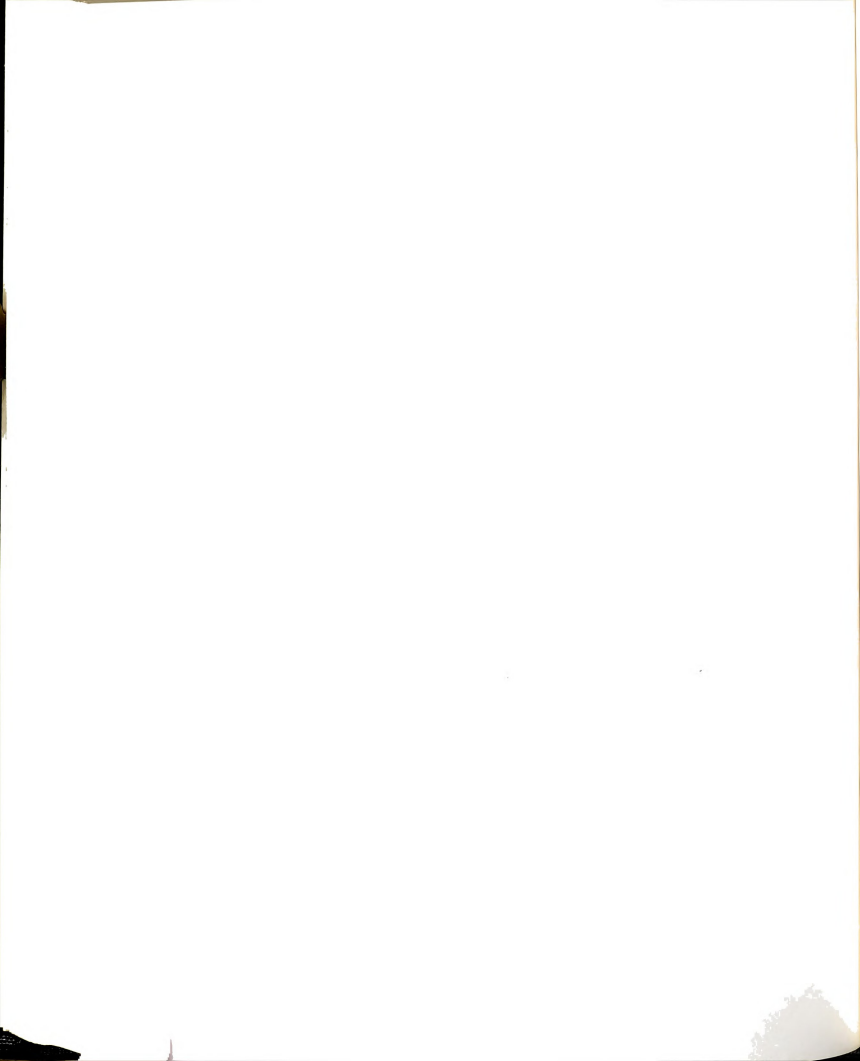
the whole group as a heterogeneous group, text sophistication for the whole group and for the Arabic subgroup, T-unit length for all the group and for the Japanese subgroup, subordination for the Japanese subgroup, and revision strategies for the Arabic subgroup. There was no significant relationship between overall language proficiency and involvement.

With the exception of the T-unit length, prior knowledge had more effect on all the writing measures than overall language proficiency. It is also obvious from the results that prior knowledge accounted for more variance in writing than overall language proficiency did.

Finally, the results also show that there was a difference among the participants' writing related to their native language. How that difference was caused by their native languages is beyond the scope of this study.

CHAPTER V

CONCLUSIONS

Introduction

This study, as discussed earlier, was designed to investigate the relationship among prior knowledge, overall language proficiency, and nonnative speakers' written discourse. Furthermore, this study has addressed several questions regarding the relationship among demographic information, amount of reading, the subjects' native language and writing measures.
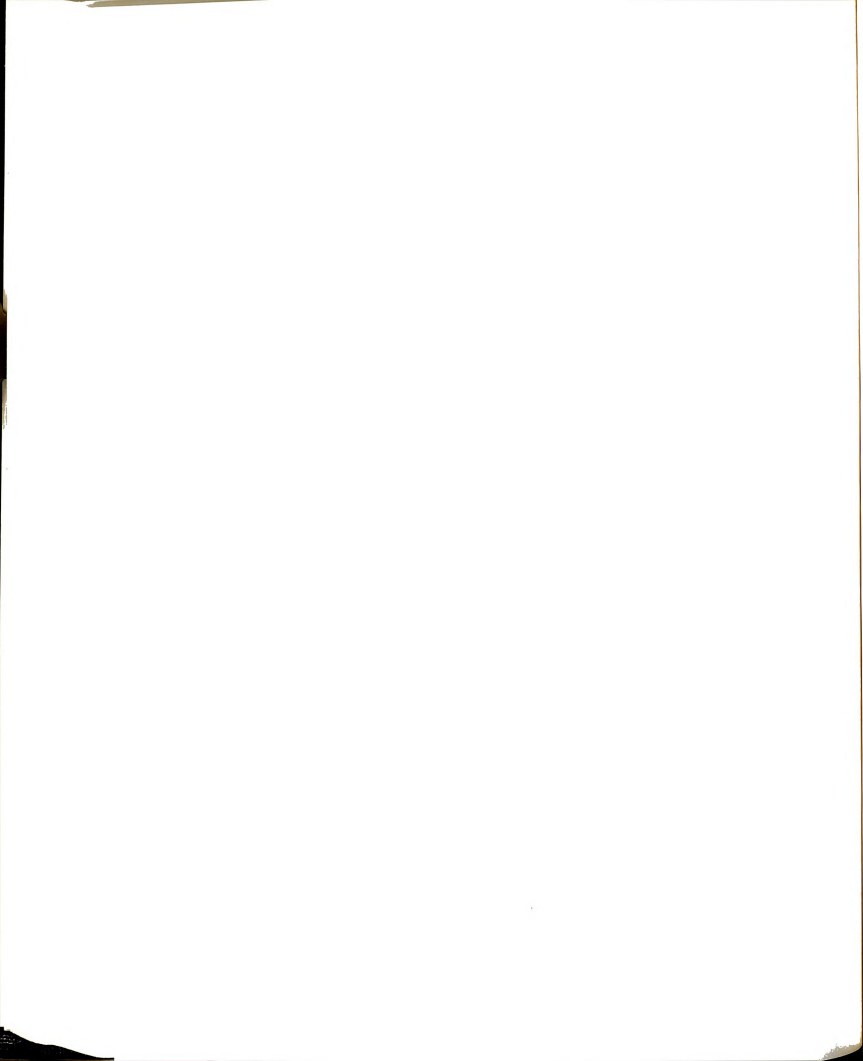
To review, the research questions regarding the nonnative speakers' written discourse were:

1. Is there any difference among the participants' writing related to their personal characteristics and the amount of reading they do?

2. What is the relationship between prior knowledge about specific topics and the nonnative speakers' written discourse?

111
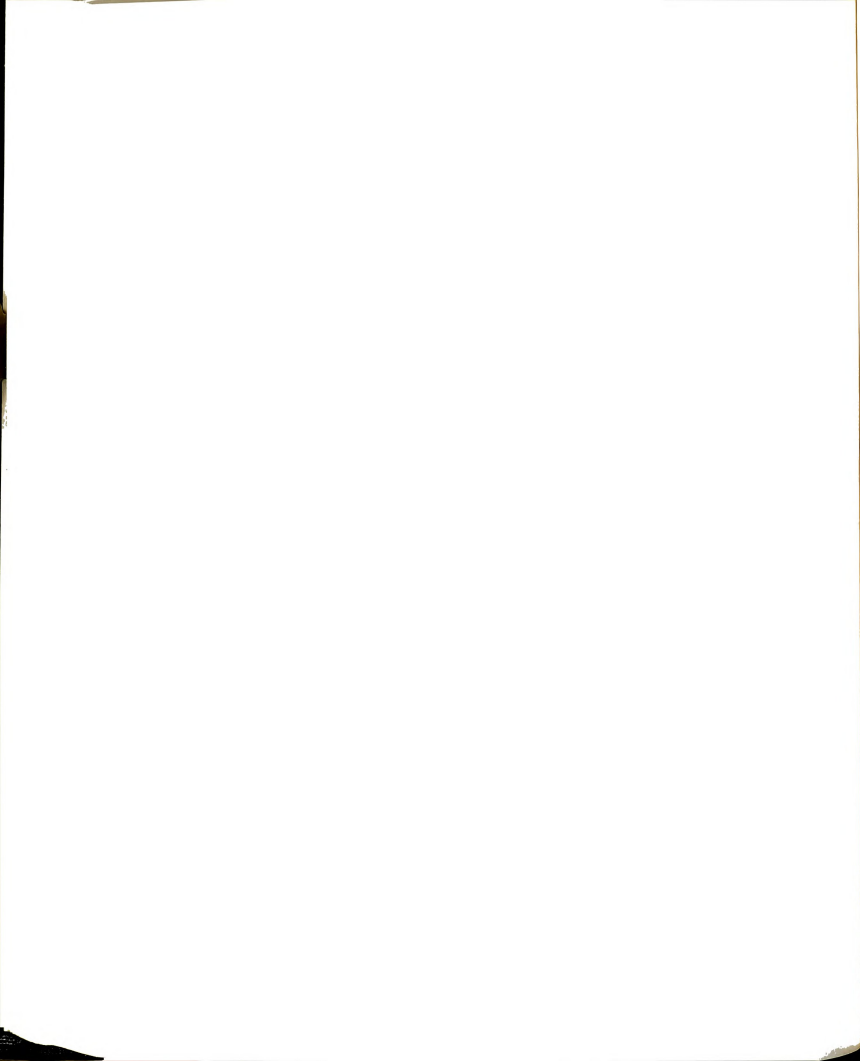
3. What is the relationship between overall language proficiency and the nonnative speakers' written discourse?

4. What is the additive effect of prior knowledge and overall language proficiency on nonnative speakers' written discourse?

Forty-nine advanced students attending levels D and E in the English Language Center at Michigan State University in Spring, 1988, wrote on the topic of Eclipses, a topic on which the students showed a large spread of knowledge. Before writing the essay, the participants took free-association and prior-knowledge tests on the topic. After writing the composition, they filled out a questionnaire, which reflected the degree of their involvement with the topic. Trained raters scored the participants' compositions on writing proficiency scores, content (the number of ideas and the number of words), text sophistication, global coherence, linguistic complexity (T-unit length and subordination), and revision strategies. The raters also scored the knowledge test for the degree of fluency and organization. Their background information, amount of reading, language proficiency scores, and involvement were self-reported on a questionnaire. Composition ratings, and responses to the questionnaire were

correlated using the Pearson-Product Moment Correlation coefficient. Regression analysis was used to quantify the additive effect between prior knowledge and overall language proficiency on writing measures. MANOVA, ANOVA, and Tukey Test were used to compare the subgroups' writing scores. Chapter IV presents the results in detail.

Personal Characteristics and Writing

1. Is there any difference among the participants' writing related to their personal characteristics and the amount of reading they do?

Correlation analysis was used to assess the relationship among the participants' gender, age, level of education, and the nonnative speakers' writing. Analysis of variance was used to assess the variation in the participants' writing associated with their native language.

This study revealed that older students were significantly more likely to write longer compositions and to discuss more ideas than younger students. Average older students were also more involved with their essays than younger students. That is, older students tended to like the topic more, found it more interesting, and experienced less anxiety while writing. Writing
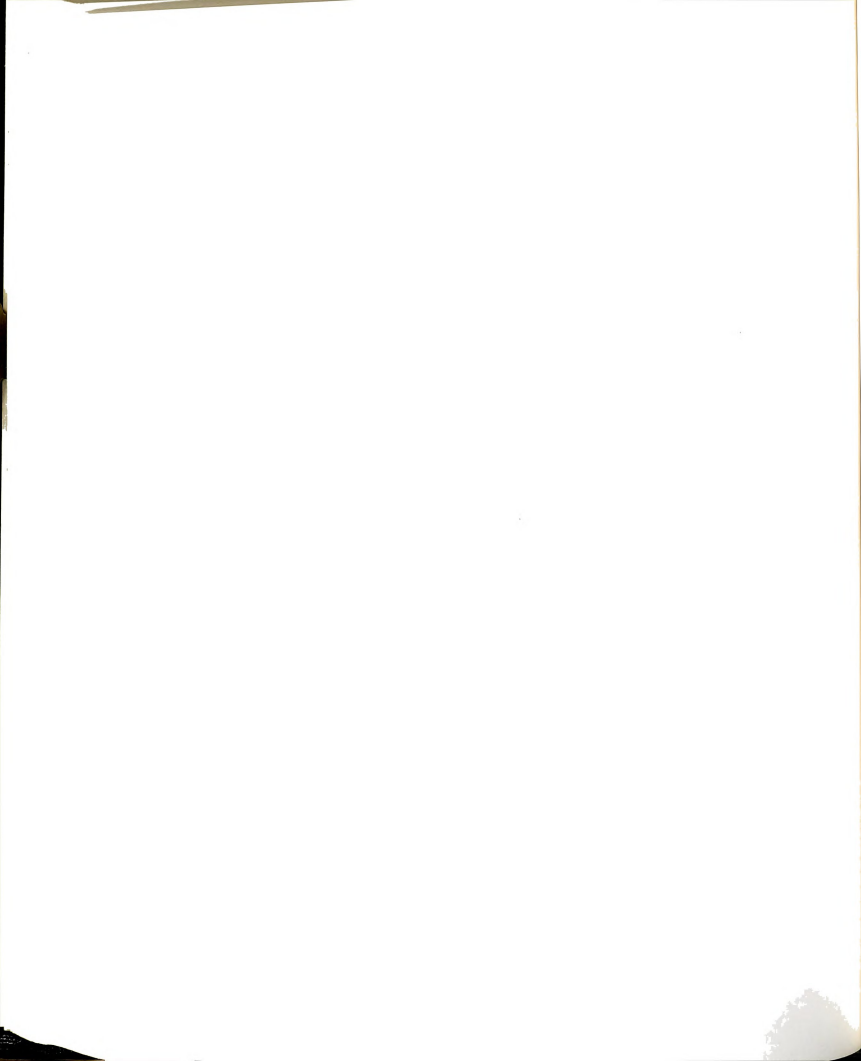
proficiency scores, text sophistication, global coherence, linguistic complexity, and revision strategies were not significantly related to the students' age.

Level of education might be expected to play a significant role on the students' compositions; surprisingly, none of the writing measures except involvement was affected by the level of education. The study revealed that the higher the students' level of education, the more they were involved with their compositions. Involvement was also affected by how much students read. The amount of reading also could be expected to play a significant role on the quality and quantity of the students' compositions. Krashen (1984) and Stotsky (1983) said that ability to write was not taught, but rather was acquired through extensive reading, and therefore, better writers are necessarily better readers. This study suggested otherwise. Writing proficiency scores, content length, global coherence, linguistic complexity, and revision strategies, which appeared to represent writing ability, were not significantly related to the amount of reading the students reported that they did. Therefore, Krashen's notion of reading as the source of writing skill was not confirmed in this study.
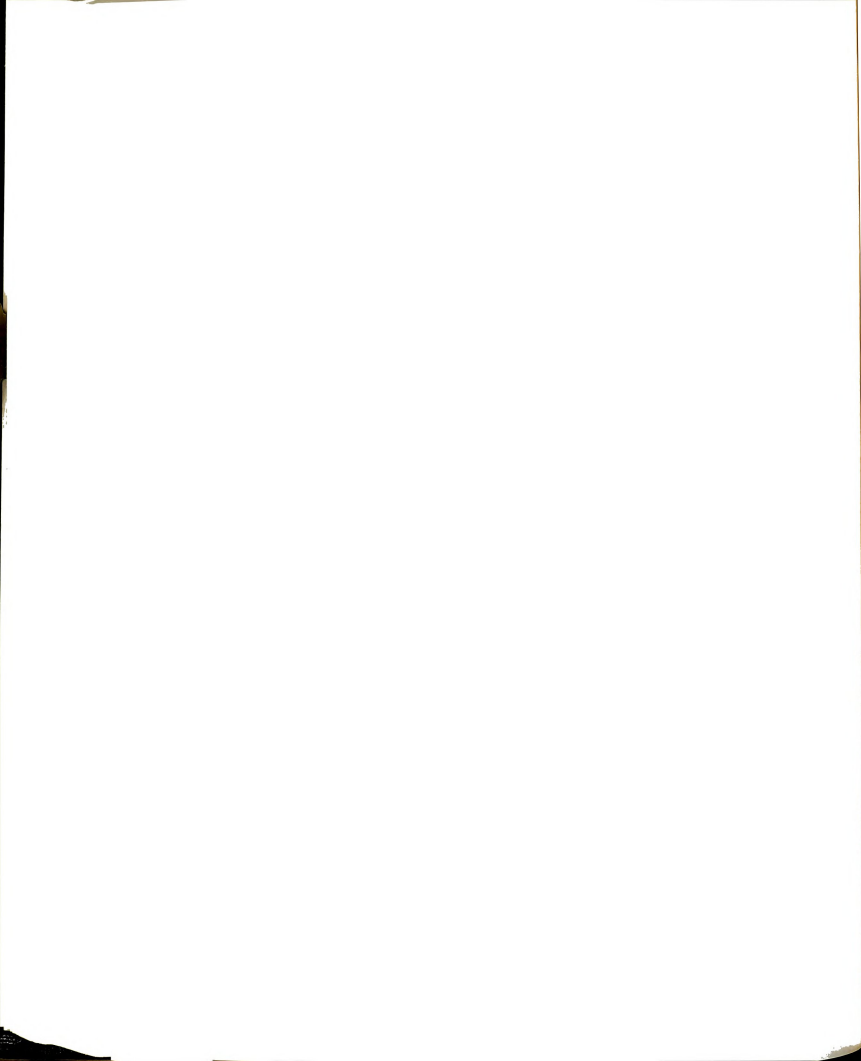
Participants' Native Language

This study disclosed that there were differences among the means of writing measures that can be associated with the subgroups' native language. For instance, the Arabic and Spanish subgroups outperformed the rest of the subgroups in the amount of subordination. Why or how elements of these subgroups' native language caused the difference in the subjects' writing performance is beyond the scope of this study.

Prior Knowledge and Writing Performance

2. What is the relationship between prior knowledge about specific topics and the nonnative speakers' written discourse?

The relationship between prior knowledge and each of the writing measures are more fully discussed below.

Writing Tests

This study expands the previous studies' findings to the ESL students' writing. The findings of this study revealed that great background knowledge of the topic about which they were writing affected the nonnative speakers' writing at the quantitative and qualitative levels.

Specifically, the nonnative speakers with high prior knowledge scored higher in a writing proficiency test similar to the writing holistic scores in the
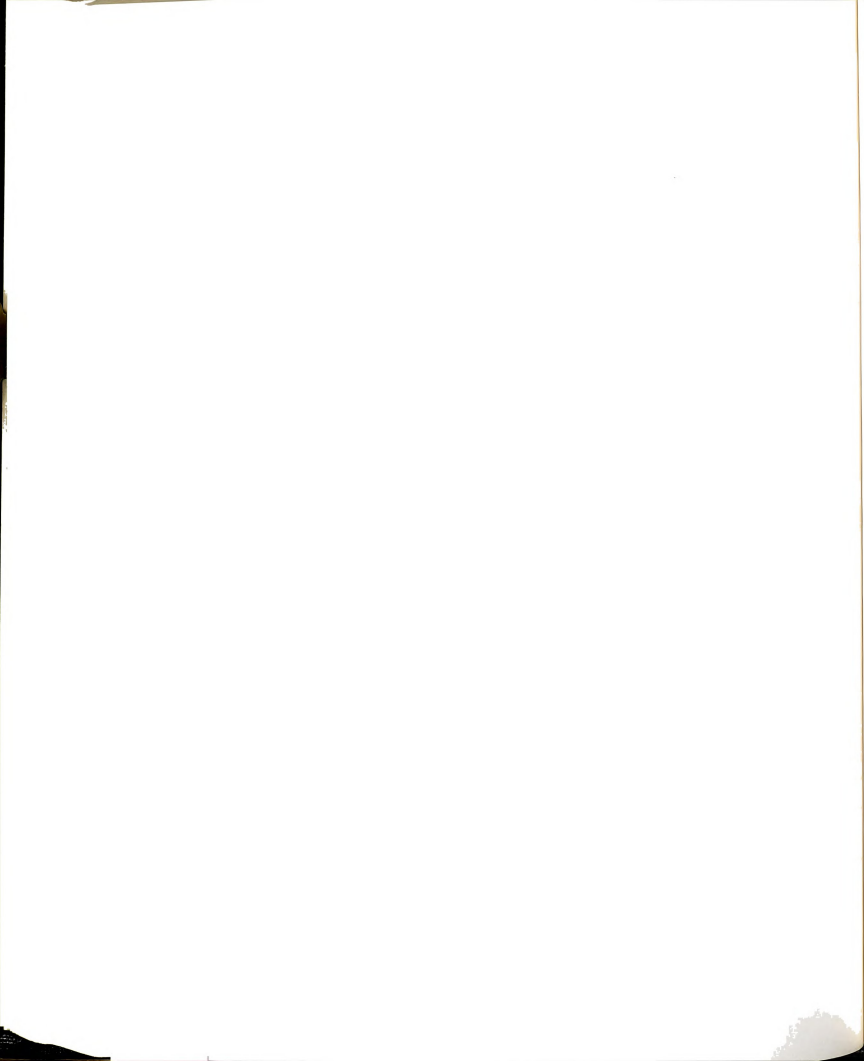
previous studies of Langer and Chesky. On both scales, the students' compositions were scored holistically in terms of stating and supporting a position, passage relevance, organization, details, sentence structure, word choice, and mechanical errors. This finding was supported by Hilgers (1982) who also found that students familiar with content pay more attention to style, arrangement, grammar, and mechanics.

Content Length

The students with high knowledge were able to present and discuss many more ideas and to write longer essays than the students with low knowledge. In this study, there were some students with low knowledge who wrote relatively long essays, but their ideas were not relevant. They either discussed culturally related ideas or presented legends related to the phenomenon of Eclipses. Langer (1984), Chesky and Hiebert (1987), and Stroethoff (1988) contended that knowing much about the topic enabled the students to include and present more ideas, details, experiences, and concepts. This finding is also consistent with Perl's (1979) study which revealed that students write more information when they write about topics familiar to them, such as personal topics.
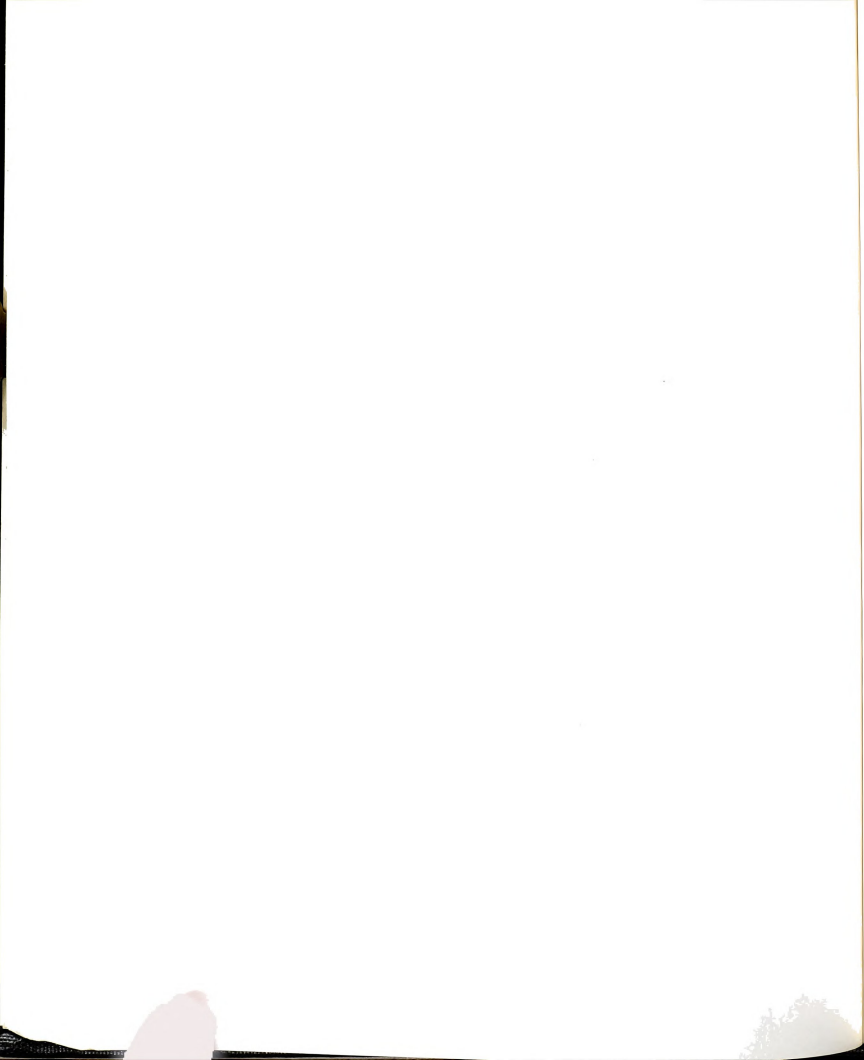
It is obvious that if writers know nothing about the topic, they will write very little. Some subjects in this study expressed their unwillingness to write on the topic of eclipses because they said they did not know anything about it. A few of them agreed, but wrote only one sentence, "I know nothing about Eclipses," and handed in their papers at the end of the session. This polite refusal to participate appeared to reflect their agony at being asked to write on a topic about which they knew nothing.

Text Sophistication

Text sophistication was measured by looking at the existence of elements, such as terminology, jargon, references, definitions, and explanations which presumably more characterized texts addressed to more sophisticated audiences. Concerning the relationship between prior knowledge and text sophistication, this study revealed different findings from those of Stroethoff (1988). In this study, the relationship between prior knowledge and text sophistication was apparent. In Stroethoff's study, the relationship between prior knowledge and text sophistication was not consistent in the three topics on which she asked her subjects to write. Two reasons may account for these different findings. One is that Stroethoff asked her
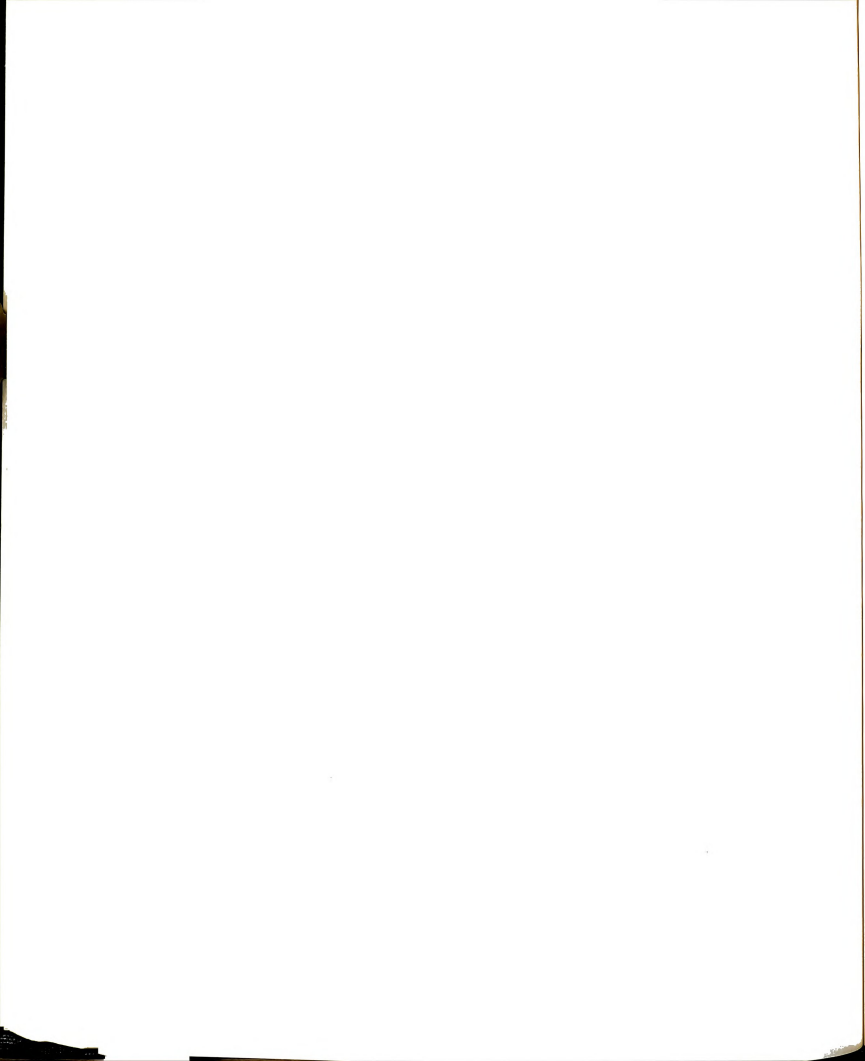
subjects to write on three topics and the variation of the subjects' knowledge about the three topics might be responsible for the inconsistency of the effect of prior knowledge on these two variables. Another reason is the difference in age and analytical ability between her subjects and the academically more sophisticated subjects of this study might account for the subjects of this study outperforming hers in these two variables. Langer (1984) and Chesky and Hiebert (1987) did not investigate their subjects' text sophistication.

In text sophistication, the high knowledge subjects were able to use specialized terminology, jargon, and references which were only accessible to a highly educated and sophisticated audience. On the other hand, the low knowledge subjects tend to provide simple explanations of the notion of Eclipses. Interestingly, some high knowledge subjects drew some pictures of the sun and moon Eclipses and why and how they occur.

Global Coherence

This study revealed that prior knowledge was significantly correlated with global coherence. The texts of the students with high knowledge more clearly identified the topic, orient the readers, employ cohesive ties, plan and organize details, and followed the discourse structural rules. In contrast, the data
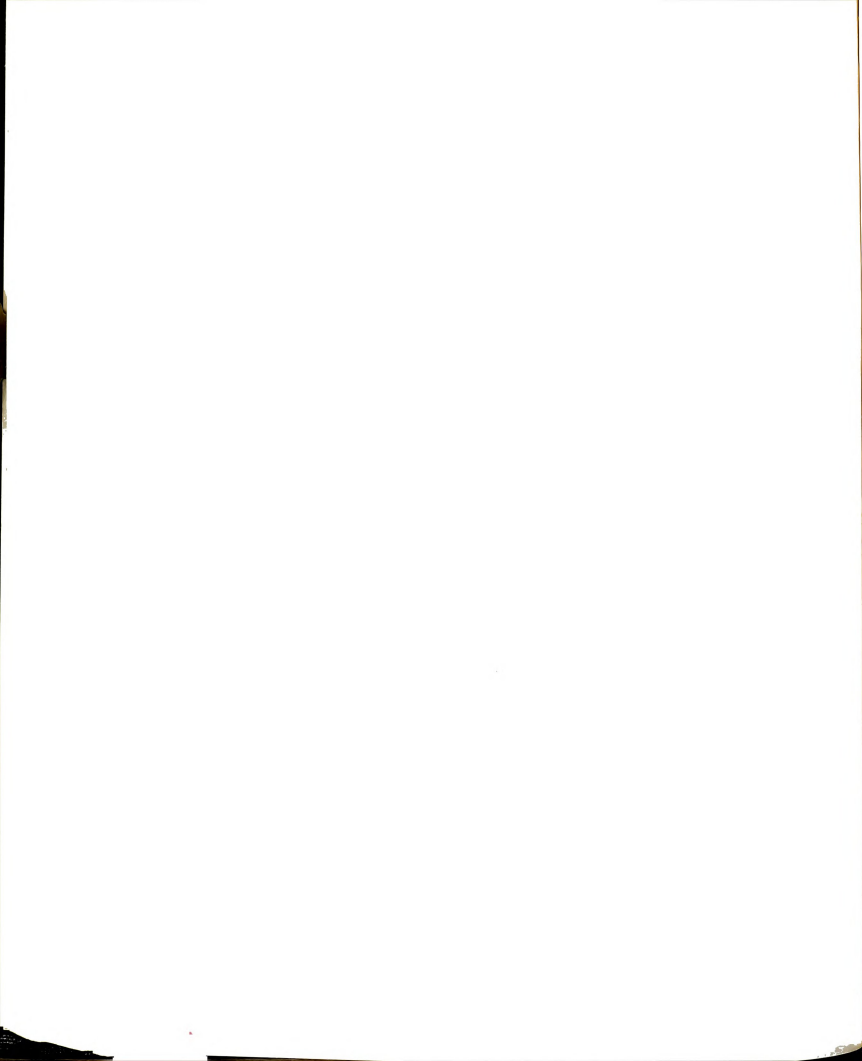
suggested that students with low knowledge tended to write fragmentary and haphazard texts. Those students tended not to sense where each idea fit, nor did they have a plan to organize or plan the details of their compositions. This study's finding was consistent with a similar study conducted by McCutchen (1986) who found that students with high knowledge about football were able to bring out and discuss important ideas of football more coherently than the students with low knowledge. This finding was also supported by Britton (1978) who asserted that high prior knowledge writers know which ideas are related and how all the parts are to be put together. Langer (1984) and Chesky and Hiebert (1987) found a positive significant relationship between prior knowledge and global coherence.

Involvement

Regarding involvement, this study revealed that high prior knowledge subjects were more involved in their compositions while writing them. The findings of this study suggest that it is important for writers to have a positive attitude toward the topic about which they are writing. This kind of attitude may create confidence, motivation, and lessen anxiety which will allow the flow of ideas and permit learning from writing to take place. Chesky (1984) indicates that high prior knowledge
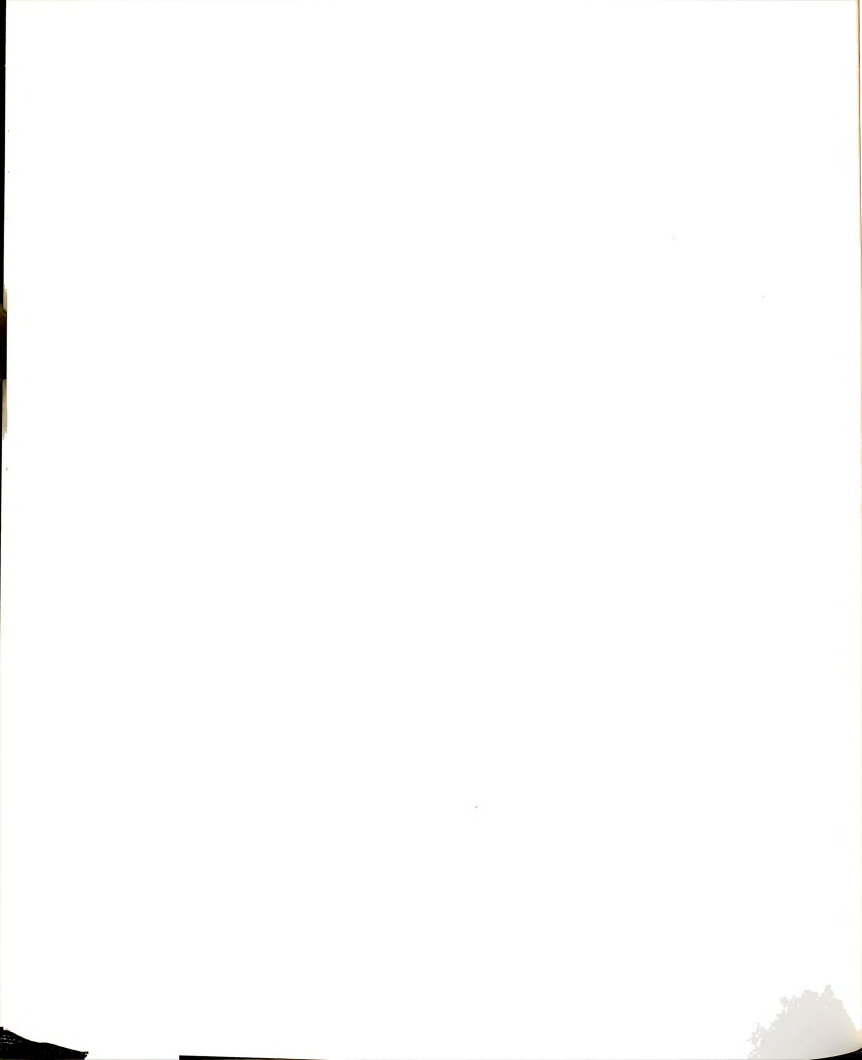
subjects were more involved with their writing. As a result of their involvement, they wrote better and found the writing easier.

Linguistic Complexity

This study and all previous studies of this type did not reveal any relationship between prior knowledge and linguistic complexity. One suitable explanation of this finding was provided by Chesky (1984) who indicated that the mean T-unit length constitutes a problem as a method of measuring the quality of writing. The problem comes from the fact that T-unit length does not reflect the ability of students to carry out and construct meaning.

Another problem with T-unit length as a measure of linguistic complexity is that it is not clear whether our subjects deliberately choose not to write long T-units, or were not able to write long T-units. This problem constitutes a major drawback of the mean of T-unit length as a measure of linguistic complexity. Furthermore, Witte and Faigley (1981) indicated the inappropriateness of using T-unit length as an indicator of writing quality. They contended that T-unit length and clause length have very little influence on the quality of writing. Although the T-unit measurement has received criticism, it is still the widely used
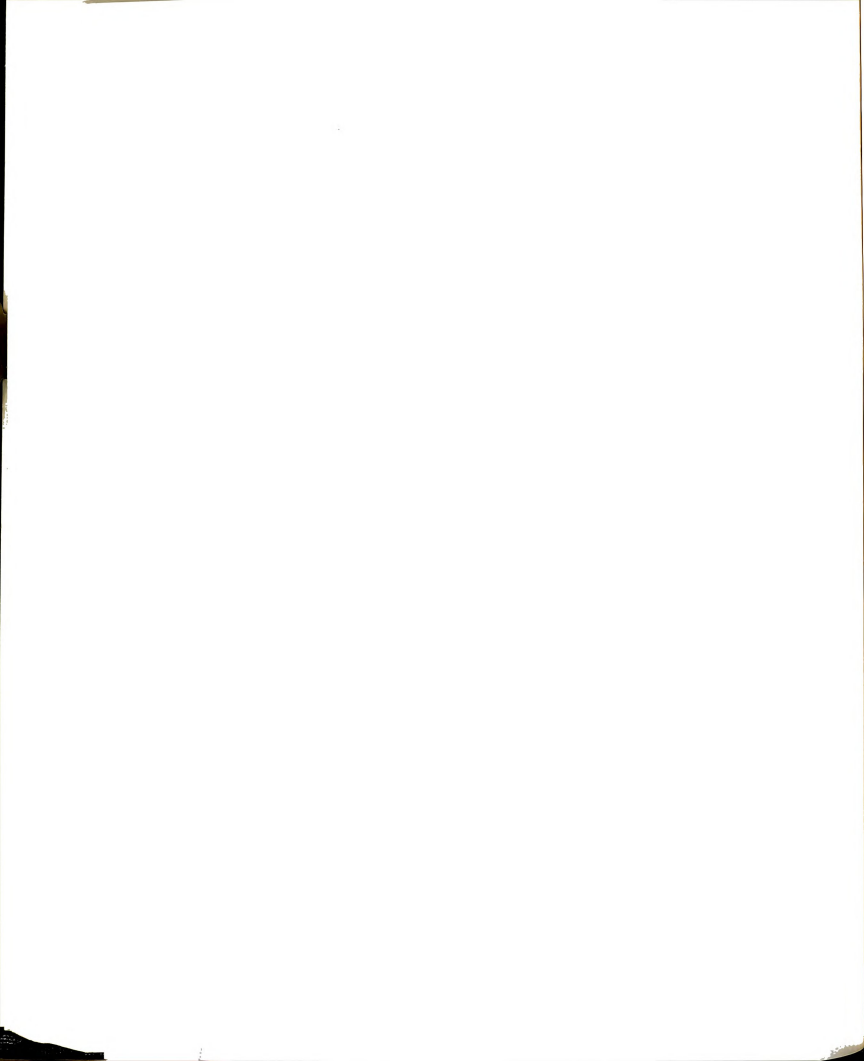
measurement for the syntactic complexity of the native and nonnative speaker's written discourse.

Revision Strategies

Revision strategies are an important stage in writing which helps student writers to construct clearly the intended message. The data of this study did not show a significant relationship between prior knowledge and revision strategies. One explanation might be that students spend most or all of the 45 minutes writing the compositions, not revising them. On the other hand, those who did not write long compositions may have spent their time thinking about new ideas, not revising them. This finding is consistent with Raimes' (1987) study which demonstrated that ESL student writers do not pay attention to their mistakes because they are language learners. Most of this study's subjects only pay attention to the writing down of ideas, leaving the mistakes to their teachers to correct.

Prior Knowledge and Writing
Performance of the Subgroups

When students are grouped by native language, the relationship among prior knowledge, writing proficiency scores, content length, text sophistication, global coherence, linguistic complexity, revision strategies, and involvement become much more complex.
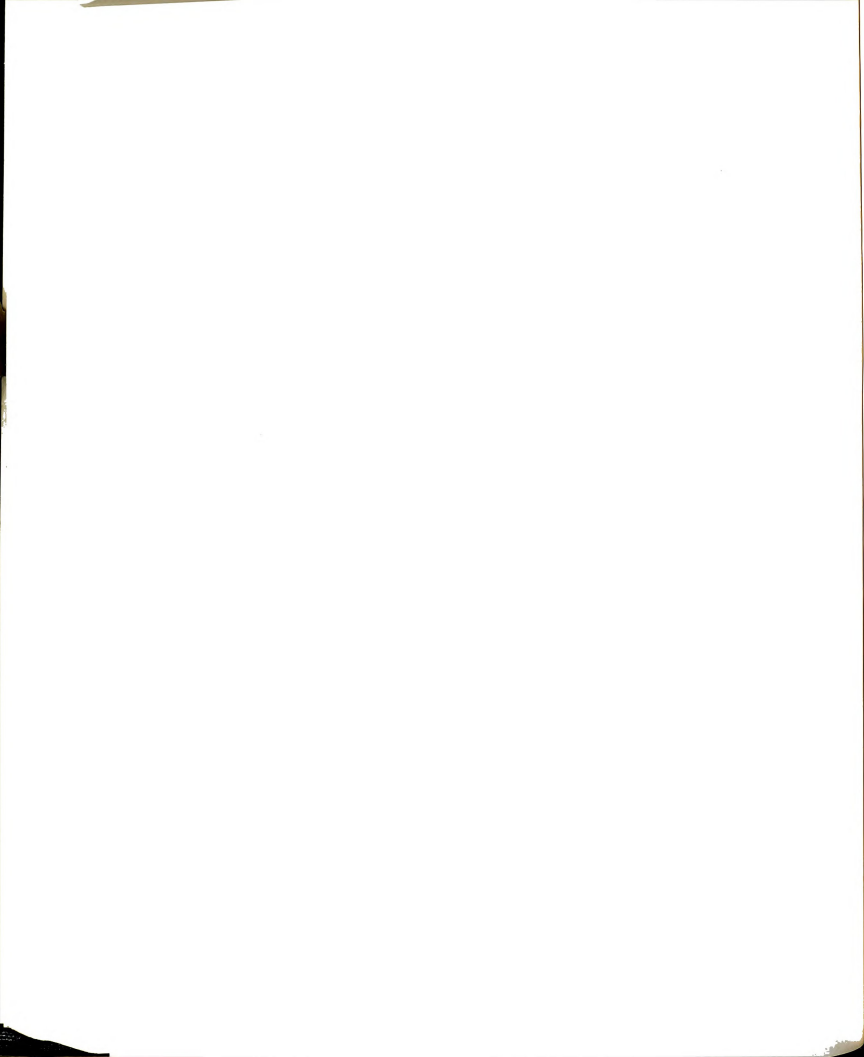
For instance, the relationship between prior knowledge and writing proficiency scores was evident for the Arabic and Japanese subgroups only. Prior knowledge also consistently related to the length of the essays of all the subgroups. In the miscellaneous subgroups, text sophistication appeared to have a significant relationship with prior knowledge. No other subgroup's writing measures appeared to have a significant relationship with prior knowledge.

This inconsistency of the relationship between prior knowledge and the subgroups' writing measures may be attributed to either or both of the following factors. One factor might be that the number in each subgroup was small. Another factor might have been an effect of the subgroups' native languages. Investigating this factor lies beyond the scope of this study.

Overall Language Proficiency and Writing Performance

3. What is the relationship between overall language proficiency and the nonnative speakers' written discourse?

This study revealed that there was a significant positive relationship between overall language proficiency and writing proficiency scores, text sophistication, and mean T-unit length for the whole group. No significant relationship was found between
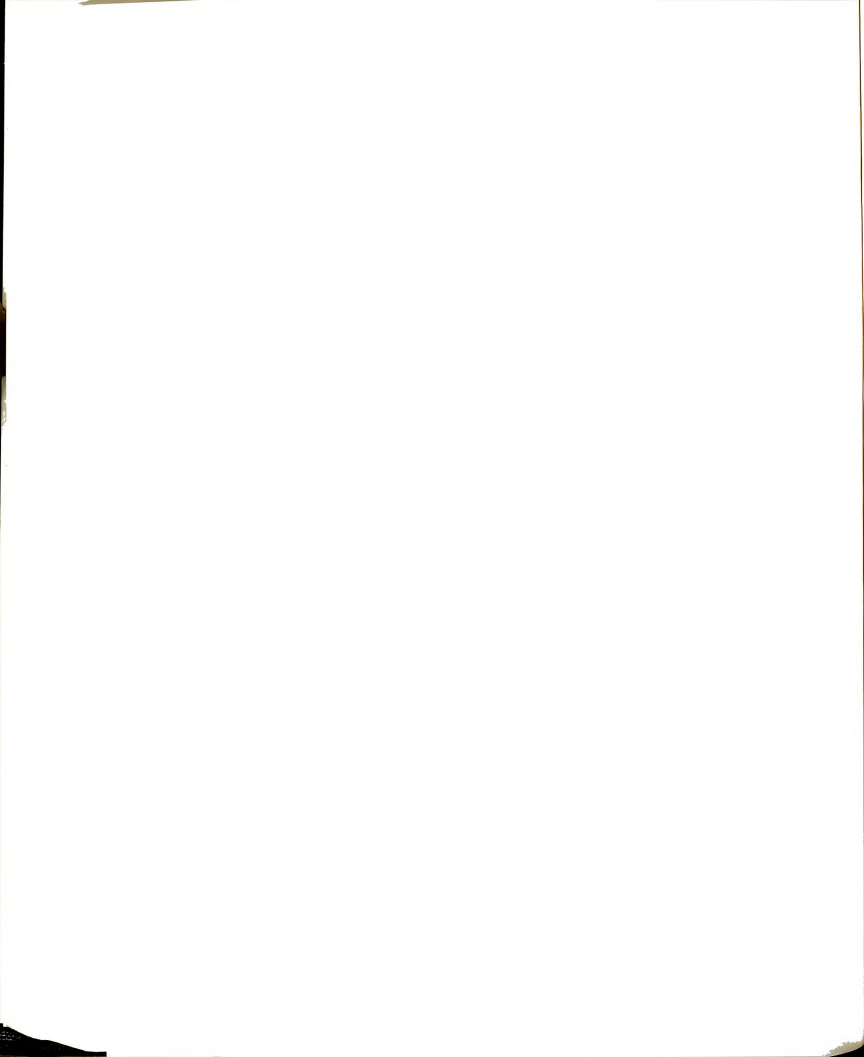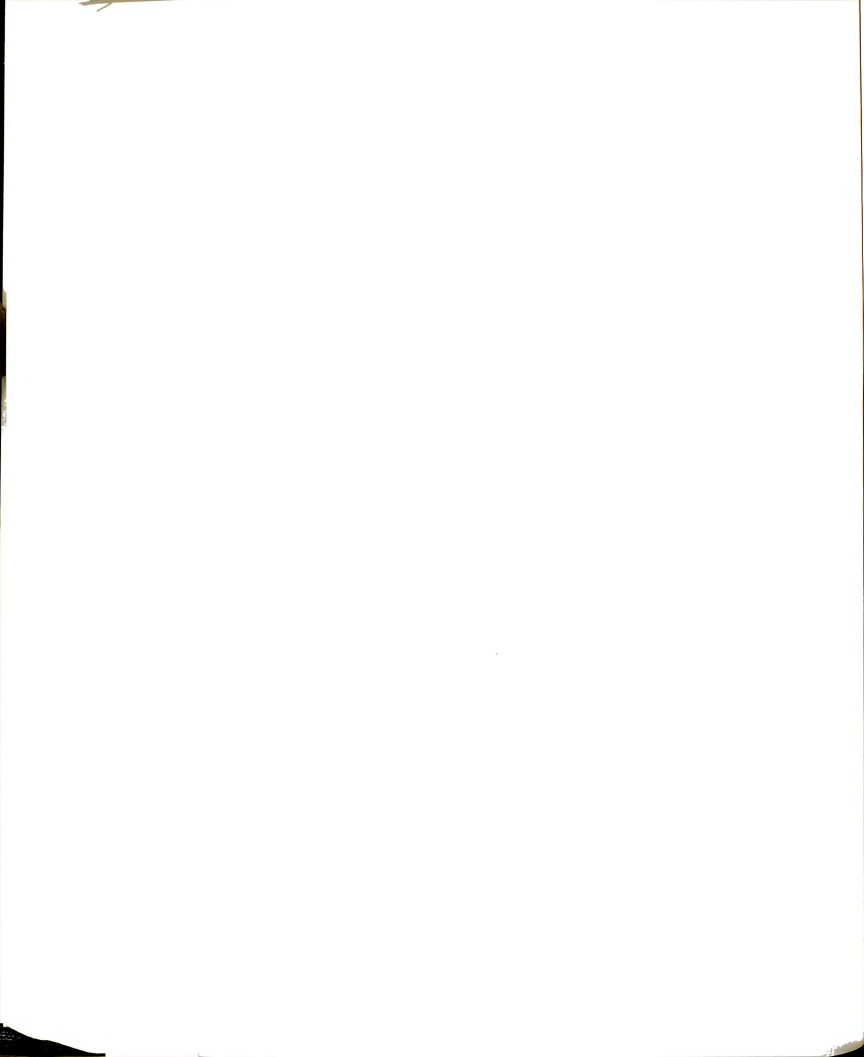
overall language proficiency and length of the essays, global coherence, amount of subordination, revision strategies, and involvement for the whole group.

For the homogeneous subgroups, the results of the relationships between overall language proficiency and writing measures were also very complex. For instance, for the Arabic subgroup, there was a significant positive relationship between overall language proficiency and revision strategies and also between overall language proficiency and text sophistication. For the Japanese subgroups, there was also a significant positive relationship between overall language proficiency and mean T-unit length and amount of subordination. No other significant relationships were found between overall language proficiency and any of the writing measures. Hence, it seems that placing students in writing classes according to their language proficiency scores alone may be a mistake.

Additive Effect

4. What is the additive effect of prior knowledge and overall language proficiency on nonnative speakers' written discourse?

The results of the study revealed that prior knowledge accounted for more of the variability in writing measures than overall language proficiency.

Specifically, prior knowledge accounted for more variability in writing proficiency scores, number of words, and number of ideas than overall language proficiency did. The overall language proficiency, in contrast, accounted for more variability on only mean T-unit length than prior knowledge did.

Implication

The findings of this study demonstrated that familiarity with the topic affected writing proficiency scores, content length, text sophistication, coherence, and involvement with the text. Based on the findings of this study, writing instructors might consider the following:

1. Choose interesting topics and ask students to read and discuss materials related to those topics in prewriting activities.

Instructors should ask their students to write about topics that are interesting to them. Once the instructors make sure that the topic interests them, they then ask the students to read some materials related to that topic in order to activate either their existing schemata about that topic or to provide them with information that would enable them to write well. Another alternative is dividing the classroom into groups and asking them to discuss collaboratively the topic. In
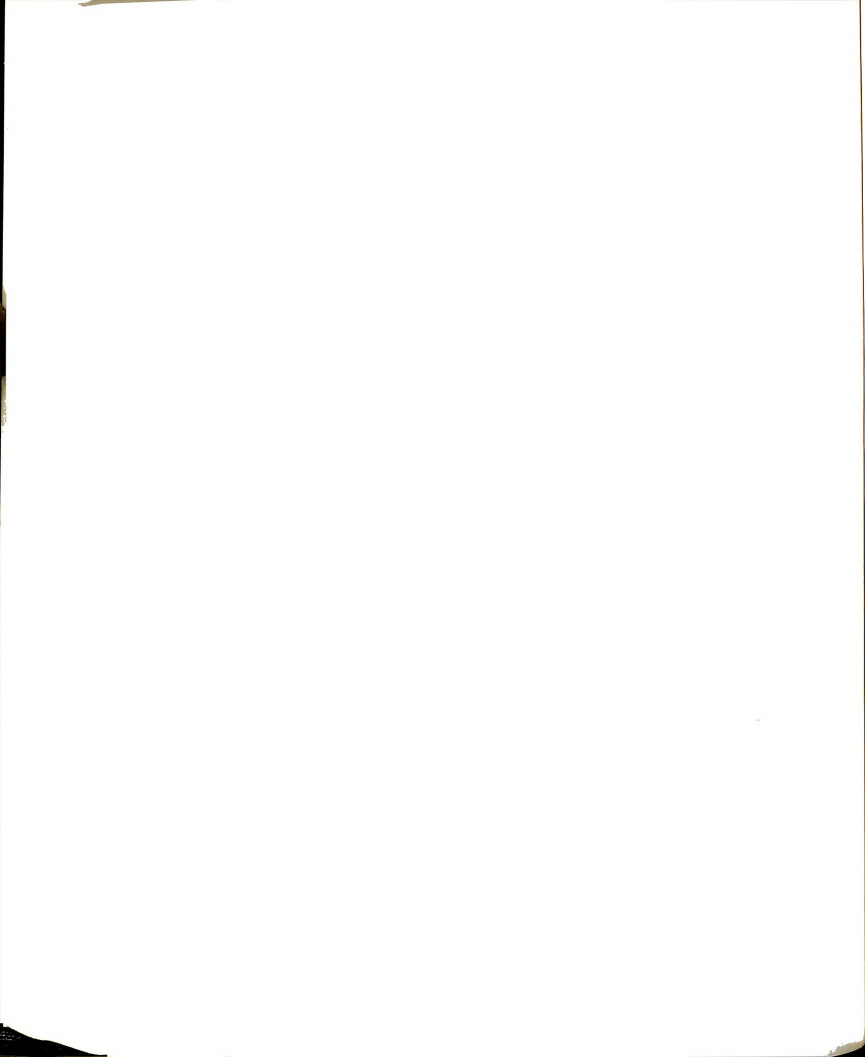
this way students could exchange information about the topic students are writing.

   2. Prior knowledge should take its place with language proficiency in the writing class

   This study revealed that prior knowledge was more strongly related to students' writing than language proficiency was. Therefore, in writing classes, language should not be overemphasized since it does not account for the majority of the variability in the students' writing performance.

   3. Necessary jargon and vocabulary must be provided to students

   During the administration of the writing assignment, students appeared to have a lot of questions regarding the topic about which they were to write. Some questions related to clarifying facts, others related to the vocabulary needed to express specialized facts. Therefore, if the topic requires explanation of abstract facts or requires jargon, the vocabulary should be provided.

   4. Ideas relevant to the issues being discussed in the topic must be highlighted in prewriting activities

   This study revealed that one problem of ESL student writers lay in recalling ideas irrelevant to the issue they were discussing. One way to solve this
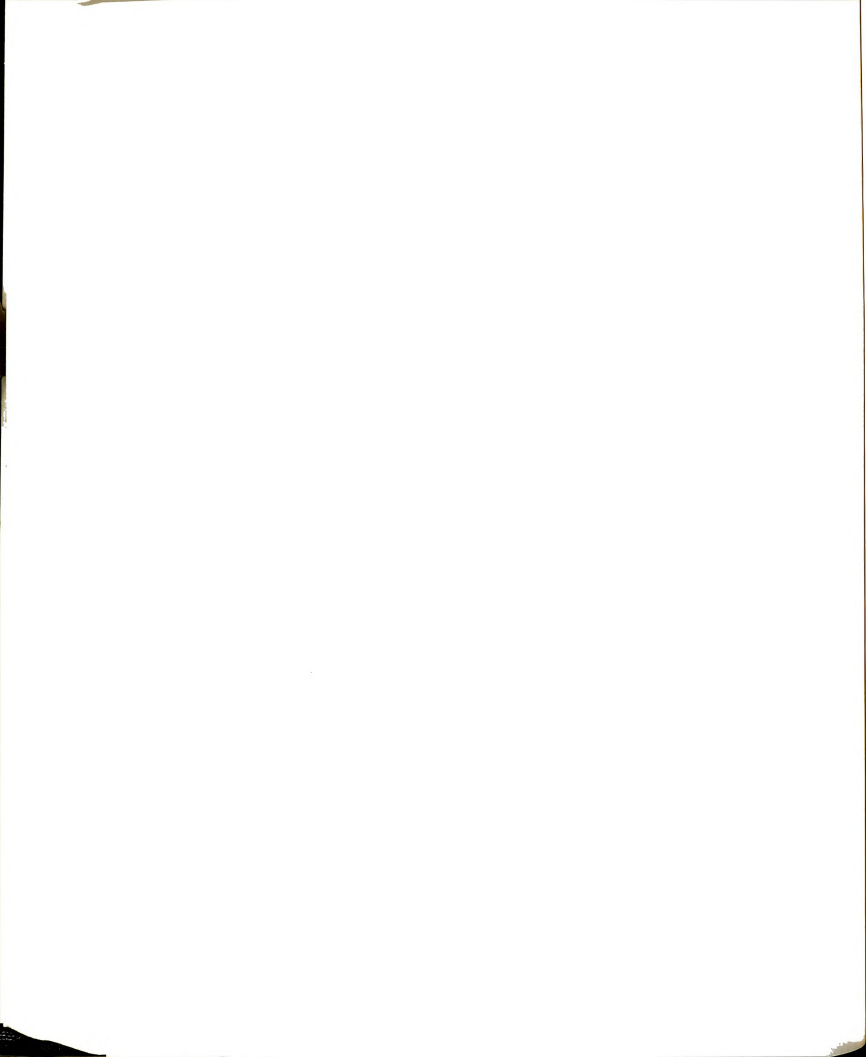
problem is by utilizing the prewriting session to highlight the relevant ideas of the topic. Doing so will help the students to learn which ideas fit what issue, and will, in turn, help them generate well organized and coherent texts.

Carrell (1983) said that ESL students do not utilize prior knowledge properly when they read. This finding seems to apply to some writers since some of their essays contained interesting cultural ideas about eclipses, but these ideas did not fit or support the issues they were discussing. Consequently, it is important for the students to learn how to separate scientific facts from cultural legends. For example, if ideas are unrelated to the issues being discussed, they should not be included in the essay.

     5. The students' native language could be initially used to generate ideas

Lee (1986) and Swaffar (1988) indicated that native language has an advantage over a second language in the process of recalling information about the text to be read. Therefore, students might be asked to jot down ideas in their first language and then, with the assistance of their instructors translate what they have written into the second language.

     6. Grades should not be emphasized as the ultimate goal of writing
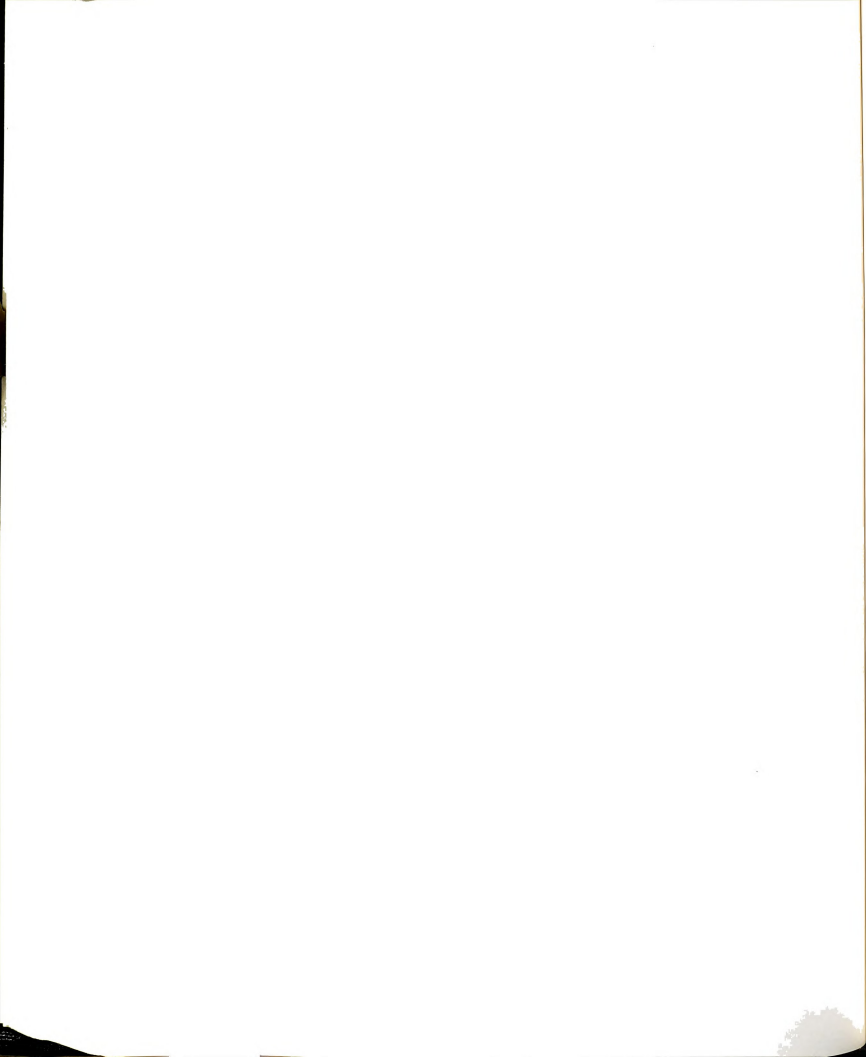
Based on observation during the conduct of this study, we believe that grades should not be emphasized because students usually fear grading. Therefore, students should be told that they are not writing to attain grades. The agony of writing for grades, as Chesky (1984) pointed out, may keep the students from freely expressing their thoughts and from trying different styles. Of course, grades encourage and motivate students, especially the good students, but grades may also deter others.

> 7. The prewriting activities should not be understated or overstated

Prewriting activities must be wisely planned and organized to avoid wasting time and effort. Spending too little or too much time preparing the students to write may aggravate more than help the preparation process. This matter is actually a judgmental one.

Suggestions for Further Research

For further research the following suggestions could be considered:

> 1. Academic progress, study skills, and intelligence should be studied along with prior knowledge and language proficiency

We have learned while conducting this study that there could be a third variable in addition to content
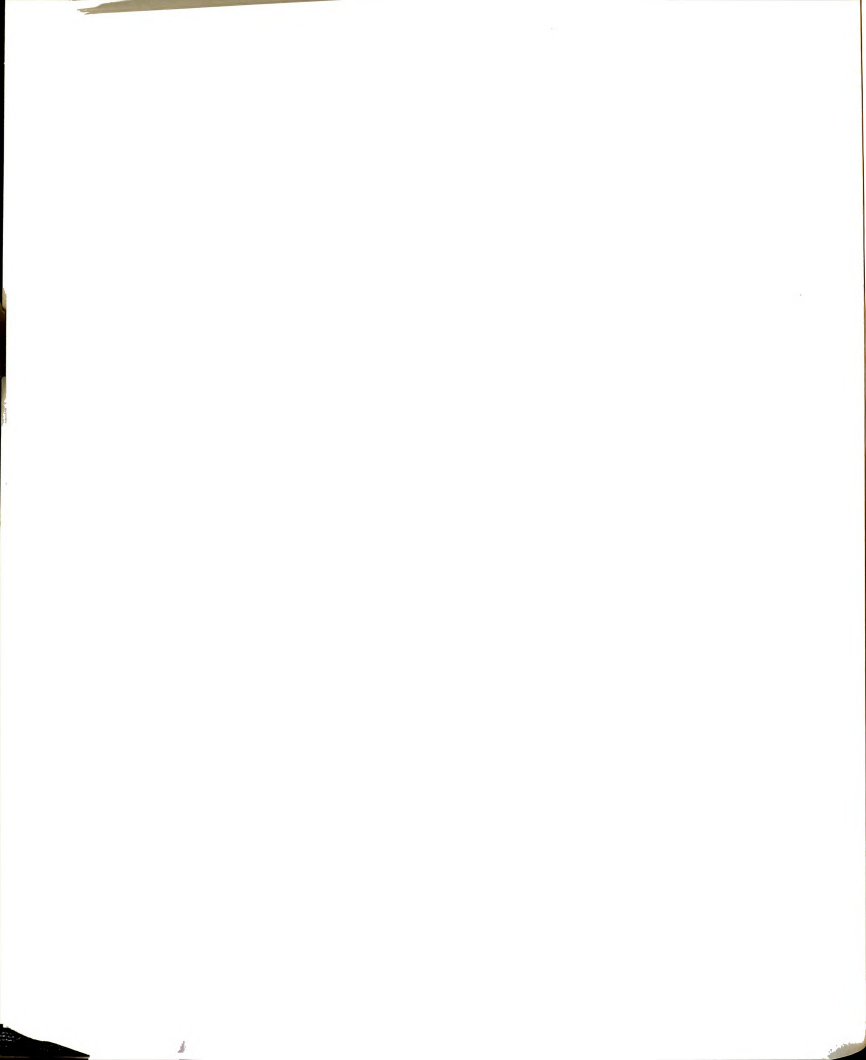
and language proficiency. Perhaps the good writers were the ones who had good study skills and who happens to know more about the topic. In addition, they might also be the kind of students who would be disciplined enough to be good writers. So, it may be that when this study measures skills, it not only measured writing and background knowledge, but it measured something else that really governed both of them. Variables, such as academic progress, study skills, academic sophistication, and intelligence, may not only cause students to write well, but may also allow them to be more knowledgeable. So, it may be that it is not the students' prior knowledge that affects their writing, but rather, something else such as the above-mentioned variables. Consequently, we suggest that any subsequent study take into account the effect of those variables on the students' writing performance.

2. Students' native language should be used for testing the students' prior knowledge

As indicated earlier, the students' native language may provide an advantage over their second language in expressing the knowledge they have about the assigned topic. Therefore, we suggest that subsequent studies ask students to express their knowledge in their first language. In this way, a full picture of students' knowledge about the topic will be obtained.
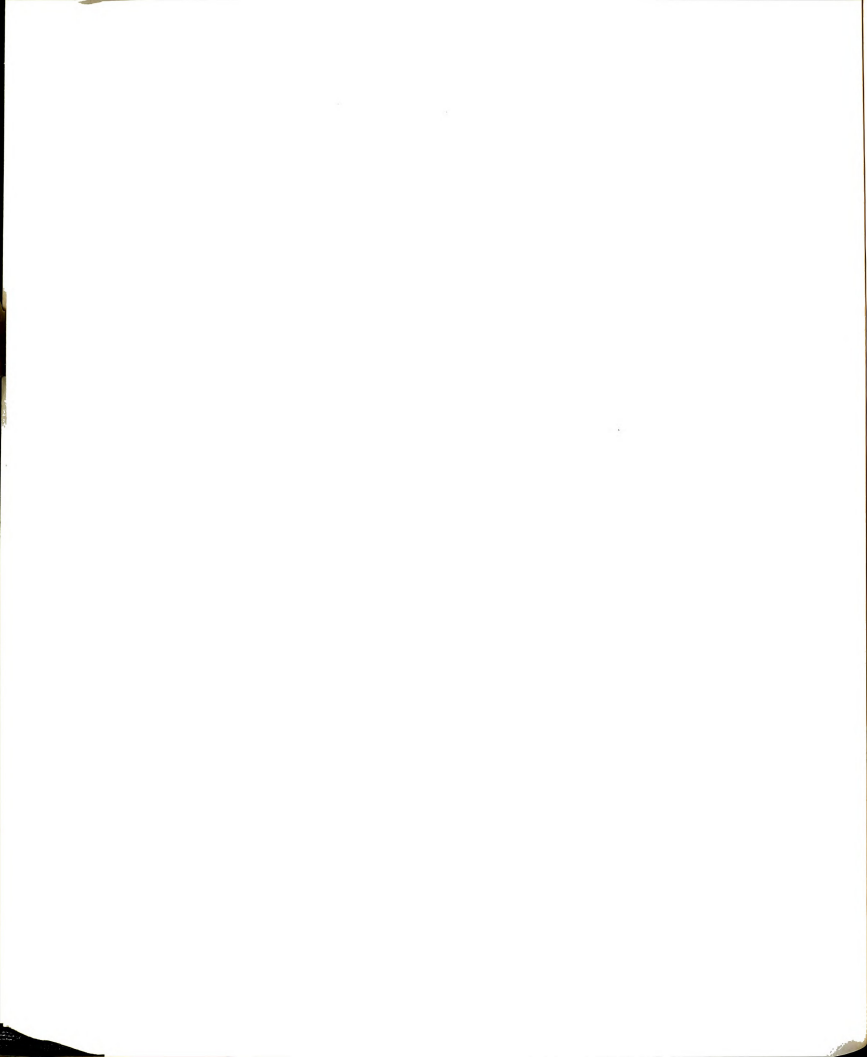
3. Students' linguistic levels should be measured in advance

In this study, we do not know whether the linguistic complexity reflected in the students' compositions was a result of the students' knowledge about the topic or a production of their actual linguistic level. To control this variable, the students' level of linguistic complexity should be tested beforehand. As a result of this testing, a group of students whose proficiency is the same should be chosen as a sample for any subsequent similar studies.

4. To measure revision strategies, a designated time for revisions should be allowed

Students could be given an allotted time for revisions. Most of the students expended the given time to generate meaning, but not to clean up their compositions. We speculate that the lack of relationship between prior knowledge and revision strategies was due to the lack of using time to revise. Whether this is true or not would be proven by asking the same subjects to write a second draft which focuses on clarifying the meaning they have generated in the first draft.
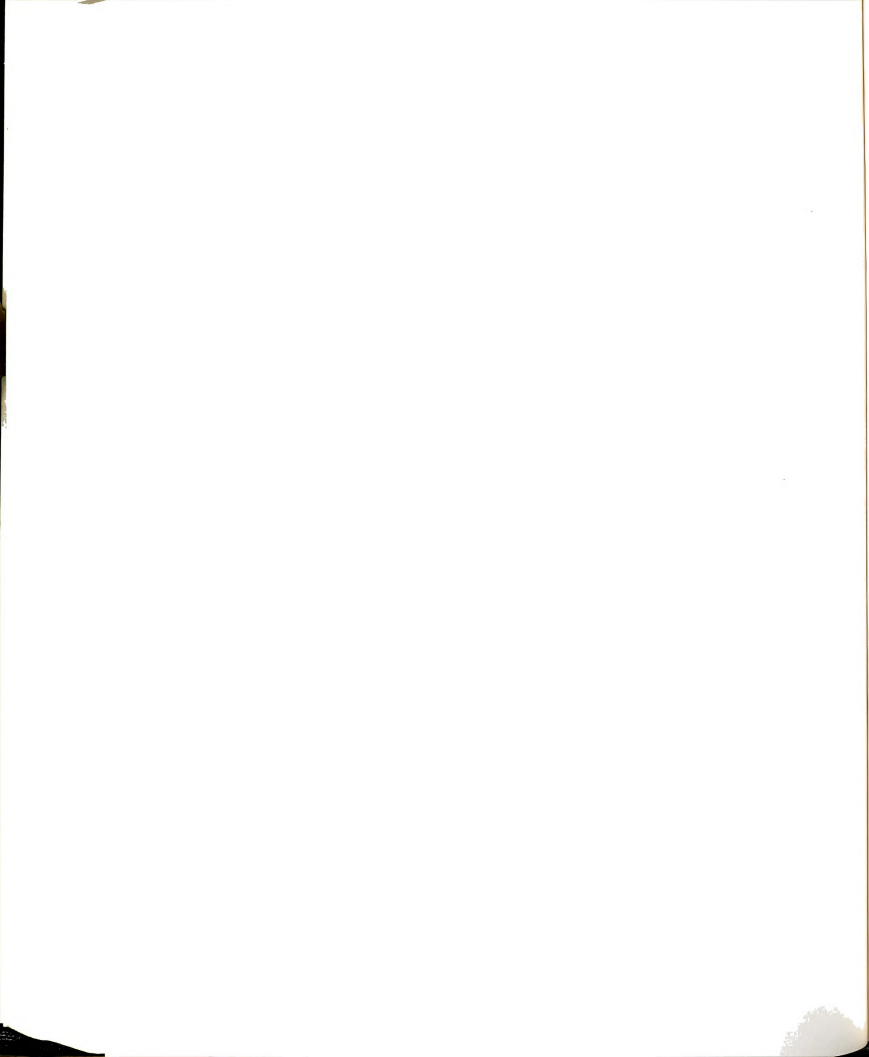
Summary

This chapter has presented a summary of the conclusions of this study, a discussion of the findings, implications of the findings, and suggestions for further studies.

Prior knowledge apparently seems to be related to writing proficiency scores, content length, text sophistication, global coherence, and involvement. T-unit length, amount of subordination, and revision strategies appear to be unrelated to prior knowledge. Overall, language proficiency seems to have a relationship with writing proficiency scores, text sophistication, and linguistic complexity. Content length, global coherence, revision strategies, and involvement were not related to overall language proficiency.

This study is consistent with similar studies in finding that prior knowledge is crucial to writing. Accordingly, we suggest that writing instructors ask their students to write about topics interesting to them and to de-emphasize the teaching of language in writing classes. Further, we suggest that instructors provide jargon and specialized terminology, highlight the issues of the topic, encourage students not to discuss peripheral ideas, and not overstate testing for preparing their students for writing assignments.
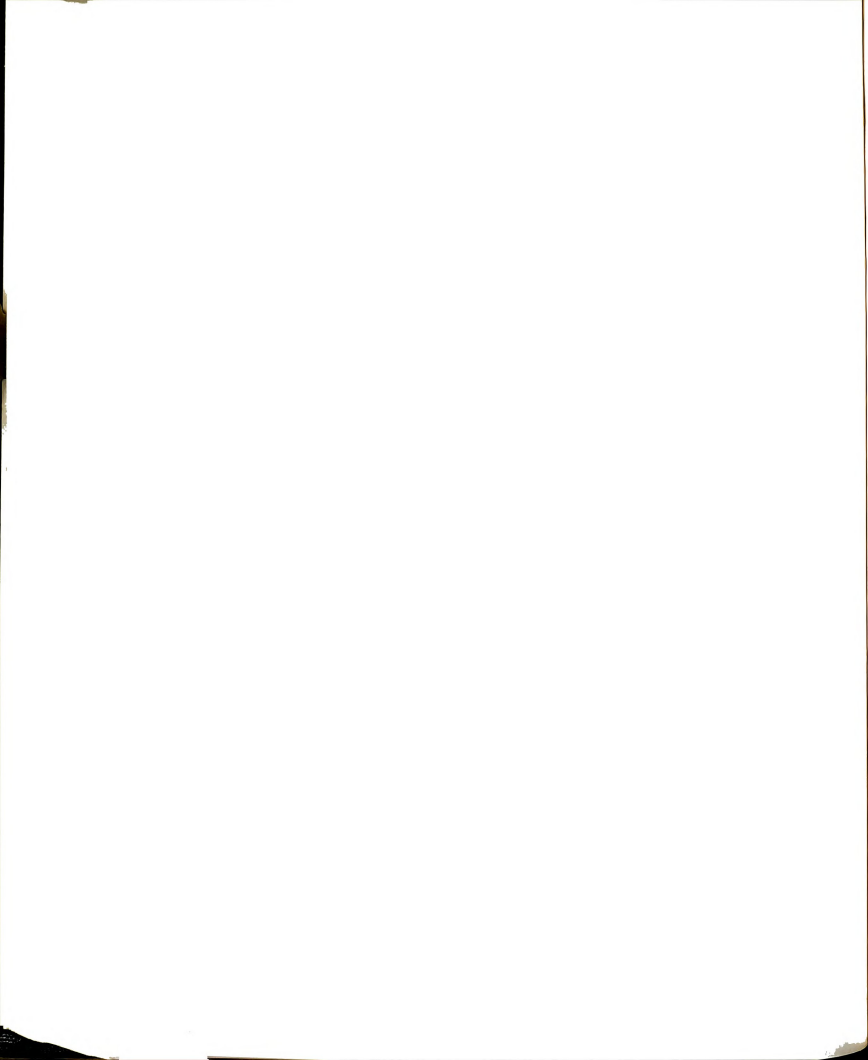
For subsequent research, we suggest the following: first, research should take into account the students' academic progress, study skills, and academic sophistication. Second, they should use the students' native language in testing their prior knowledge. Third, testing the students' linguistic complexity in advance. And finally, since revision strategies cannot be judged from the first draft, students should be asked to write a second draft focusing on revision strategies.
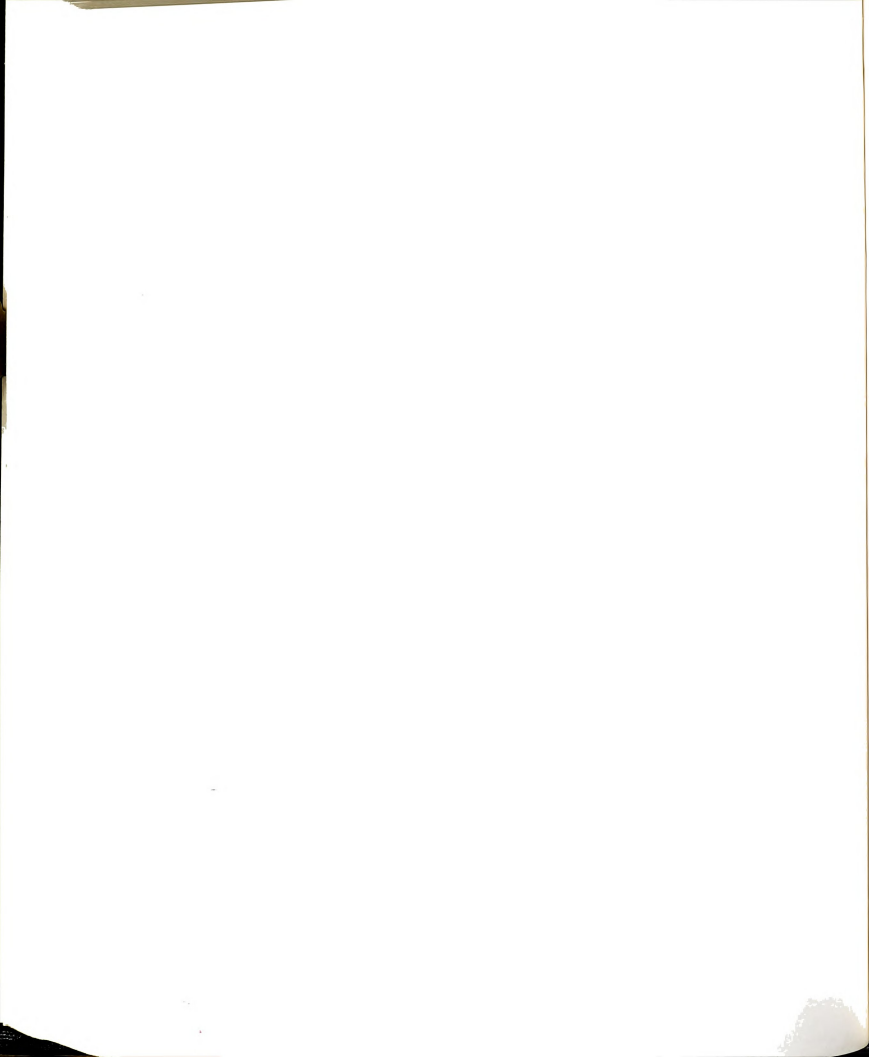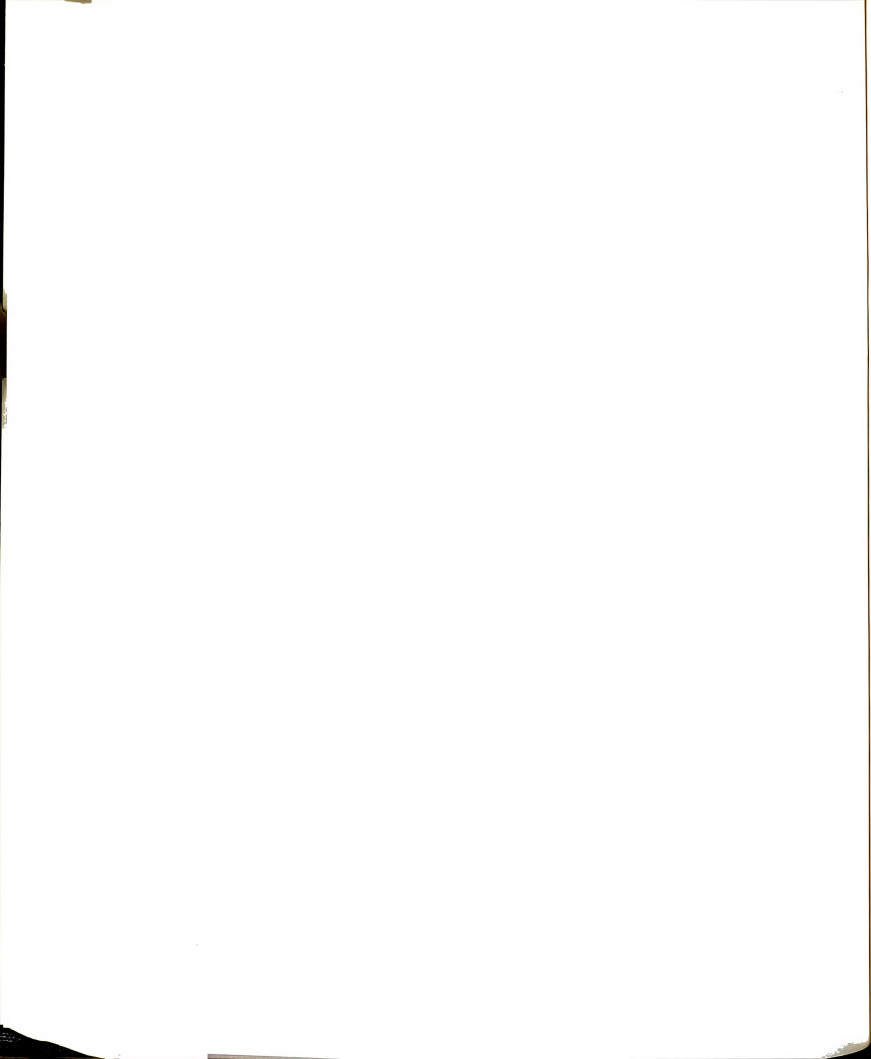
APPENDICES
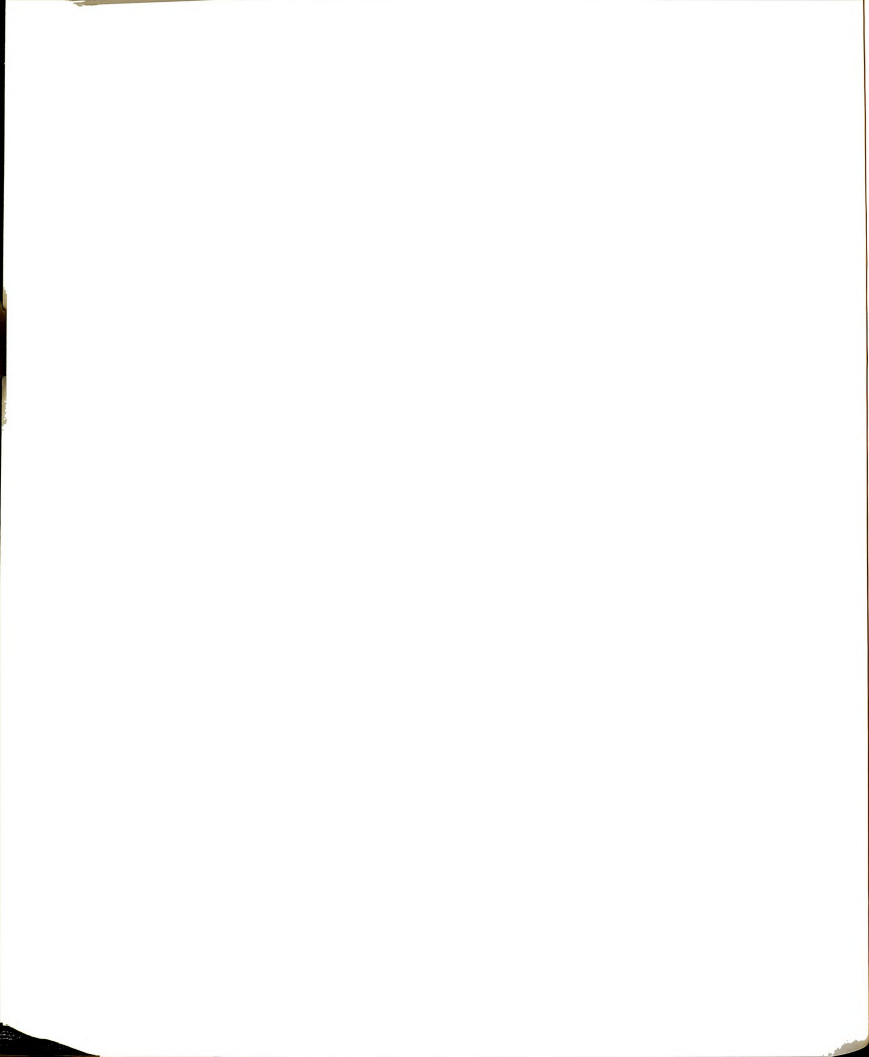
APPENDIX A

MISCELLANEOUS CORRESPONDENCE

April 6, 1988

Dr. James Stalker
English Language Center
Michigan State University
East Lansing, MI 48823

Dear Dr. Stalker:

I am a Ph.D. student in the English Department of Michigan State University, and in the process of conducting research for my dissertation on the effect of nonnative speakers' prior knowledge on their expository writing.

This letter is to request permission to use the English Language Center as a setting for the research. Students in D- and E-levels will be asked to write an essay during one of their regular class periods. They will also be asked to respond to a questionnaire, take tests, and demonstrate their prior knowledge of three topics during two extra special sessions at the ELC.

Taking into account the students' time and effort, an arrangement with their teachers will be sought to make the students' participation consistent with the teachers' endeavors to improve the students' writing.
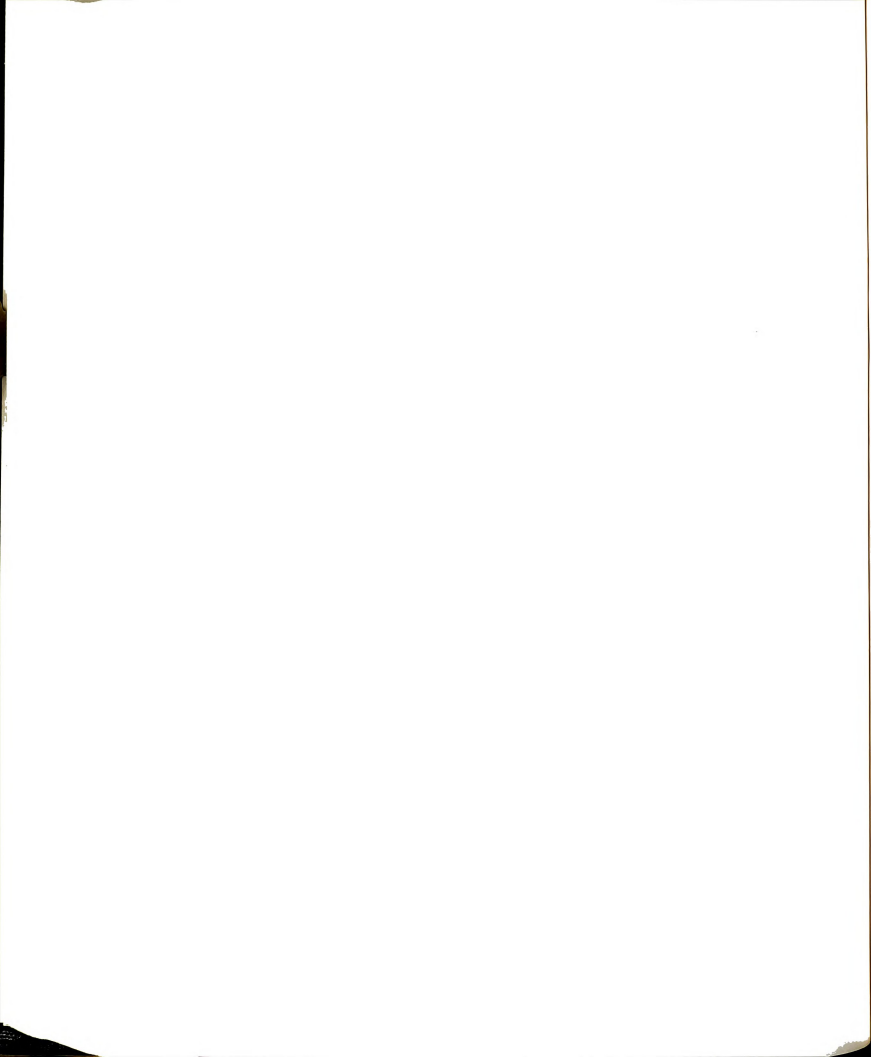
As a result of the students' taking part in this study, they will benefit by getting four extra test scores (which they value), and doing the writing assignment. The study will also contribute to the field of teaching writing, to TESOL, and the program at ELC.

I would also like to request sixty copies of the ELC grammar, vocabulary, and reading sample tests for the purpose of measuring the students' language proficiency.

I appreciate your kind attention to this matter.

Sincerely yours,

Ali S. K. Al-Ghamdi

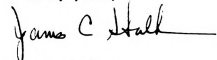# MICHIGAN STATE UNIVERSITY

April 11, 1988

Mr. Ali S. K. Al-Ghamdi
2309 E. Jolly Road
Lansing, MI 48910

Dear Mr. Al-Ghamdi:

Your request to conduct research in the D and E Writing classes at the English
Language Center is hereby granted. I think your research will be of use to our
instructional staff in our continuing curricular considerations, and your
research should improve the quality of instruction for future students.

You may begin your research as soon as we have a copy of your proposal and the
permission of the University Committee on Research on Human Subjects on file.
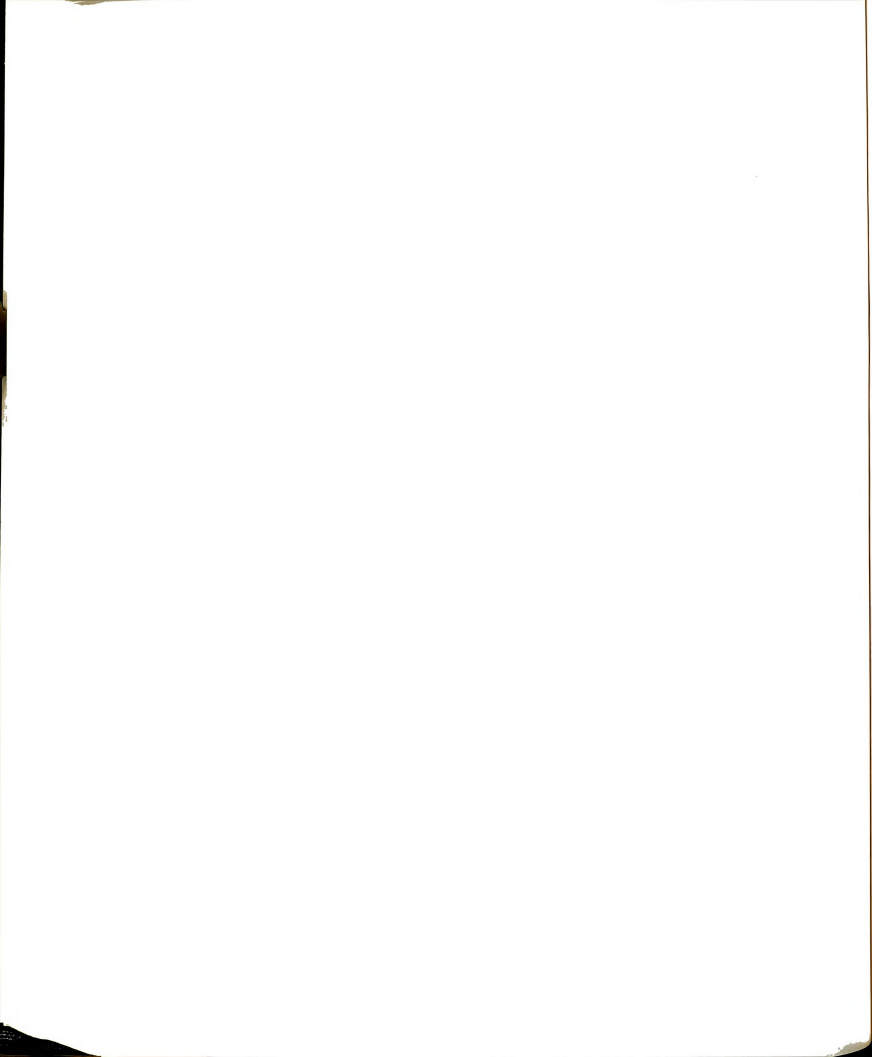
Sincerely yours,

James C. Stalker
Director

JCS:rhc

cc: Dr. Barry Gross, Department of English

April 11, 1988

MEMORANDUM

TO: D and E Writing Teachers: Boyd, Lazarowicz,
             Leonhardt, Milton, Novak, Wolf

FROM: James C. Stalker, Director

RE: Ali Al-Ghamdi's Research

Ali Al-Ghamdi, who is completing his doctorate in the
English Department, has my permission to conduct research
in the writing classes at the ELC. He is currently
awaiting official approval of the University Committee on
Research on Human Subjects. As soon as he receives that,
he will be able to move forward.

He will be coming to you to explain his research and tell
you what help he will need, but essentially he will want
to hand some material out in our class and have our
students do some writing for him during one of your class
periods. He will, of course, schedule his needs around
your requirements. If you have any questions, please see
me.

JCS:rhc

cc: Mr. Ali-Al-Ghamdi
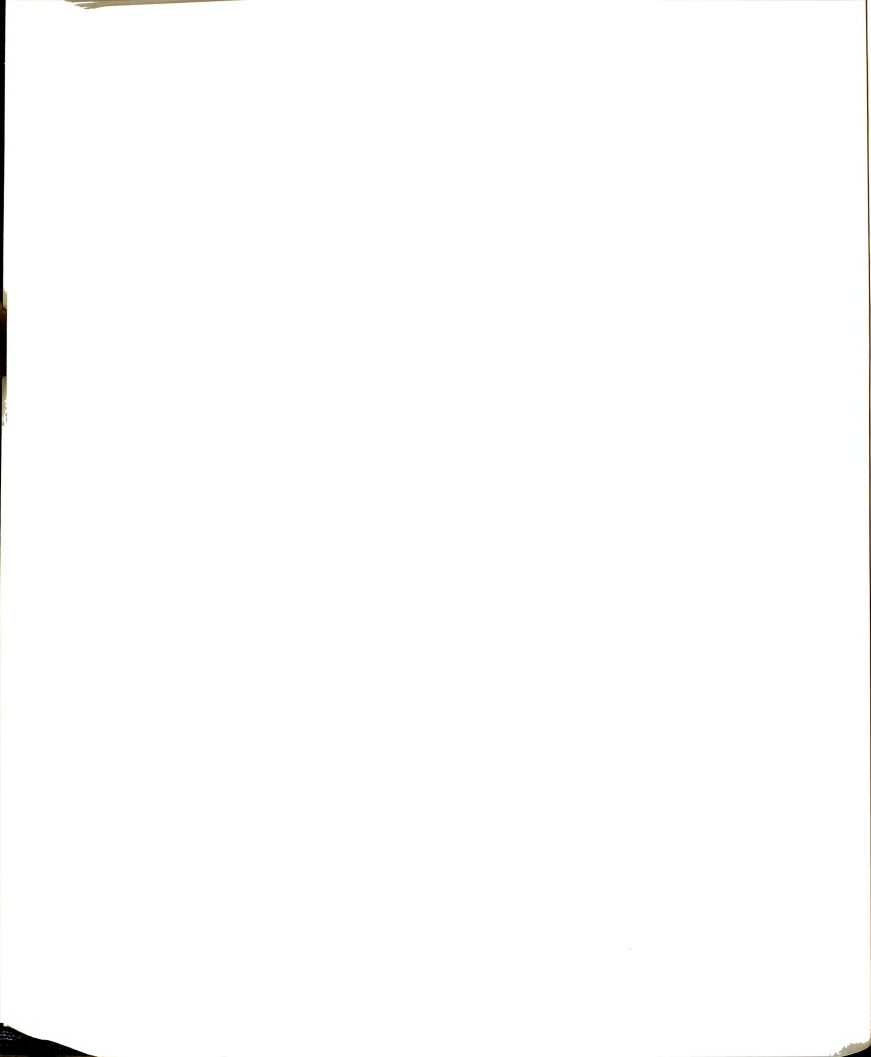
MICHIGAN STATE UNIVERSITY

DEPARTMENT OF ENGLISH
MORRILL HALL

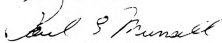EAST LANSING • MICHIGAN • 48824-1036

April 6, 1988

John Hudzik, Chair
UCRIHS
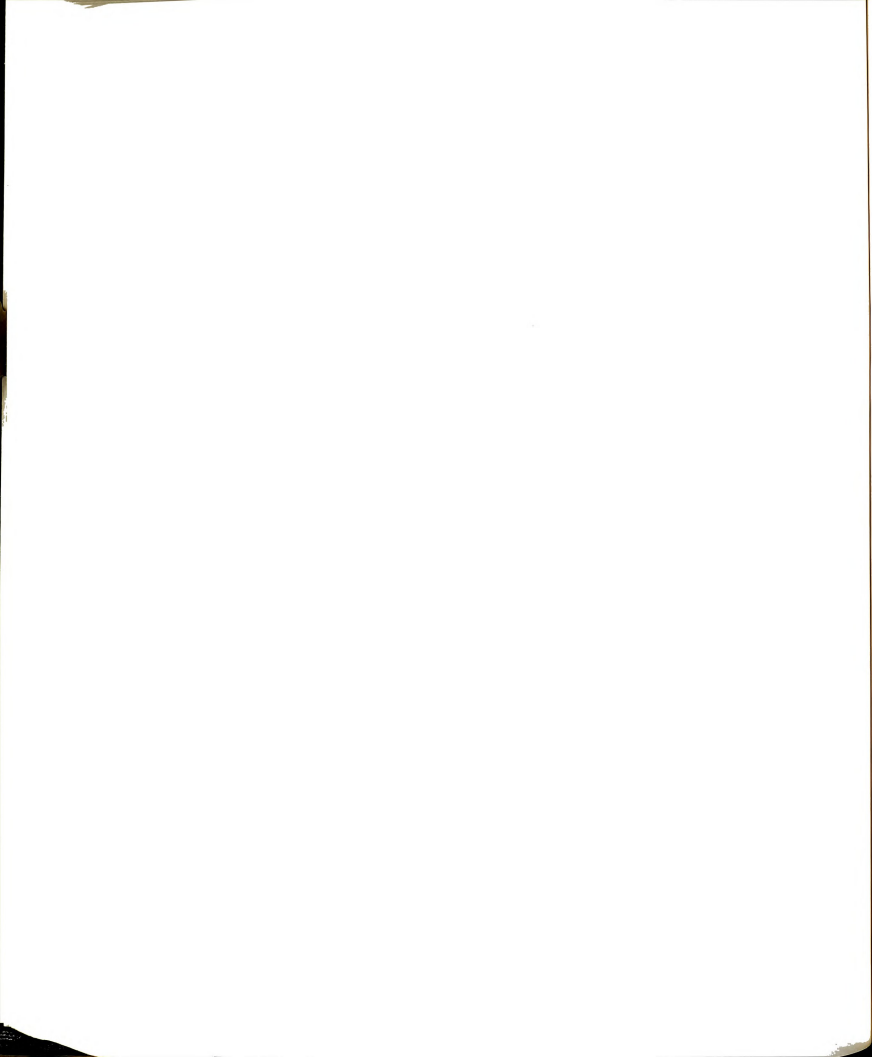206 Berkey

Dear Dr. Hudzik:

Attached is the documentation requested and a full copy of Ali S.K. Al-Ghamdi's research proposal which has been approved by his Guidance Committee.

We request exemption from full committee review on the basis of 1C, page 133 of UCRIHS guidelines. We appreciate your kind attention to this matter as soon as possible.

Sincerely yours,

Paul E. Munsell
Associate Professor

PEM:lfh
Enclosure

MICHIGAN STATE UNIVERSITY

April 20, 1988

Ali S.K. Al-Ghamdi
Dept. of English
Morrill Hall

Dear Mr. Al-Ghamdi:

      Subject: "THE EFFECT OF PRIOR KNOWLEDTGE ON NON-NATIVE
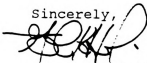   SPEAKERS EXPOSITORY WRITING #88-120"

The above project is exempt from full UCRIHS review. I have reviewed
this project and approval is granted for conduct of this project.

You are reminded that UCRIHS approval is valid for one calendar year.
If you plan to continue this project beyond one year, please make
provisions for obtaining appropriate UCRIHS approval prior to April
20, 1989.

Any changes in procedures involving human subjects must be reviewed by
the UCRIHS prior to initiation of the change. UCRIHS must also be
notified promptly of any problems (unexpected side effects,
complaints, etc.) involving human subjects during the course of the
work.

Thank you for bringing this project to our attention. If we can be of
any future help, please do not hesitate to let us know.
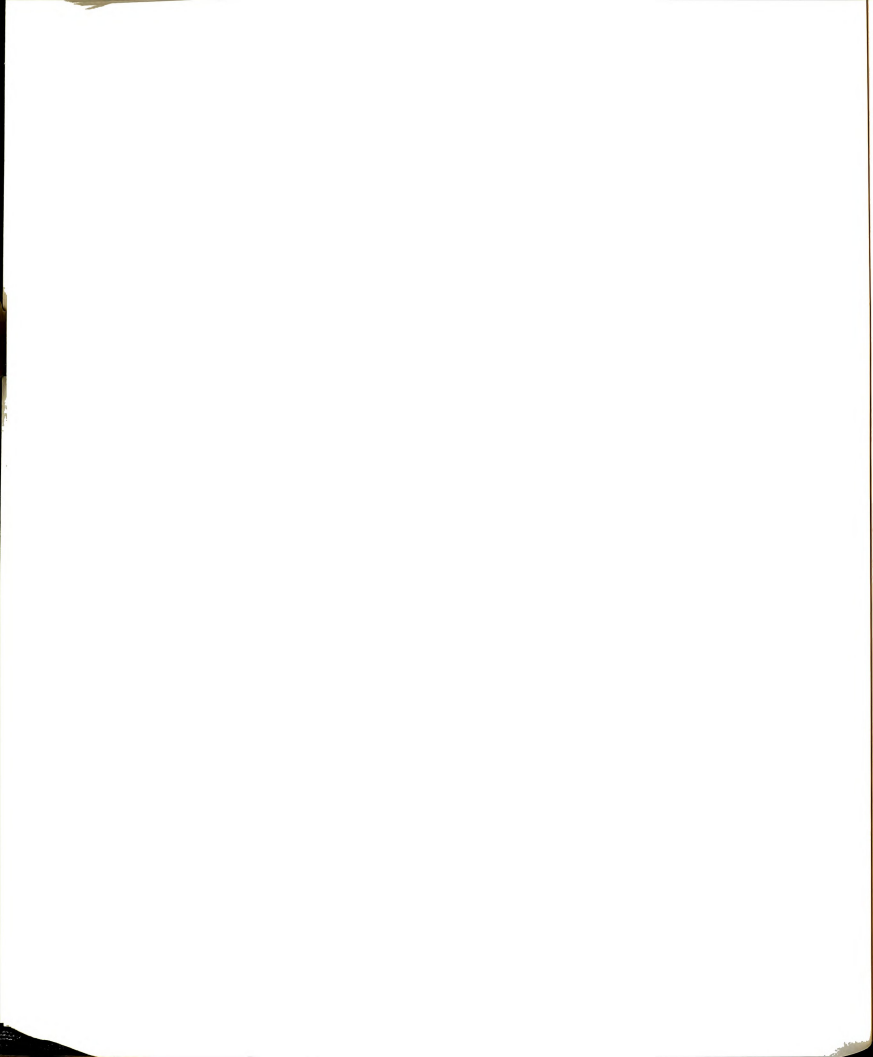
Sincerely,

John K. Hudzik, Ph.D.
Chair, UCRIHS

JKH/sar

cc: P. Munsell

Dear Participant:

I am a Ph.D. student in the English Department at Michigan State University. I am conducting research for my dissertation on nonnative writing.

Your participation is highly important to the completion of the study, and will also assist you in improving your writing. You will write one essay and respond to a questionnaire and to three short probes of your knowledge. In addition, and as a benefit to you, you will also take three English Language Center (ELC) type tests and get the results. You will also get an ELC-type score for your essays.

Your responses will be completely confidential; please do not write your name anywhere on your questionnaire, essays, or tests. Participation in the study is voluntary; without penalty, you may choose not to answer certain questions, or not to participate at all.

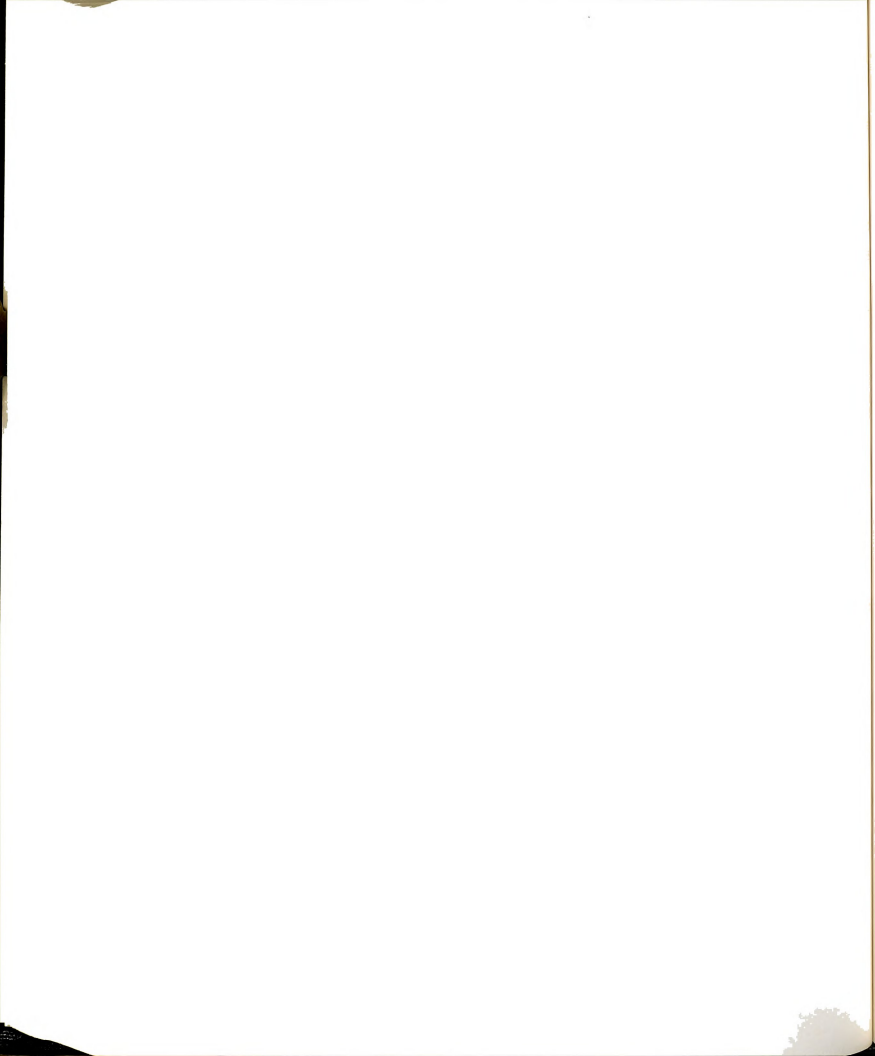Thank you very much for your time and effort in helping me complete this study.

Sincerely,

Ali S. K. Al-Ghamdi
Ph.D. Candidate
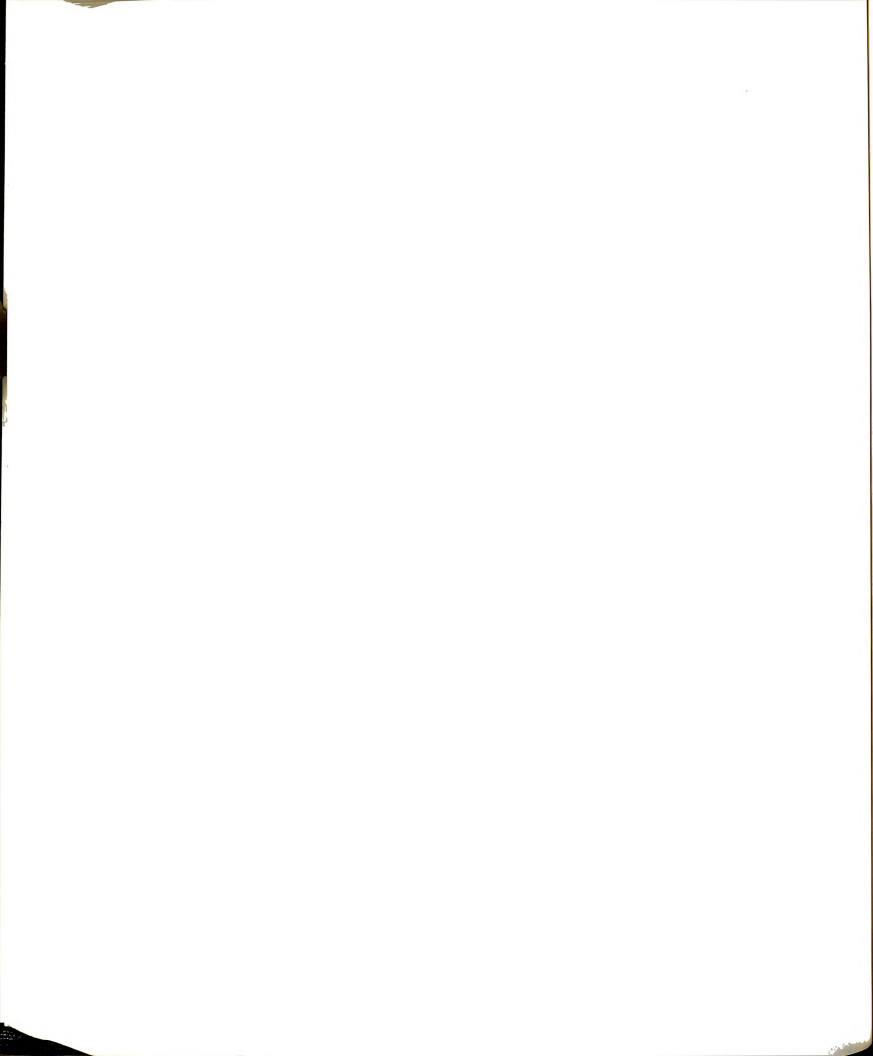
APPENDIX B

BACKGROUND INFORMATION QUESTIONNAIRE

Rater No. 1 (   )   Rater No. 2 (   )   Rater No. 3 (   )
Student :

I   - Demographic Items:

1   - Your Age:

        (   ) less than 20 years
        (   ) 20-24 years
        (   ) 25-29 years
        (   ) 30-34 years
        (   ) 35-39 years
        (   ) 40-44 years
        (   ) 45-49 years
        (   ) 50 years or above

2   - Please indicate your level of education you have
      completed:

        (   ) High school
        (   ) College
        (   ) Master's degree
        (   ) Other (please specify _____)

3   - Gender:
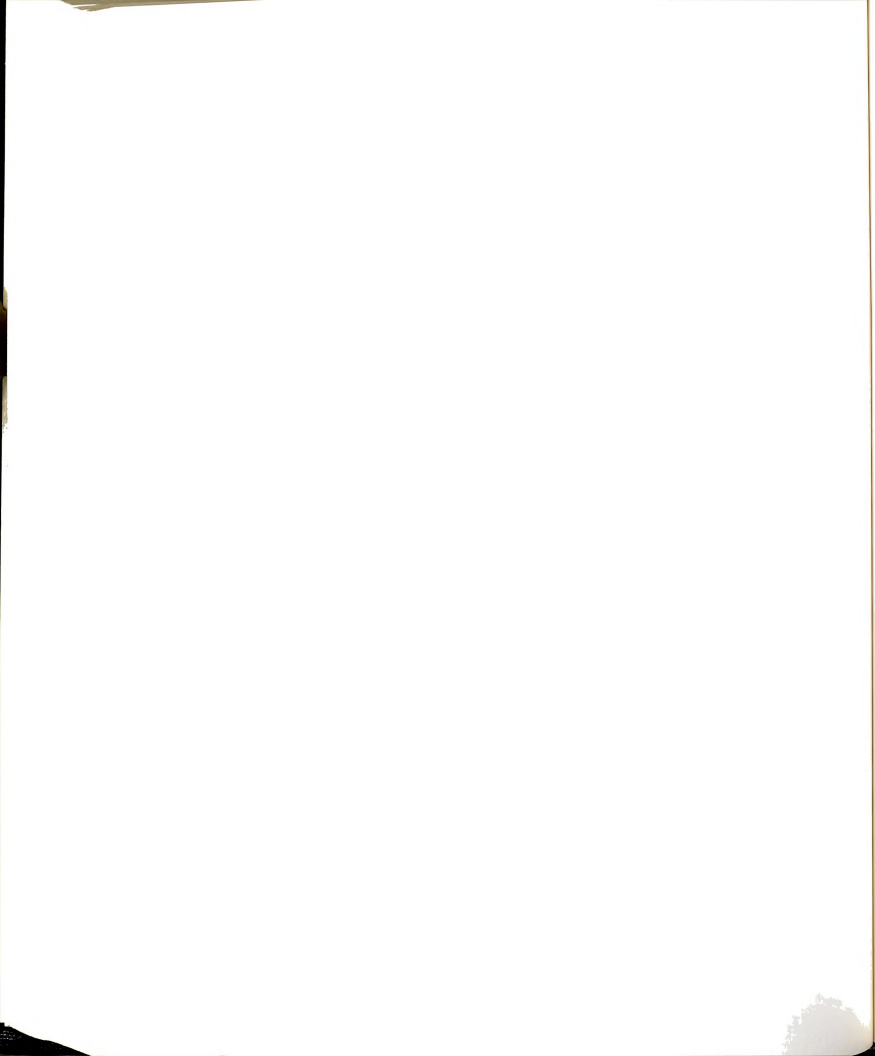
        (   ) Male
        (   ) Female

4   - As well as I recall, my average in the last ELC
      tests was _____.

5   - My native language is _____.
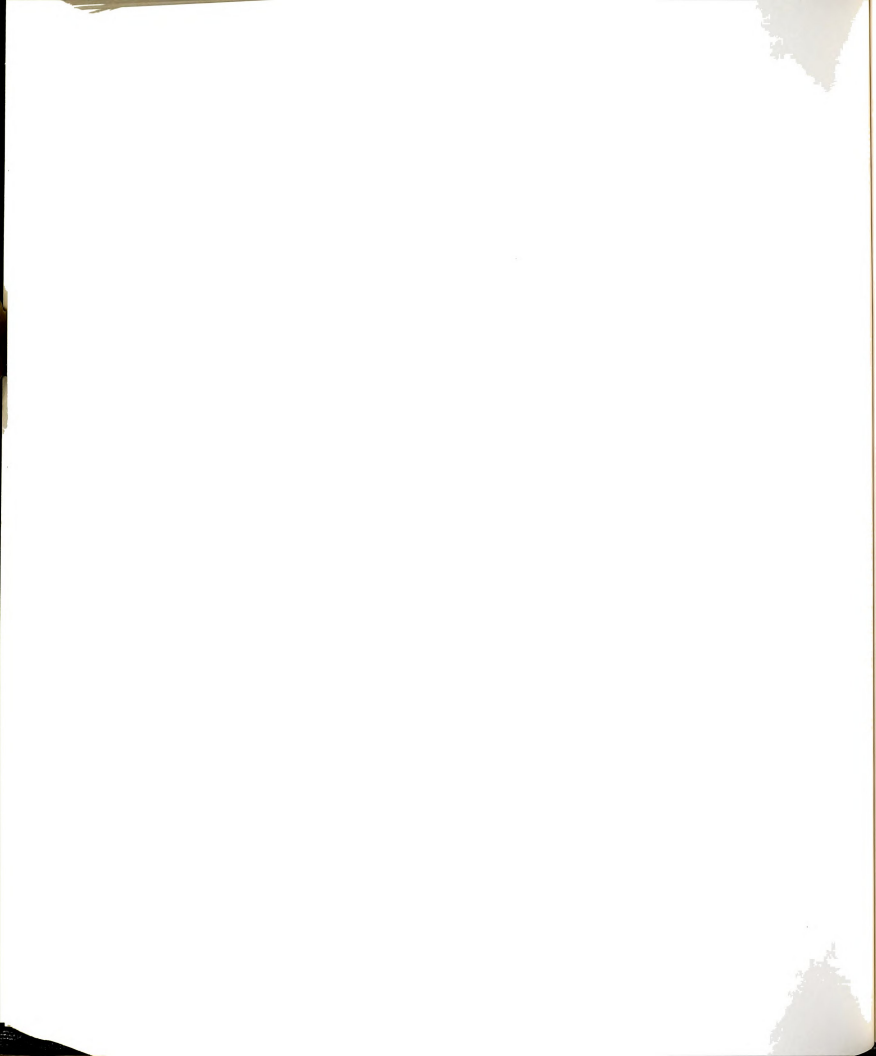
6   - How much reading do you do?

        (   ) I do very much reading
        (   ) I do much reading
        (   ) I do little reading
        (   ) I do no reading at all

APPENDIX C

WORD ASSOCIATION/PRIOR KNOWLEDGE TEST

II - PRIOR KNOWLEDGE:

TOPIC NO. 1, **Photography**:

The following words/phrases represent the central ideas of the topic, photography

Please write what you know about these words/ phrases. The examples below illustrate how you should respond to these words/phrases.. (Remember that you will not be identified nor will you receive any grade for doing this exercise.)

Example 1, **Trees**:

Prompt No. 1, **Evergreen trees**:

Associations for the phrase "evergreen trees":

-- The trees that do not lose their leaves in fall, but remain green all winter.
-- The trees with slender and sharp-pointed leaves.
-- The trees with leaves that stay on the trees for several years before dying
-- Trees that do not change colors.
-- Trees with short branches at the top, and long branches at the bottom.
-- Come from cold weather places.
-- Protect themselves from freezing weather and winter storms.

Examples 2, **Weather**:

Prompt No. 1, **Summer season**:

I will write the phrase "**Summer season**" on the board, and we will practice together writing associations. Think about what you know about "Summer season" and raise your hand if you have something to say. This exercise is to make sure that you understand how you should write associations.

-
-
-

-
=
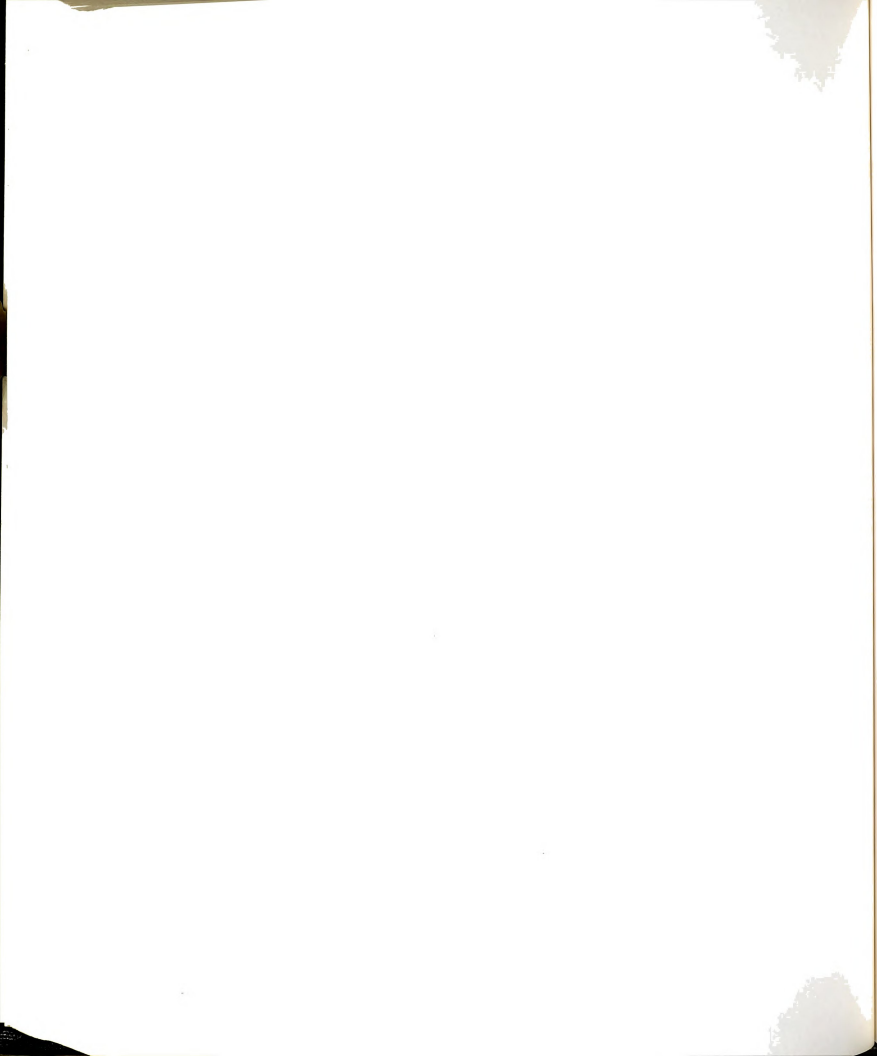
Now, start writing associations to the following prompts
of the topic **Photography.**

Prompt No. 1, **Camera:**
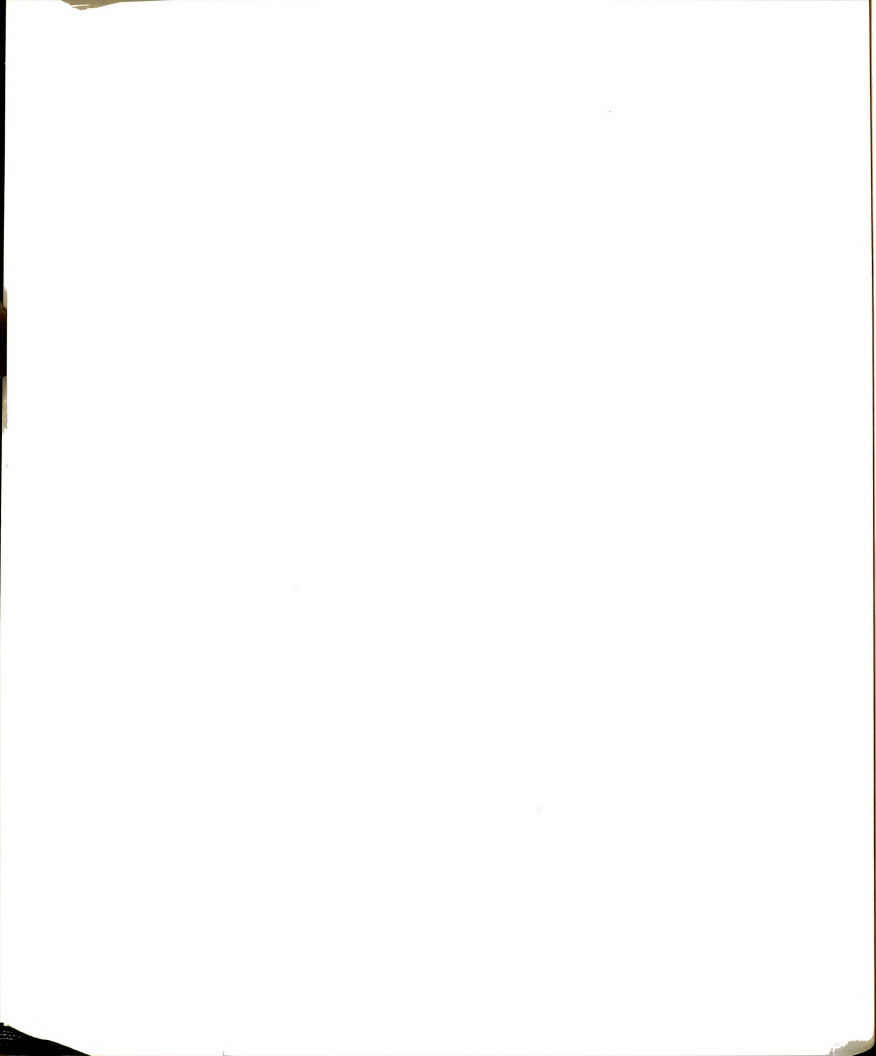
Prompt No. 3, **Negatives**:

Prompt NO. 4, **Focusing**:
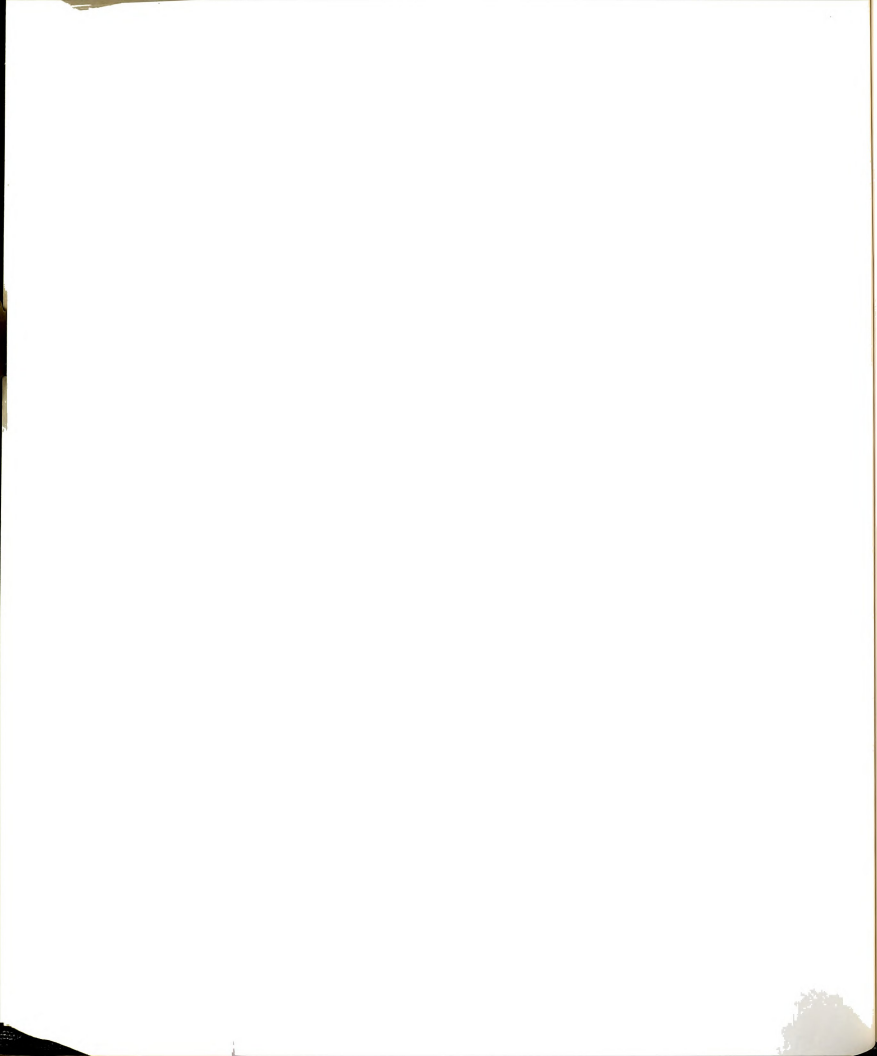
Prompt No. 5, **Flash:**
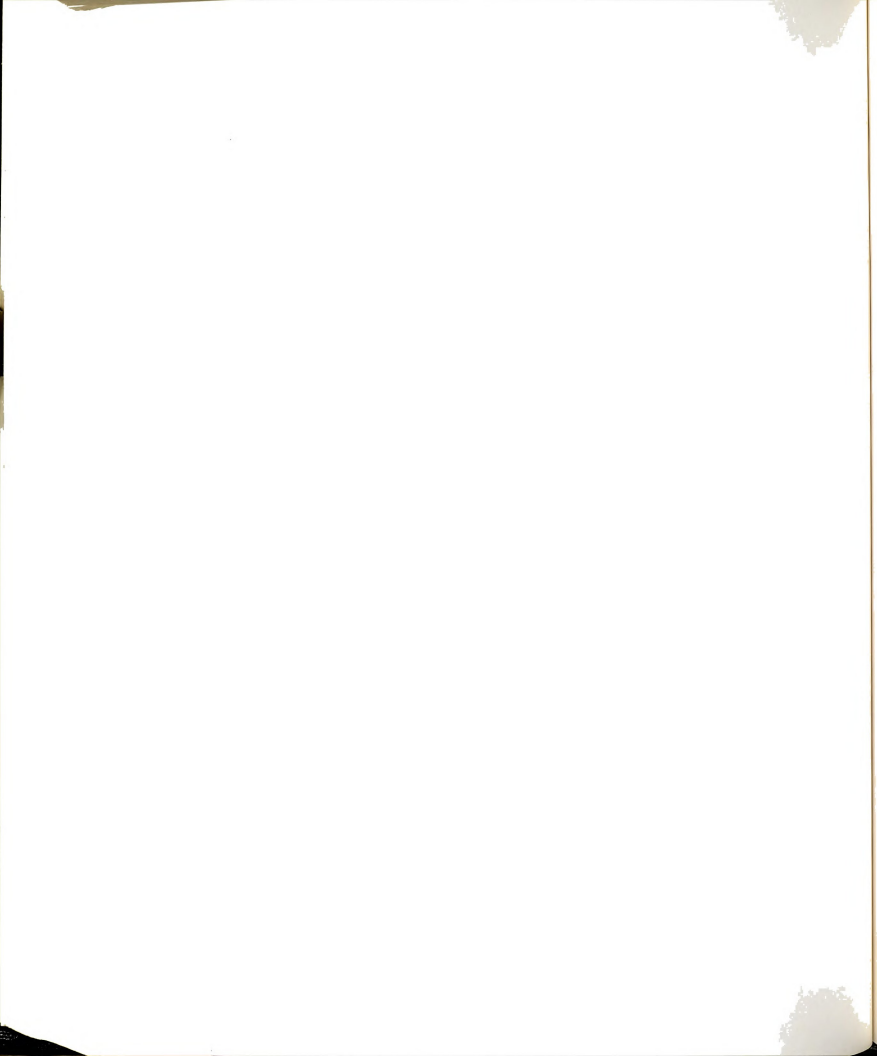
Topic No. 2, **Underwater Diving:**

The following words/phrases represent the central ideas of the topic, **underwater diving:**

Prompt NO. 1, **Skin diving:**

Prompt No. 2, **Scuba Diving"**
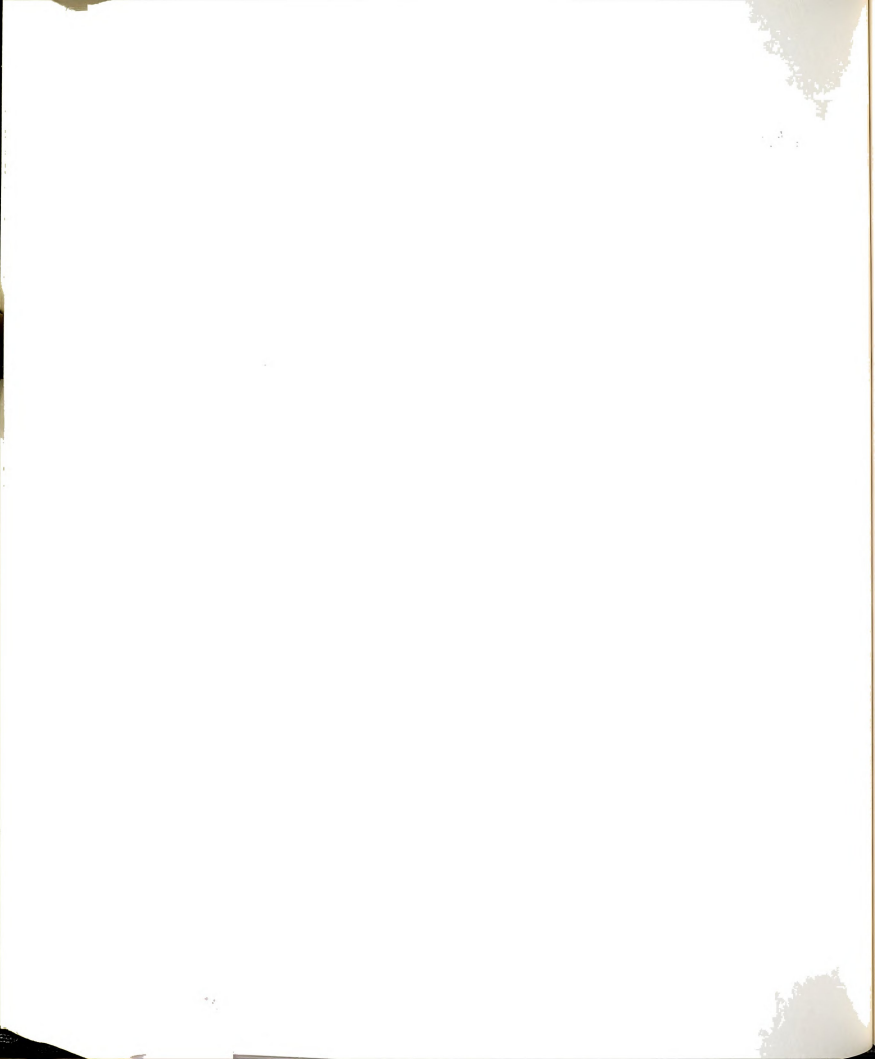
Prompt No. 3, **Underwater Swimming**:

Prompt No. 4, **Diving Equipment**:
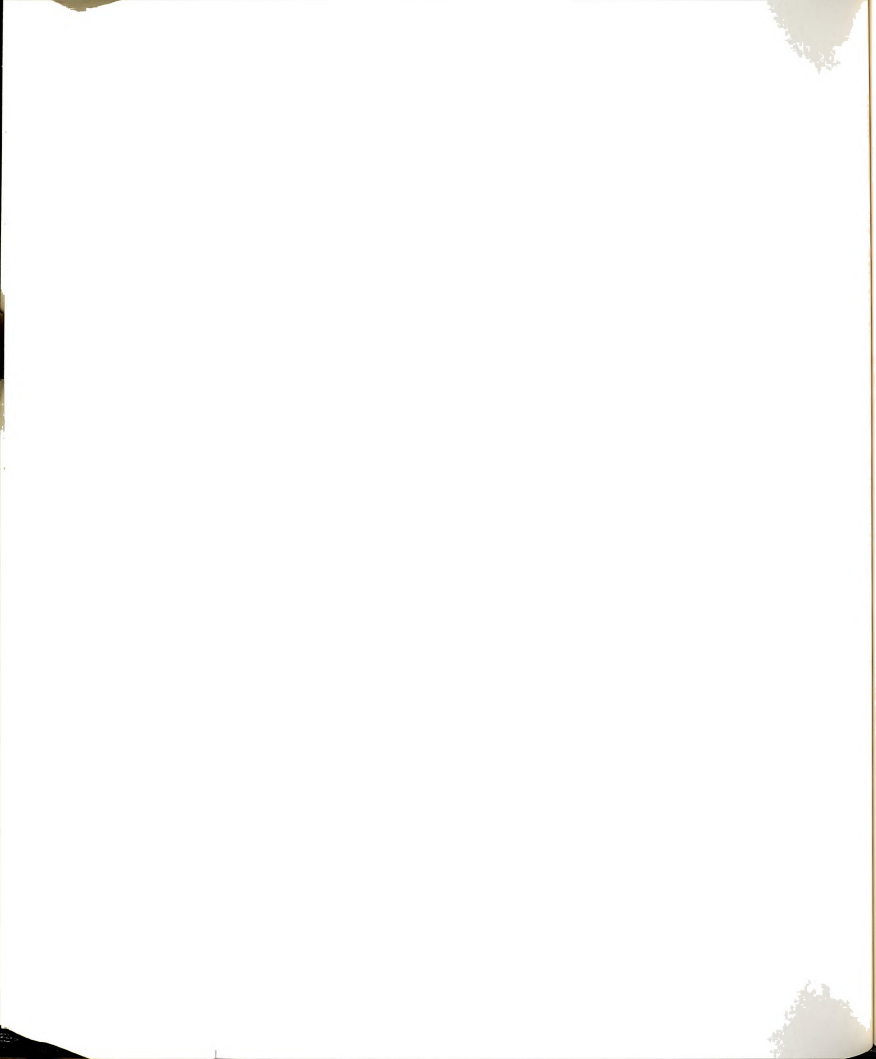
Prompt No. 5, **Oceanography**:
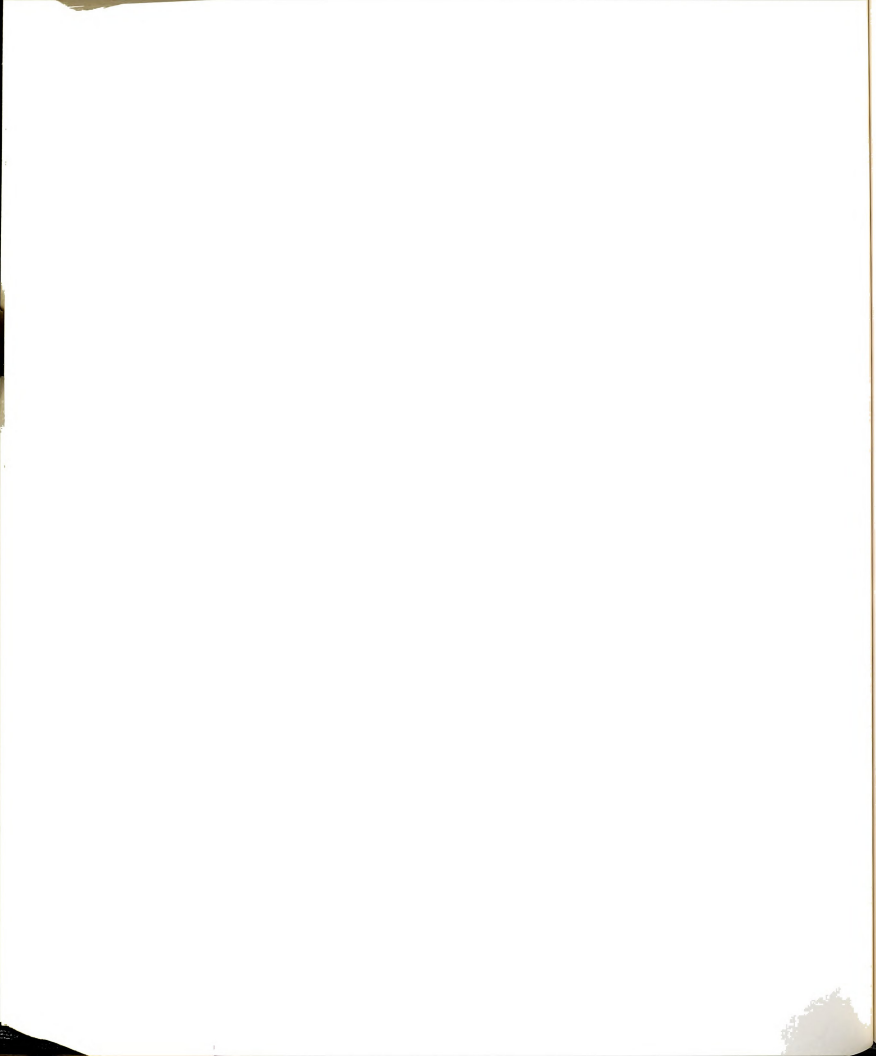
Topic No. 3, **Eclipses**:

The following words/phrases represent the central idea of the topic, **Eclipses**.

Prompt No. 2, **Shadow of Eclipses**:

Prompt No. 2, **Solar Eclipses**:
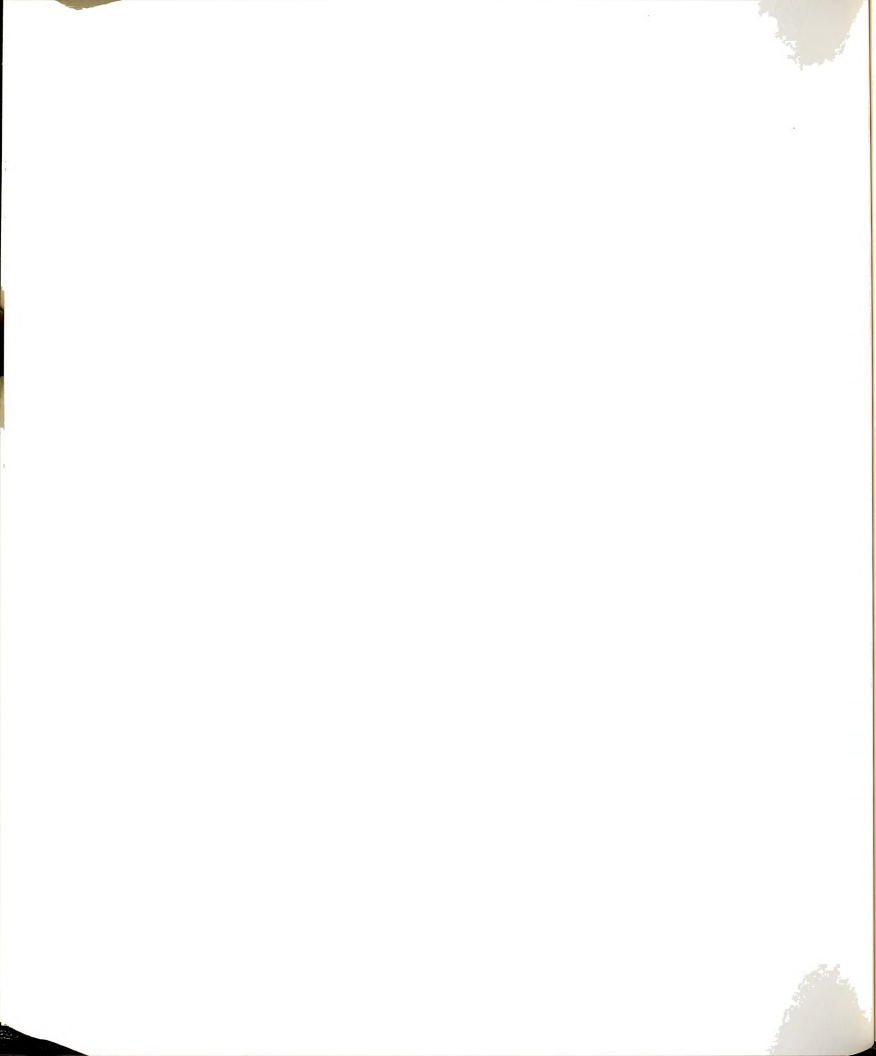
Prompt No. 3, **Lunar Eclipses**:

Prompt No. 4, **Astronomers**:
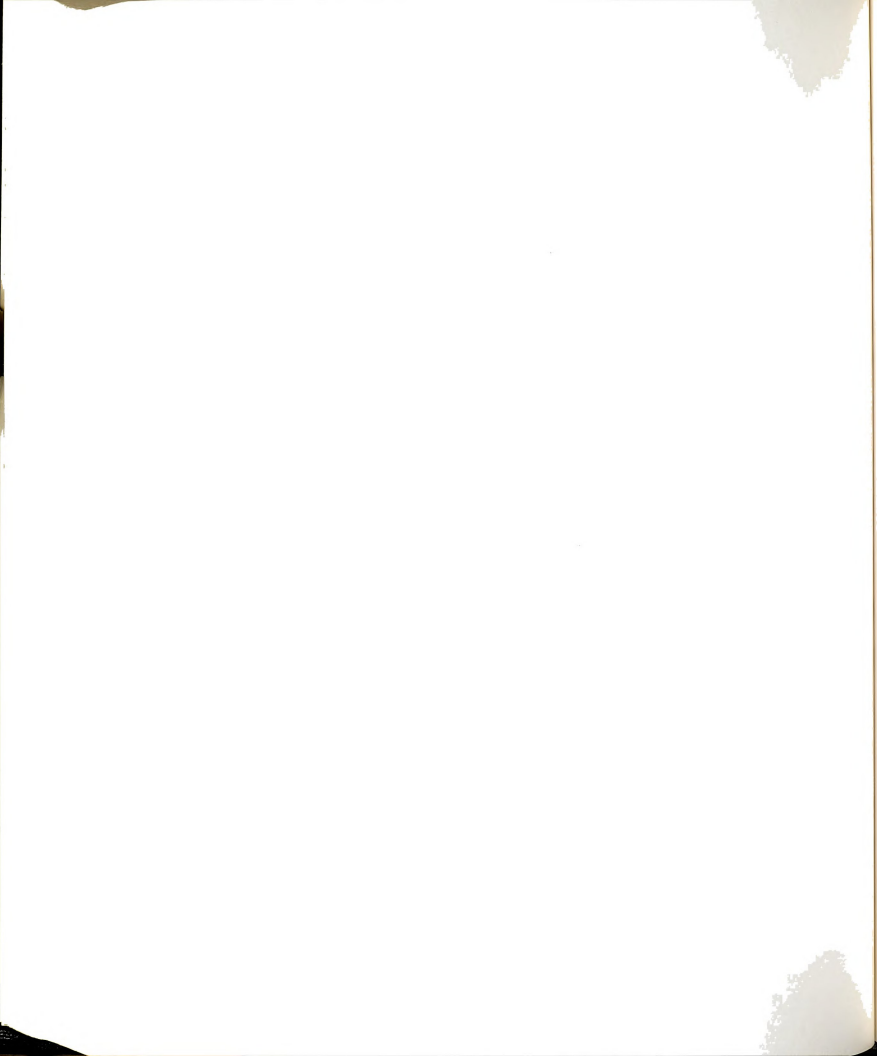
Prompt No. 5, **Eclipses Prediction:**
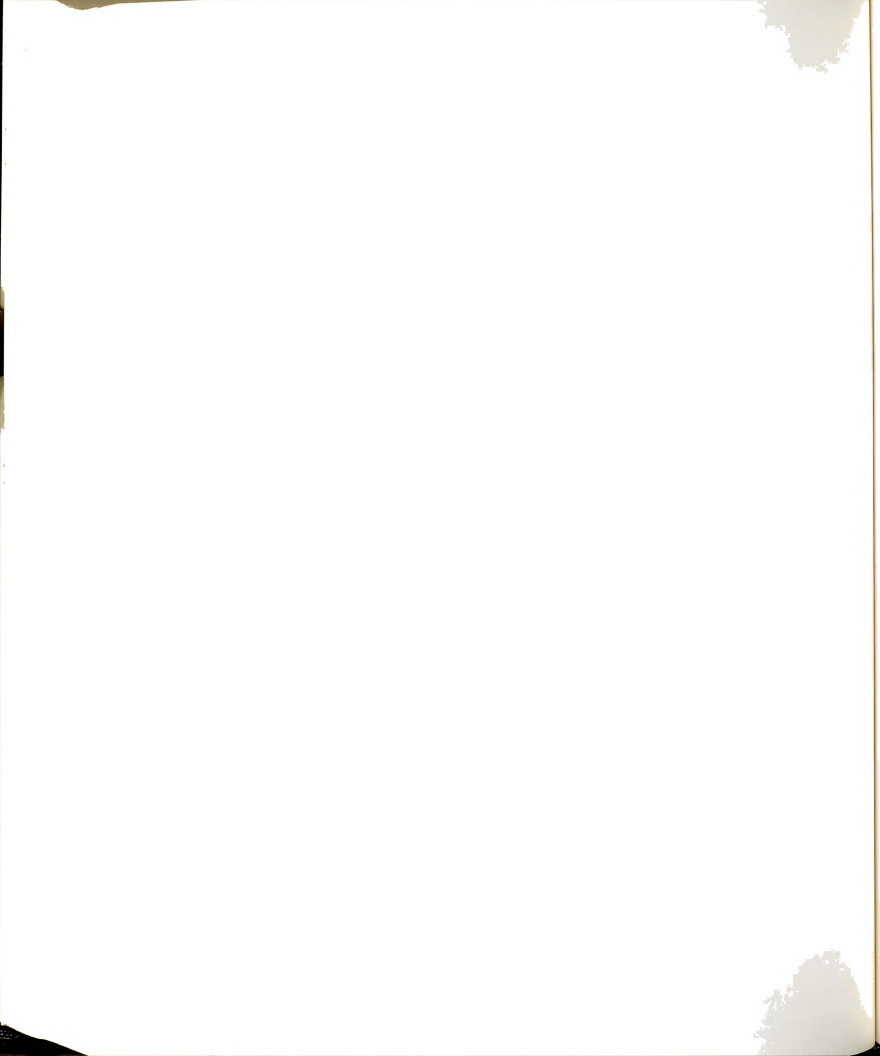
APPENDIX D

SCORING THE PROMPTS
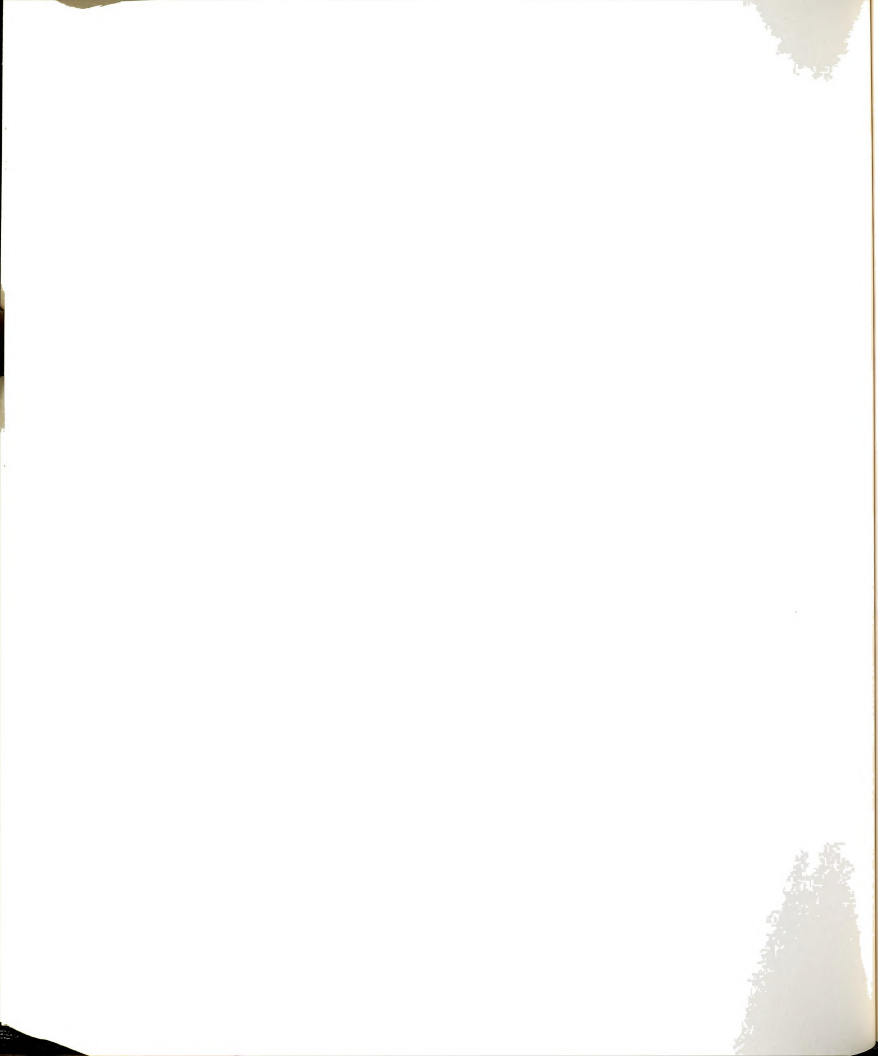
Rater #: _____.
Student: _____.   Topic No. 1

III - Scoring the prompts:

A   - Fluency:

    (   ) high fluency
    (   ) moderate fluency
    (   ) low fluency

B   - Organization:

    Write scores for all the prompts:
    (   ) (   ) (   ) (   ) (   )

    Total   =
    Average =

    (   ) High Organized
    (   ) Partially organized
    (   ) Diffusely organized

C   - Combination:

    Average of the scores of high organized and
    partially organized

    (   ) Highly combined
    (   ) Moderately combined
    (   ) Low

Rater #: _____.   Topic No. 2
Student: _____.

III - Scoring the prompts:

A   - Fluency:

        (   ) High fluency
        (   ) Moderate fluency
        (   ) Low fluency

B   - Organization:

        Write scores for all the prompts:
        (   ) (   ) (   ) (   ) (   )

        Total   =
        Average =

        (   ) Highly organized
        (   ) Partially organized
        (   ) Diffusely organized

C   - Average of the scores of high organized and
        partially organized

        (   ) Highly combined
        (   ) Moderately combined
        (   ) Low

Rater #: _____.

Student: _____:

Topic No. 3

III - Scoring the prompts:

A - Fluency:

     (   ) High fluency
     (   ) Moderate fluency
     (   ) Low fluency

B - Organization:

     Write scores for all the prompts:
     (   ) (   ) (   ) (   ) (   )

     Total   =
     Average =

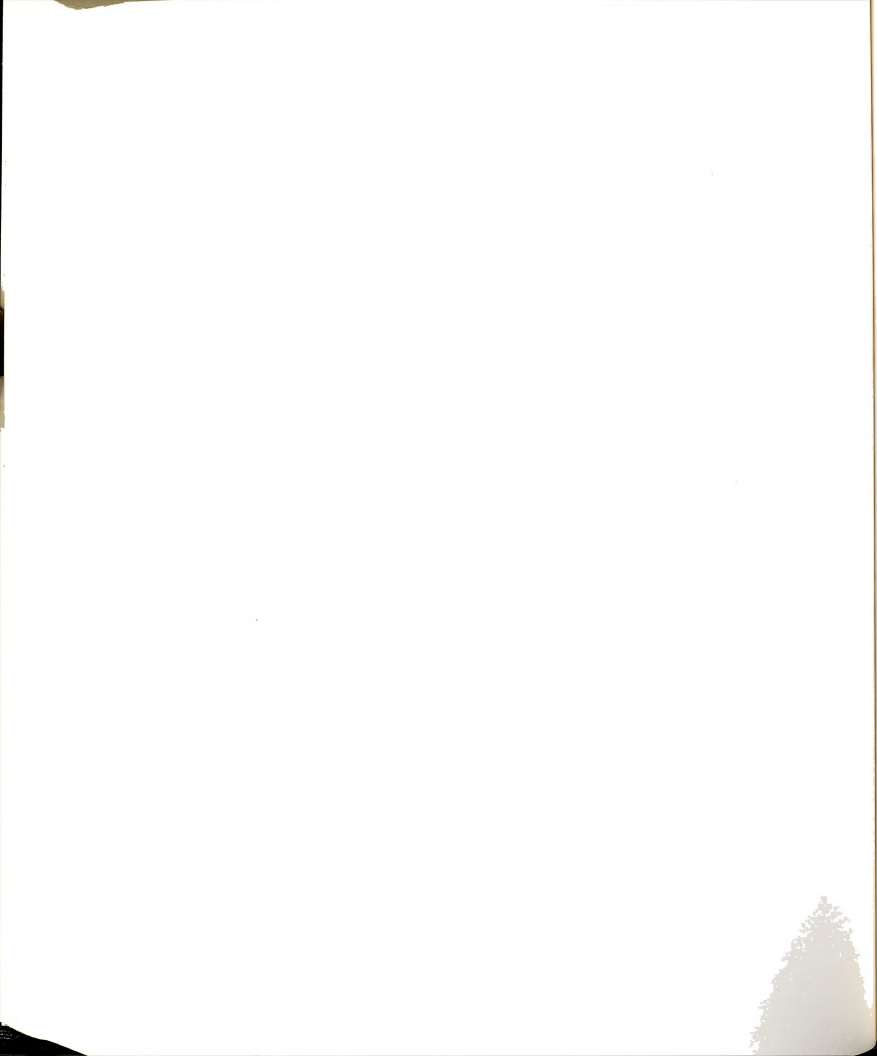   (   ) Highly organized
     (   ) Partially organized
     (   ) Diffusely organized

C - Average of the scores of high organized and
     partially organized

     (   ) Highly combined
     (   ) Moderately combined
     (   ) Low
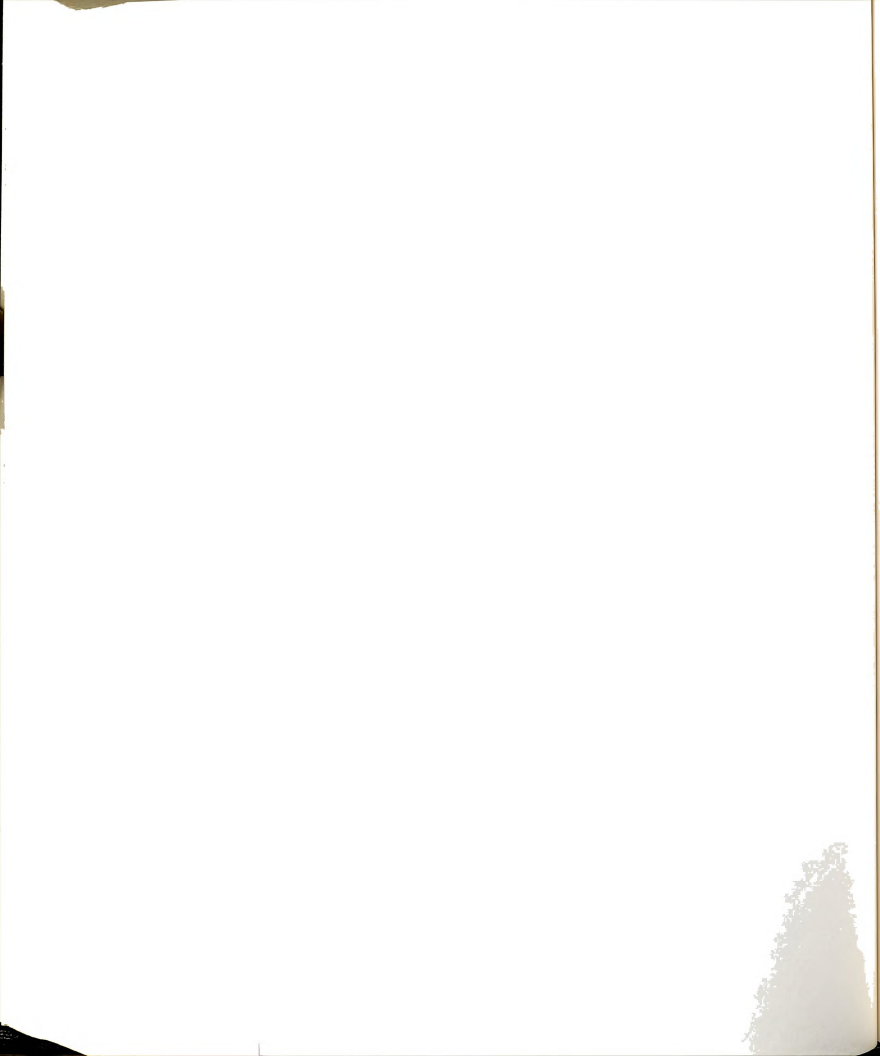
APPENDIX E

THE WRITING TASK AND

THE INVOLVEMENT QUESTIONNAIRE
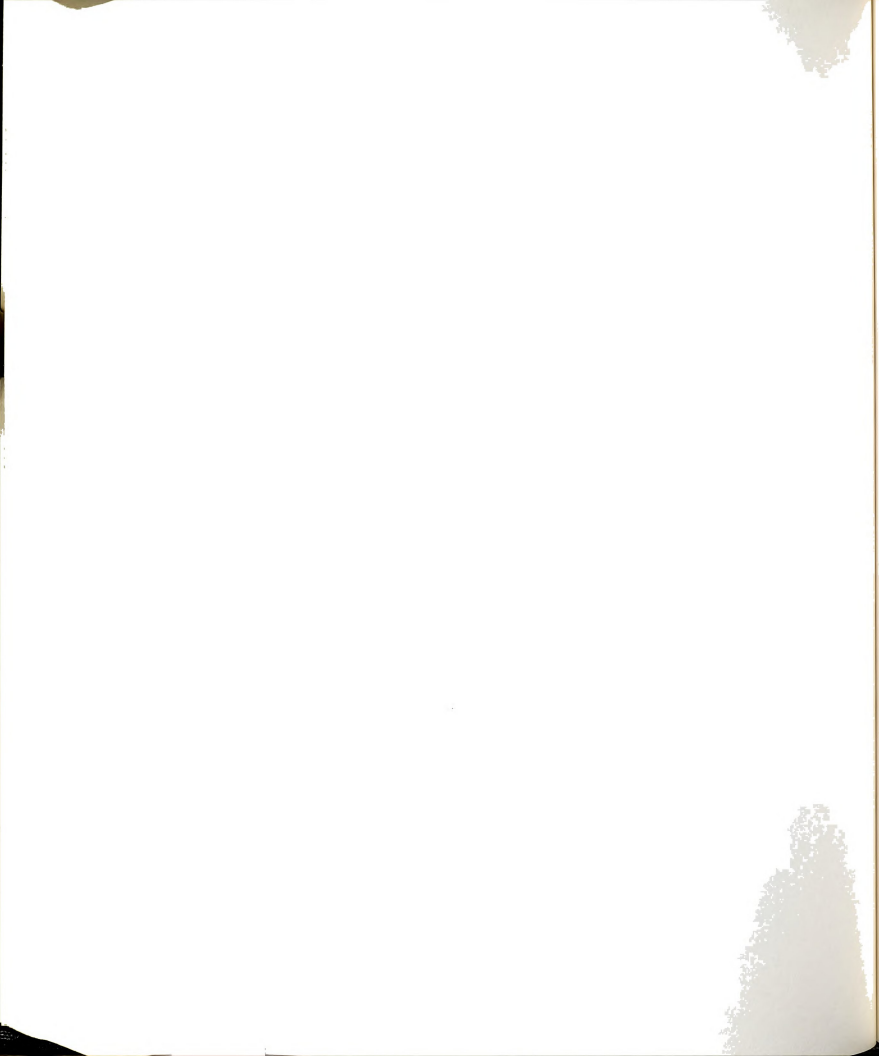
Rater No. 1 (   )   Rater No. 2 (   )   Rater No. 3 (   )

IV - Writing the essay:

>   You have forty-five minutes to write about the topic: <u>Eclipses</u>
>   You should assume that you will be writing this essay for well-educated readers. You can write as much as you can. (Please use pens for writing.)
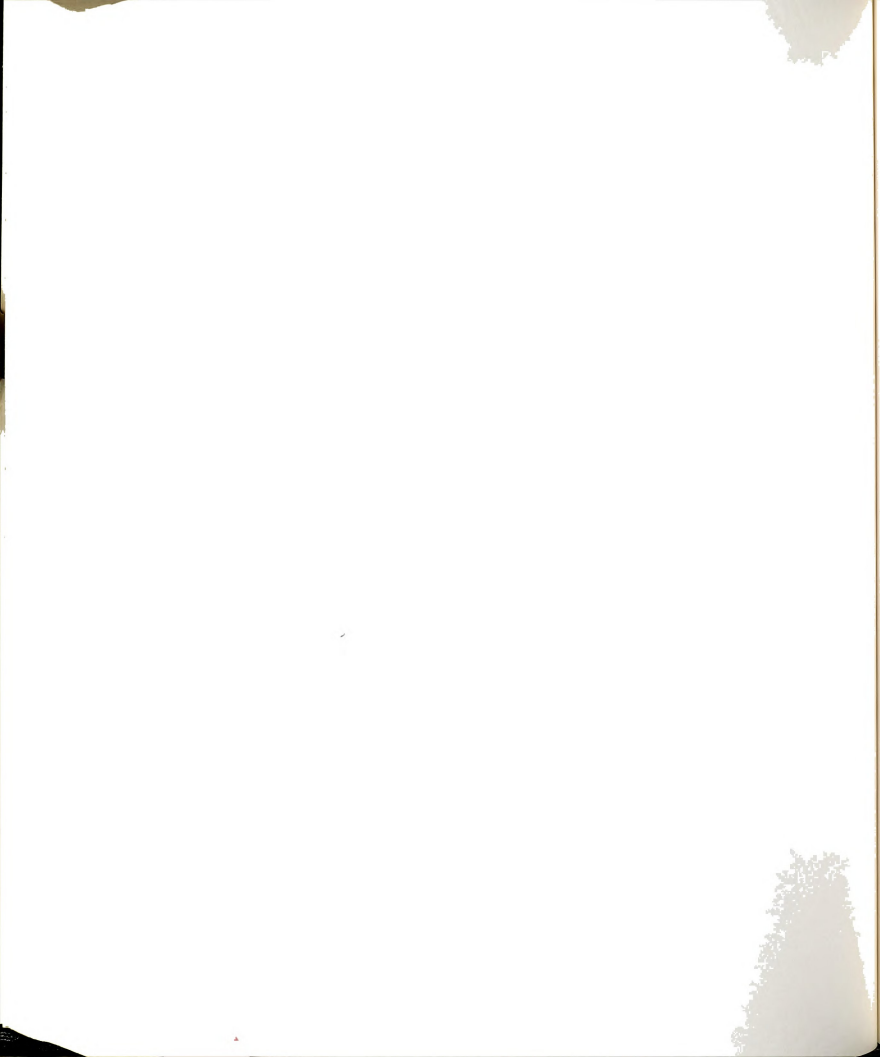
V - Involvement:
     Please put a ( ) beside the appropriate answer as
     it applies to you:

1. - Liking the topic:

     (   ) I like this topic very much
     (   ) I like this topic
     (   ) I don't have a firm opinion about liking or
           disliking it
     (   ) I don't like it.

2   - Level of difficulty as writing about this topic:

     (   ) It is very easy to write about this topic
     (   ) It is easy to write about this topic
     (   ) It is hard to write about this topic
     (   ) It is very hard to write about this topic

3   - Level of interest and excitement while writing on
      this topic:

     (   ) I was highly interested
     (   ) I was interested
     (   ) I was somewhat interested
     (   ) I was not interested

4   - Level of anxiety:

     (   ) I was not nervous while writing on this topic
     (   ) I was somewhat nervous while writing on this
           topic
     (   ) I was nervous while writing on this topic
     (   ) I was very nervous while writing on this
           topic

5   - Level of confidence:

     (   ) I felt very confident while writing on this
           topic
     (   ) I felt confident while writing on this topic
     (   ) I felt somewhat confident while writing on
           this topic
     (   ) I didn't feel very confident while writing on
           this topic
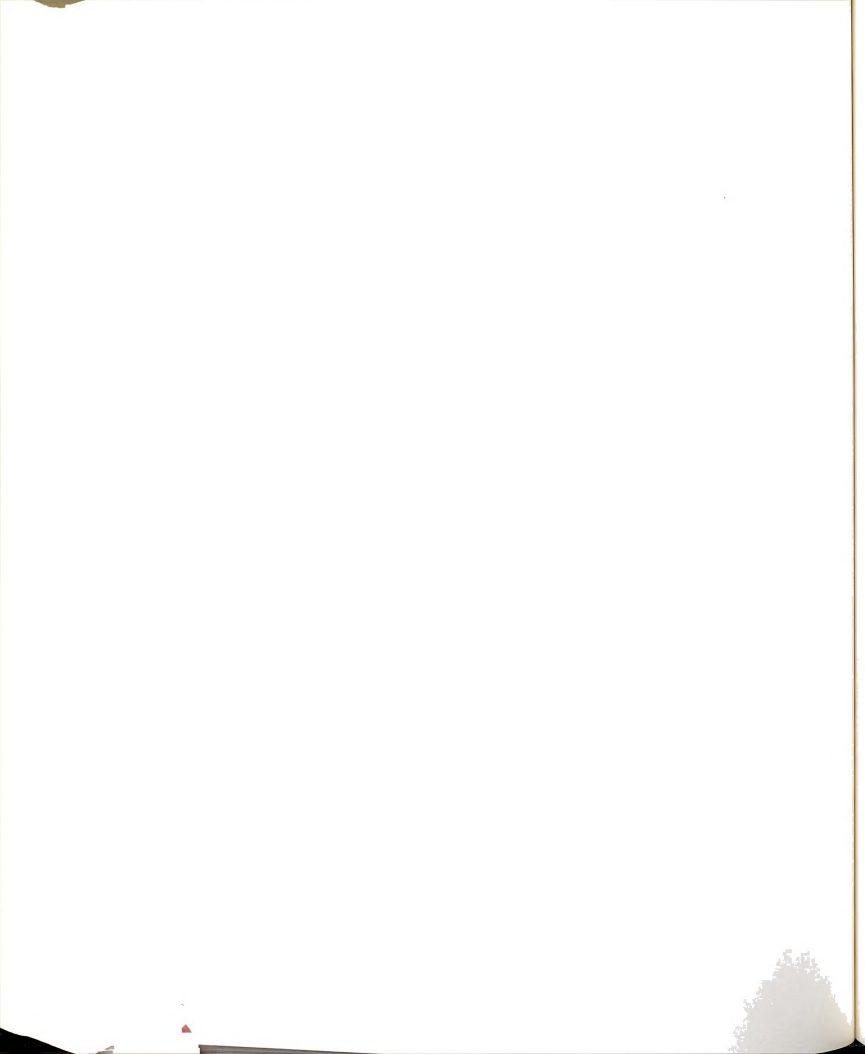
6 – If there is a chance I will write about this topic again:

    (   ) I strongly agree
    (   ) I agree
    (   ) I somewhat agree
    (   ) I don't agree

7 – I have enjoyed writing about this topic:

    (   ) I strongly agree
    (   ) I agree
    (   ) I somewhat agree
    (   ) I don't agree

8 – Who did you have in mind as your reader when you were writing?

    (   ) An expert reader in this topic
    (   ) An average reader with only some knowledge
    (   ) A reader with little knowledge
    (   ) A reader with no knowledge
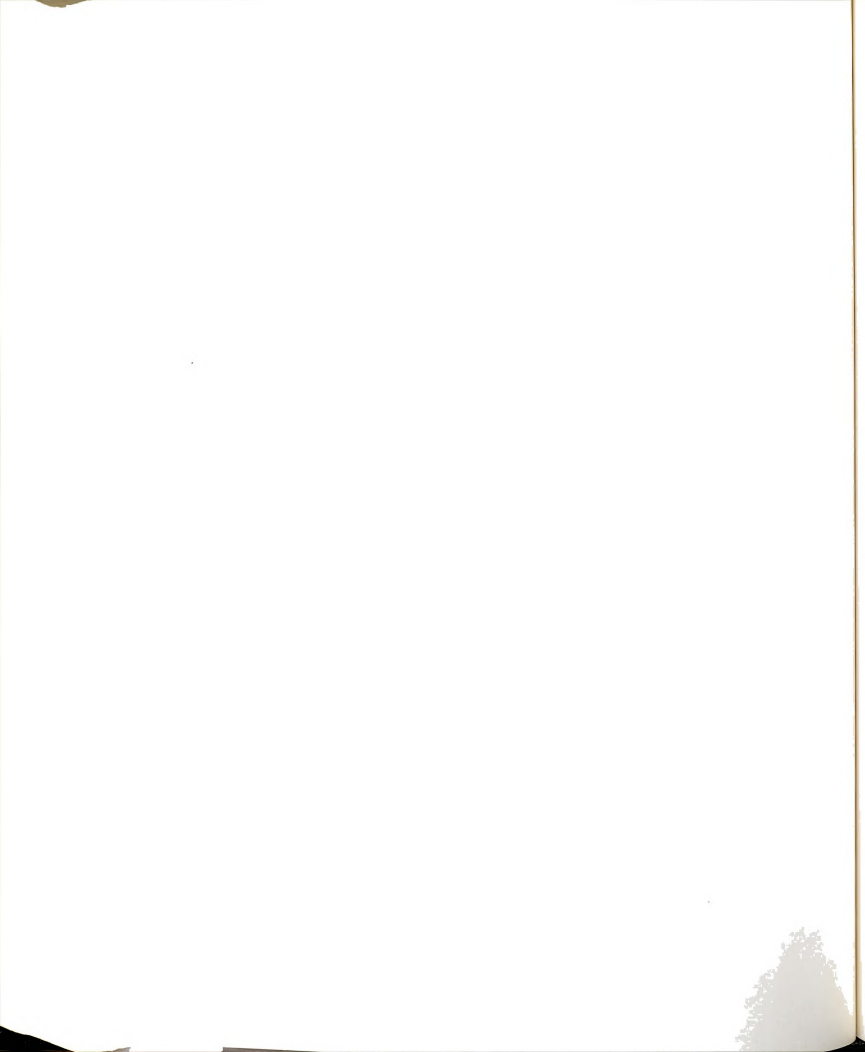
APPENDIX F

SCORING THE PARTICIPANTS' WRITTEN DISCOURSE

TEXT SOPHISTICATION QUESTIONNAIRE
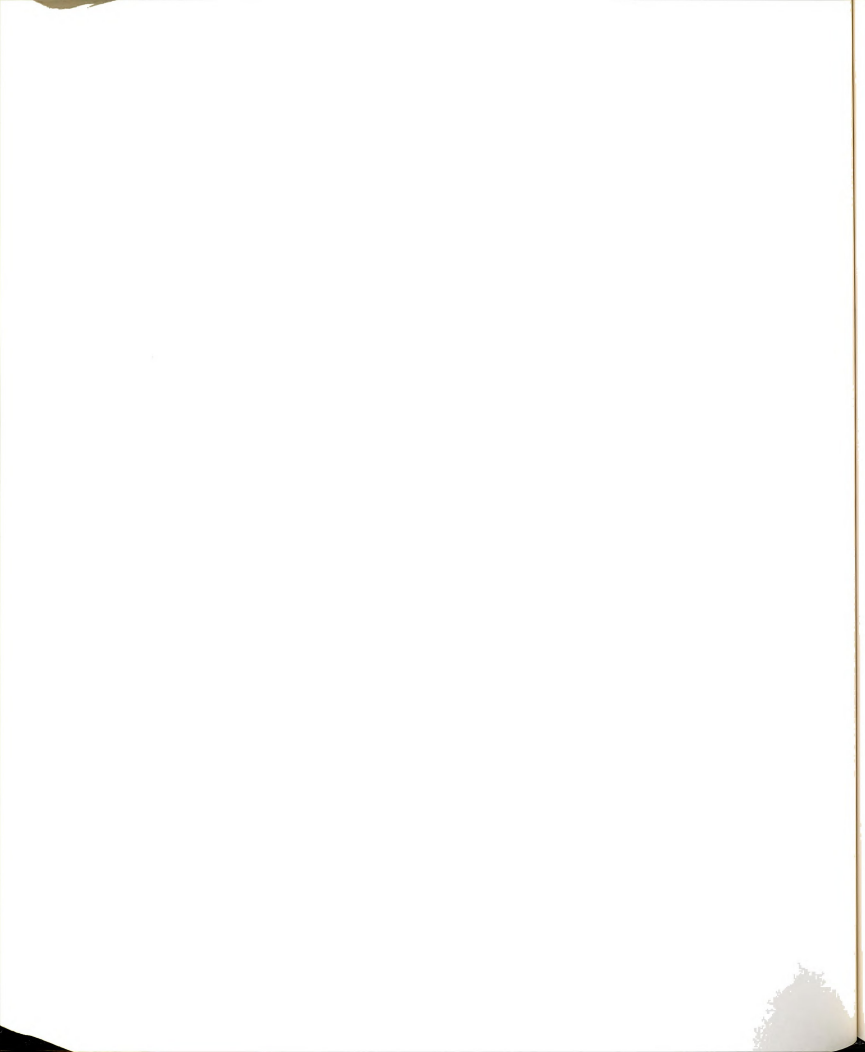
Rater # _____.
Student _____.

VI   - Level of English proficiency:

        ELC Score _____.

VII - Linguistic Complexity:

A   - T-Unit length

        Mean of number of words per t-unit:
        Number of words in the essay =
        Number of T-units in the essay =

B   - Subordination

        Ratio of main clauses to all clauses

        Number of all the clauses:
        Number of main clauses:

VIII - Writing global language proficiency score:

        Score: _____.

IX   - Global coherence:

        (   ) Miscellaneous
        (   ) Incomprehensible
        (   ) Incoherent
        (   ) Partially coherent
        (   ) Fully coherent
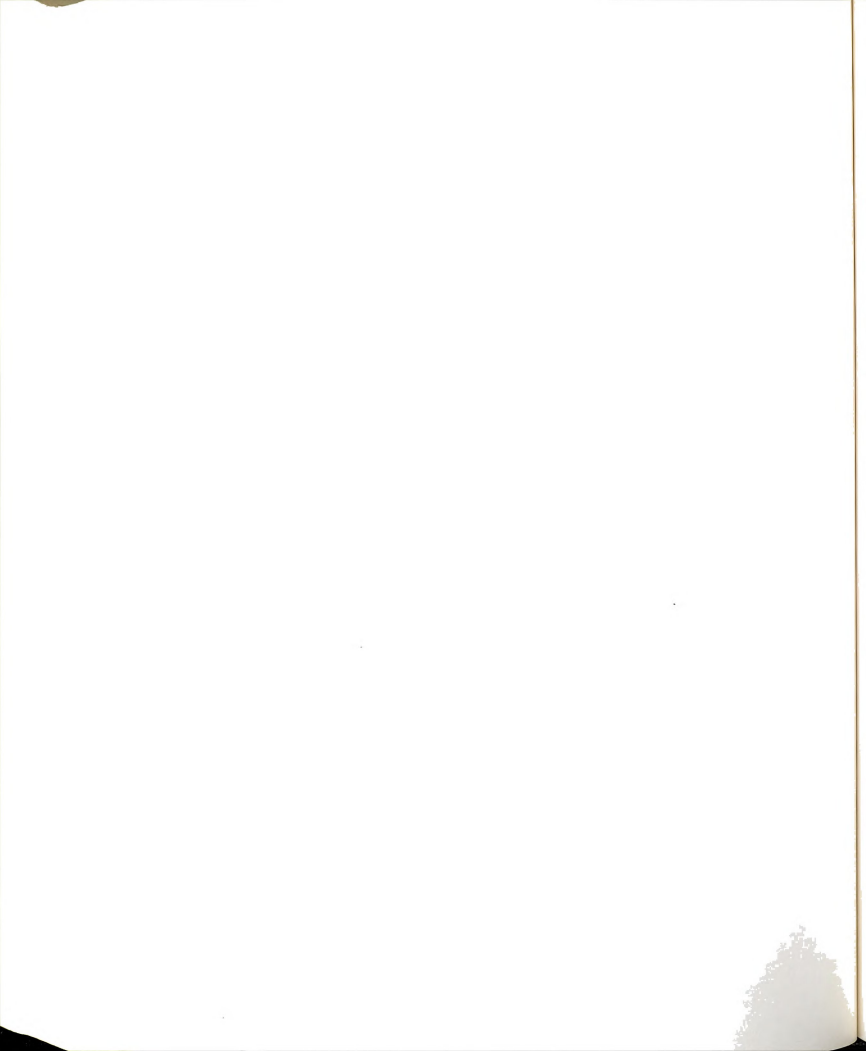
X   - Revision Strategies:

A   - Internal revision

      (   ) Number of marks in subject
      (   ) Number of marks in information and arguments
      (   ) Number of marks in structure

B   - External revision:

      (   ) Number of marks in tone and style
      (   ) Number of marks in language
      (   ) Number of marks in mechanics

C   - (   ) Total revision

XI - Content:

A   - Number of words

B   - Fluency (central ideas)

      (   ) High fluency
      (   ) Moderate fluency
      (   ) Low fluency

XII - Text sophistication:

1   - The complexity of terminology and/or jargon of
     essay:

      (   ) Highly complex
      (   ) Complex
      (   ) Less complex
      (   ) Not complex

2   - The level of sophistication of references:

      (   ) Very sophisticated
      (   ) Mature but simple
      (   ) Very general
      (   ) Child like (very simple)

3   - Definitions and Explanation:

      (   ) Not found at all
      (   ) Very few
      (   ) Few
      (   ) Very many
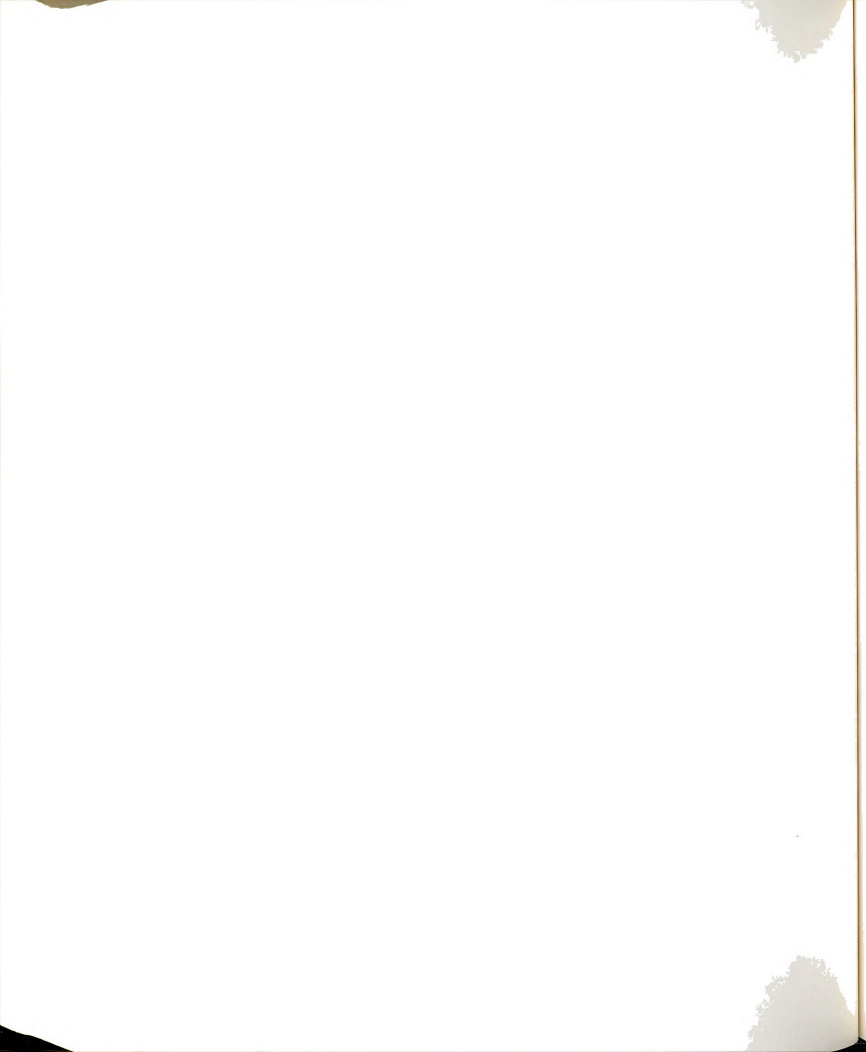
4   - Repetitions:

    (   ) No repetitions
    (   ) Very few repetitions
    (   ) A few repetitions
    (   ) A lot of repetitions

5   - Is there any mentioning of the audience to which they are addressing their writing?

Examples:

6   - Is there any indications that show their awareness of the audience?

    Examples:

7   - False start   Yes _____. No _____.

8   - Stray thoughts   Yes _____. No _____.

    Examples
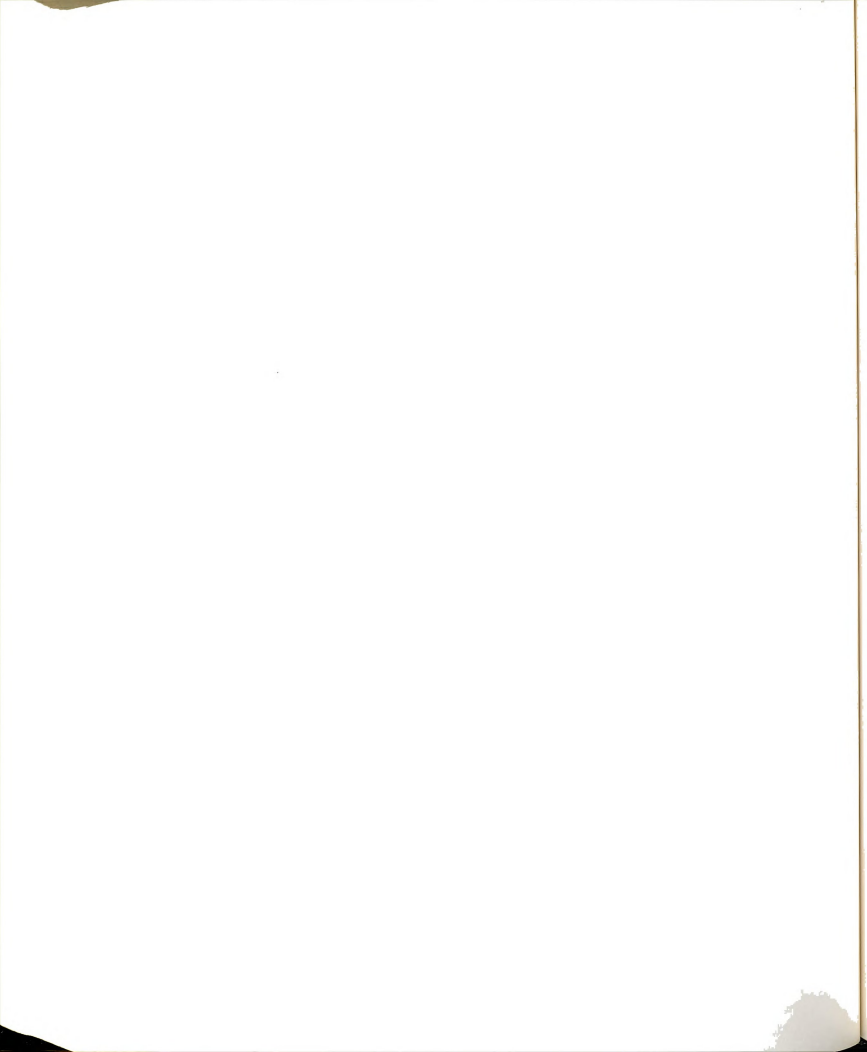
APPENDIX G

PROCEDURES FOR SELECTING PROMPTS
PROCEDURES OF SCORING KNOWLEDGE ORGANIZATION
ENGLISH LANGUAGE CENTER WRITING SCORING SCALE
BAMBERG COHERENCE SCALE
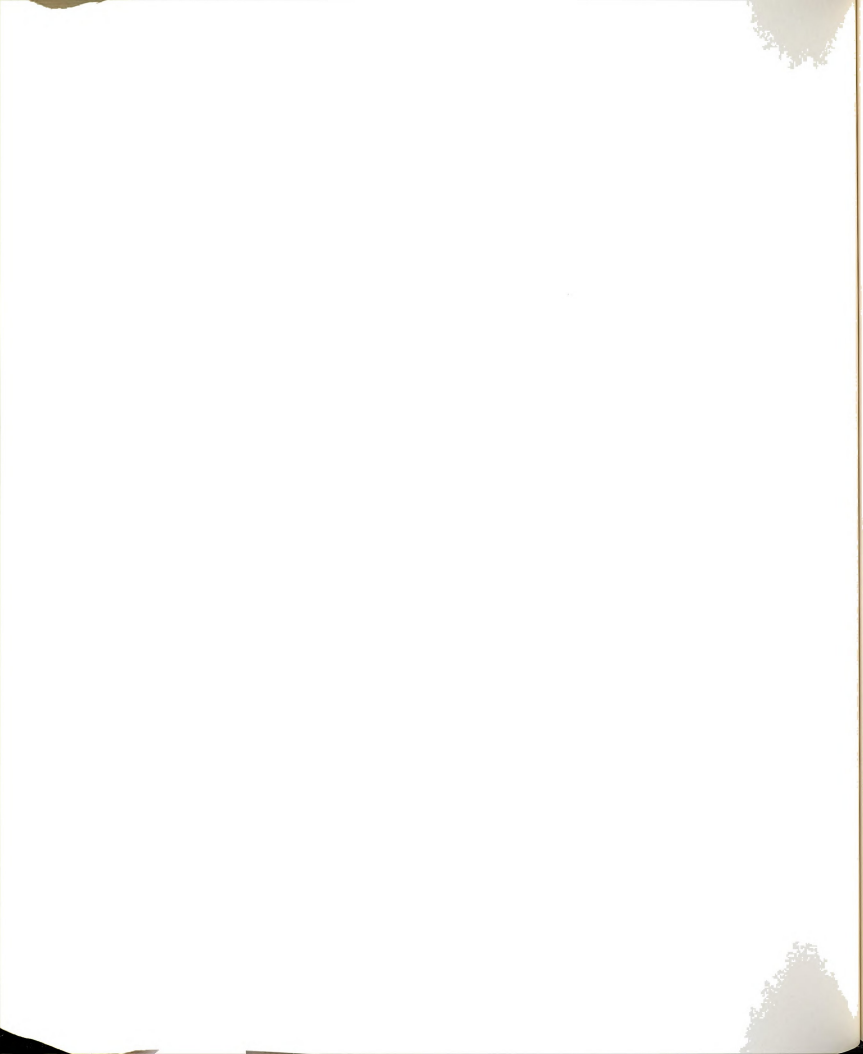
PROCEDURES FOR SELECTING PROMPTS
(From Newell & McAdam, 1987)

1. Care should be taken not to select words/phrases that are semantically close, such as antonyms (hot-cold) and synonyms (large-enormous).

2. When words/phrases in the content structure are accompanied by modifiers (for example, large, white automobile) that do not change the meaning of the concept, the modifiers are excluded. However, if the modifier(s) does affect the meaning of the word/ phrase (for example, welfare program), the modifier is included.

3. Proper nouns are not selected unless they are critical to understanding the passage. For example, in a passage about Stonehenge, Stonehenge would be selected but not England.

4. When the passage includes both a technical term (deficit spending) and its synonym (spending money one does not have), the technical term should be selected.
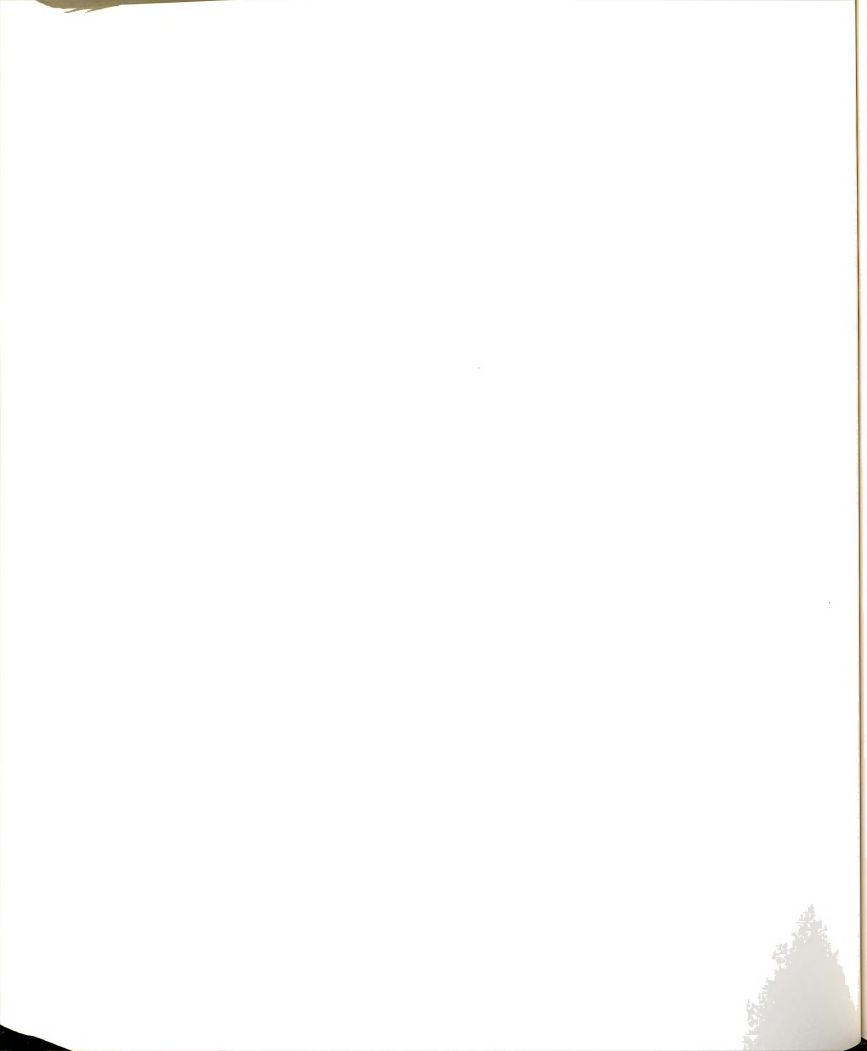
PROCEDURES OF SCORING KNOWLEDGE ORGANIZATION
(From Newell & McAdam, 1987)

1. Each association is rated separately and
    independently at only one level of knowledge
    organization.

2. Responses are rated according to how the concepts are
    used in the selected passages (definitions for each
    term are available to raters). For example, if the
    concept "elements" was selected from a passage on the
    chemistry of compounds and mixtures, responses
    related to "weather" would have to be rated as
    diffusely organized knowledge.

3. Incomplete definitions and imprecise word use may be
    "defining characteristics" (partially organized)
    rather than definitions (well organized). For
    example, "elements" defined as "things that make up
    other things" indicates partially organized
    knowledge.

4. Attention to level of specificy is important in
    rating a response. A response may appear to be an
    example, attribute, or defining characteristic of a
    concept but too broad or general and therefore
    peripherally linked only to the concept (for example,
    the response "money" for the prompt "financial
    rewards").

5. When the prompt or its root is used as part of the
    response with little or no elaboration (for example,
    "Neutrality: to remain neutral"), such a response is
    rated "diffusely organized" unless there is further
    elaboration in the response indicating a higher level
    of organization.
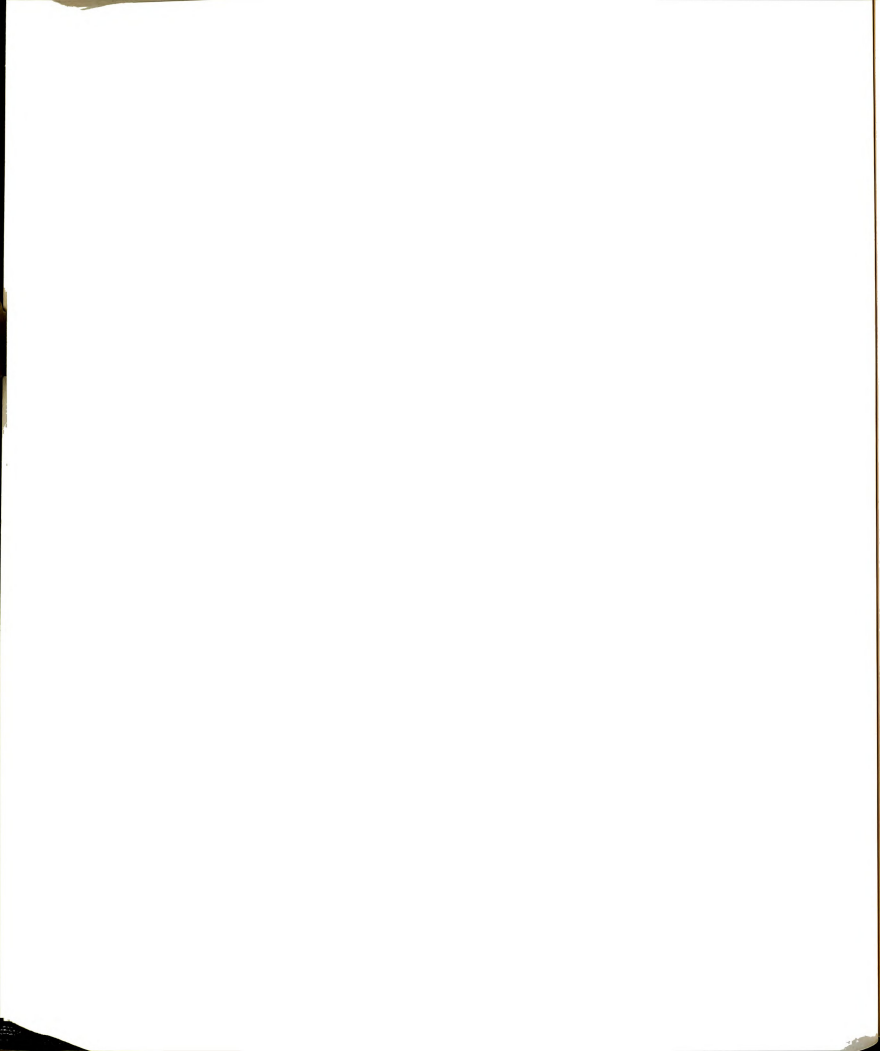
6. When the prompt consists of two or more words (for example, "Internal Affairs: matters concerned with the inner workings of government such as collection of taxes"), the response should be rated as representative of a high level of organization only if it indicates understanding of the prompt as a concept; responses that define only one of the words, such as "affairs inside a country," would be rated as partially organized.

7. In cases where the students have not indicated any separation between their string of responses, raters should use the following guidelines for determining what qualifies as a single response: (a) phrases "join the army," "fight for the country," (b) clauses "because of the need for food," (c) sentences that are clearly marked by a period, (d) single words in a string of responses.
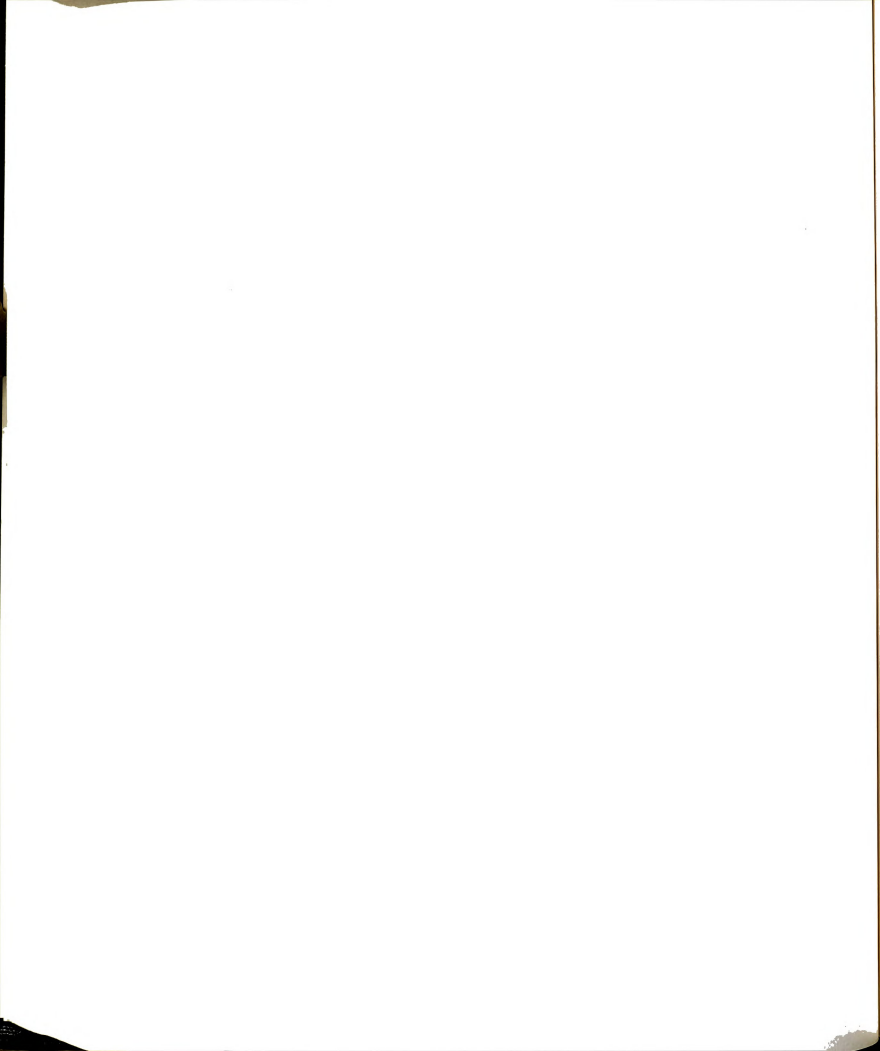
ENGLISH LANGUAGE CENTER SCORING SCALE

100   Very clear. Native grammatical and vocabulary usage. Few if any misspelled words or punctuation problems. About 2 pages or more.

95   Between 90 and 100.

90   Very clear. Few grammatical errors of any kind. Generally smooth. Good command of vocabulary with not more than several inaccurate or unnatural usages. May have a few misspellings or punctuation problems. Well organized. Clearly developed paragraphs.

85   Between 80 and 90. Apparent that writer is not a native speaker. Good organization and paragraph development. Typical of a very advanced ELC student.

80   Very clear and understandable with minor obscure parts. Generally accurate use of grammatical structures at all levels with some problems with advanced structures. Mostly smooth sentences with a few choppy or run-on constructions. Largely accurate use of vocabulary with some problems with advanced words and some unnatural usage. A few misspelled or distorted words, and a few punctuation problems. Adequate attention to organization and development.

75   Clear with possibly one or two parts that require some mental editing. Generally accurate on elementary and intermediate grammatical structures, with occasional serious errors on advanced structures. Generally smooth, with a few choppy or poorly connected or run-on clauses or sentences. Some use of advanced vocabulary with several incorrectly or unnaturally used words. Several misspelled or distorted words and several punctuation problems. Some attention to overall organization and development. About 1-1/2 pages long.
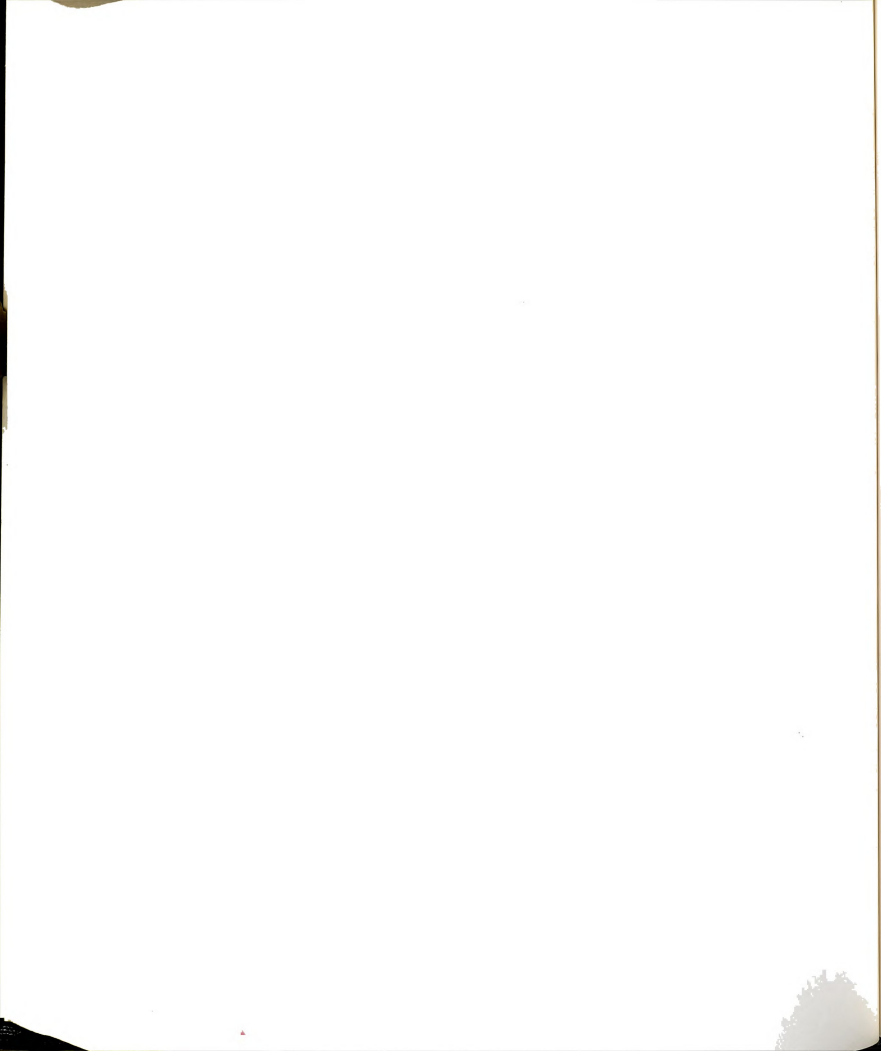
70   Clear with minor editing but may have some parts requiring major editing or guessing. Frequent minor grammatical errors, but also accurate or nearly accurate use of a wide range of structures and tenses. Often smooth but with several poorly connected or choppy or run-on clauses or sentences. Often smooth but with several poorly connected or choppy or run-on clauses or sentences. Vocabulary largely elementary, but often advanced words are used, although not always accurately. Possibly many misspelled words and up to several distortions. Sentences usually clearly marked but with several punctuation problems.

65   Probably some unclear parts. Use of a wide range of grammatical structures but with numerous errors, minor and serious, especially on the more advanced structures. Several choppy, run-on, or poorly connected clauses or sentences. Vocabulary range in the elementary and intermediate ranges but with frequent errors at all levels, especially with advanced words. Quite a few unnatural usages. Probably many misspelled words or distortions. Punctuation may show frequent problems. Usually 1 to 1-1/2 pages.

60   Probably becomes unclear or confusing when expressing some complex ideas. Sometimes accurate at the elementary level but with serious inaccuracies at all levels. Many choppy, run-on or poorly connected clauses or sentences. Many serious errors at all levels, in vocabulary, though fair use of elementary vocabulary. Frequent unnatural or apparently translated or invented words. Probably many misspellings, distortions, or mispunctuations. About a page or more.

55   Probably be unclear in several parts or may possibly attempt to express only very elementary ideas. Few accurate sentences or natural and adequate use of vocabulary. Rarely smooth. Many apparent translations or invented words. Many misspellings, distortions, and mispunctuations. About one page.

45   May be largely unclear or overly simple. Few accurate or complex sentences. Inaccurate use of vocabulary, even at elementary level. Usually less than one page.
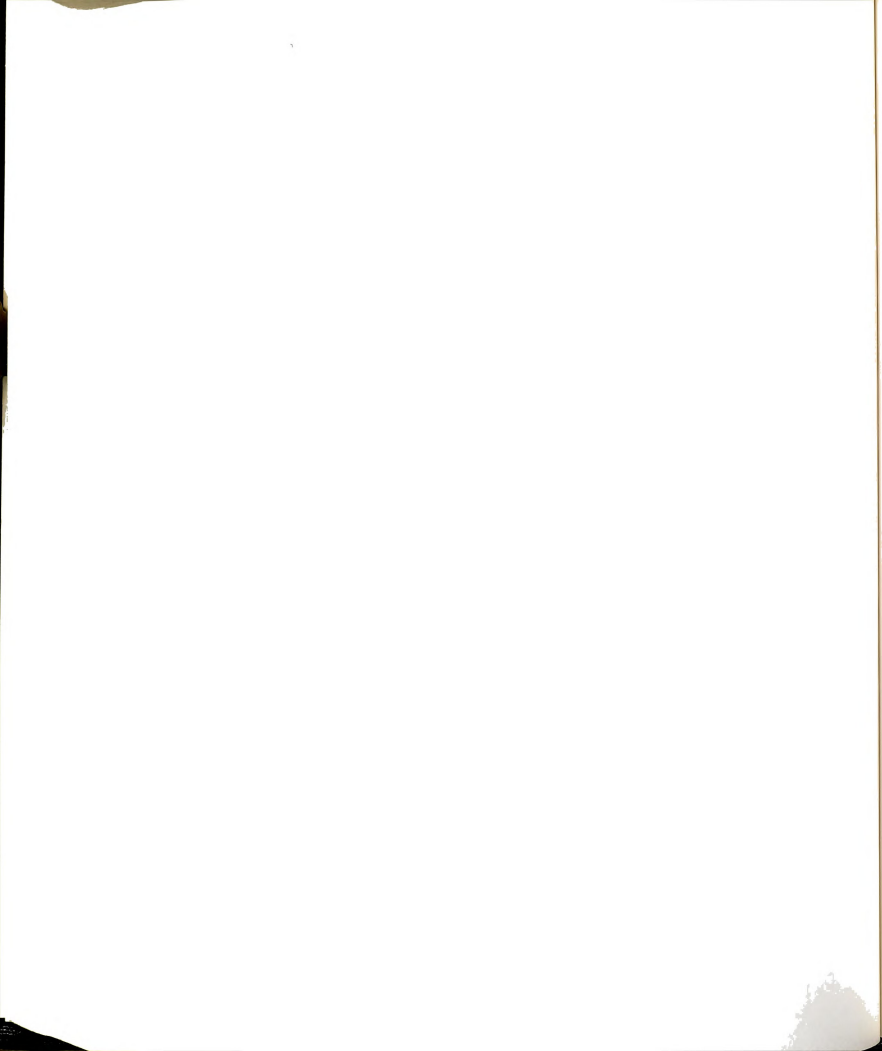
35   Name plus attempts at one or two sentences. Barely recognizable as English.

30   Name only; no attempt to write.
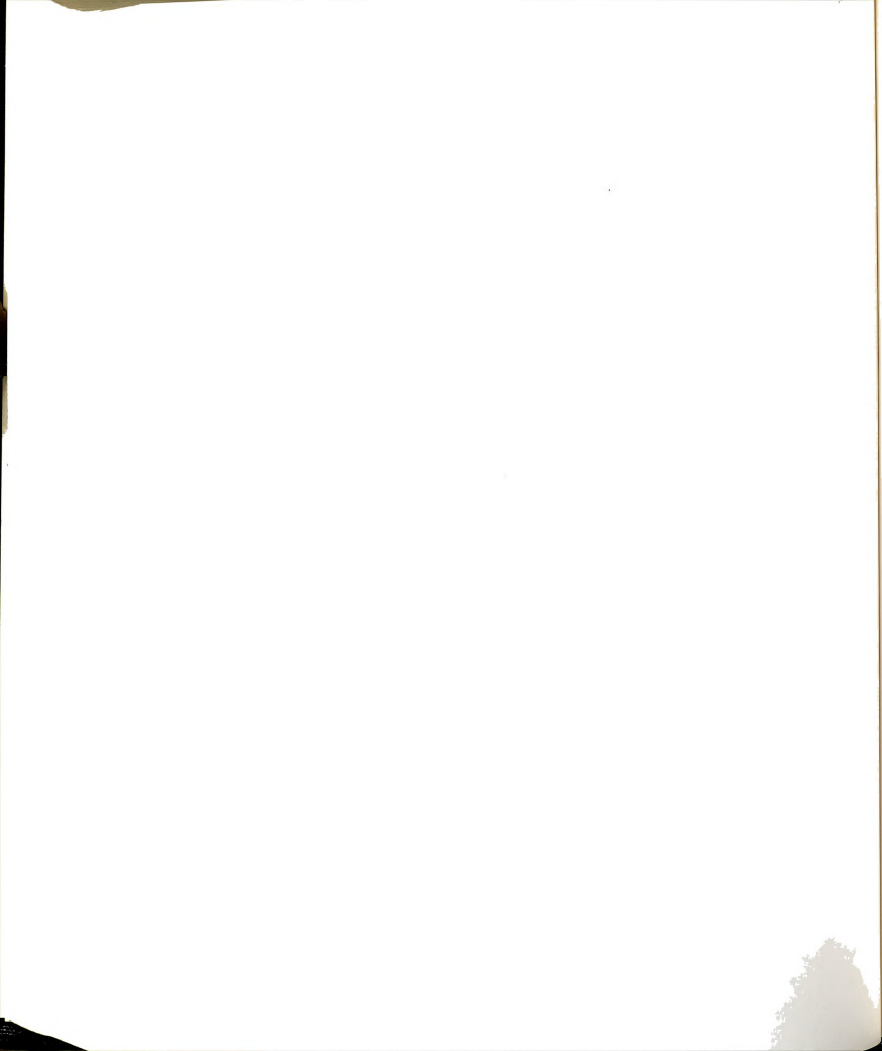
HOLISTIC COHERENCE SCALE

4 = Fully Coherent

Writer clearly identifies the topic

Writer does not shift topics or digress

Writer orients the reader by creating a context or situation

Writer organizes details according to a discernible plan that is sustained throughout the essay

Writer skillfully uses cohesive ties such as lexical cohesion, conjunction, reference, etc. to link sentences and/or paragraphs together

Writer often concludes with a statement that gives the reader a definite sense of closure

Discourse flows smoothly--few or no grammatical and/or mechanical errors interrupt the reading process

3 = Partially Coherent

If writer does not explicitly identify the topic, s/he provides enough details so that readers can probably identify the specific subject

Writer has one main topic, but there may be minor digressions

Writer provides some reader orientation, either by briefly suggesting the context or by directly announcing the topic

Writer organizes details according to a plan, but may not sustain it throughout or may list details in part of the essay

Writer uses some cohesive ties such as lexical cohesion, conjunction, reference, etc., to link sentences and/or paragraphs together
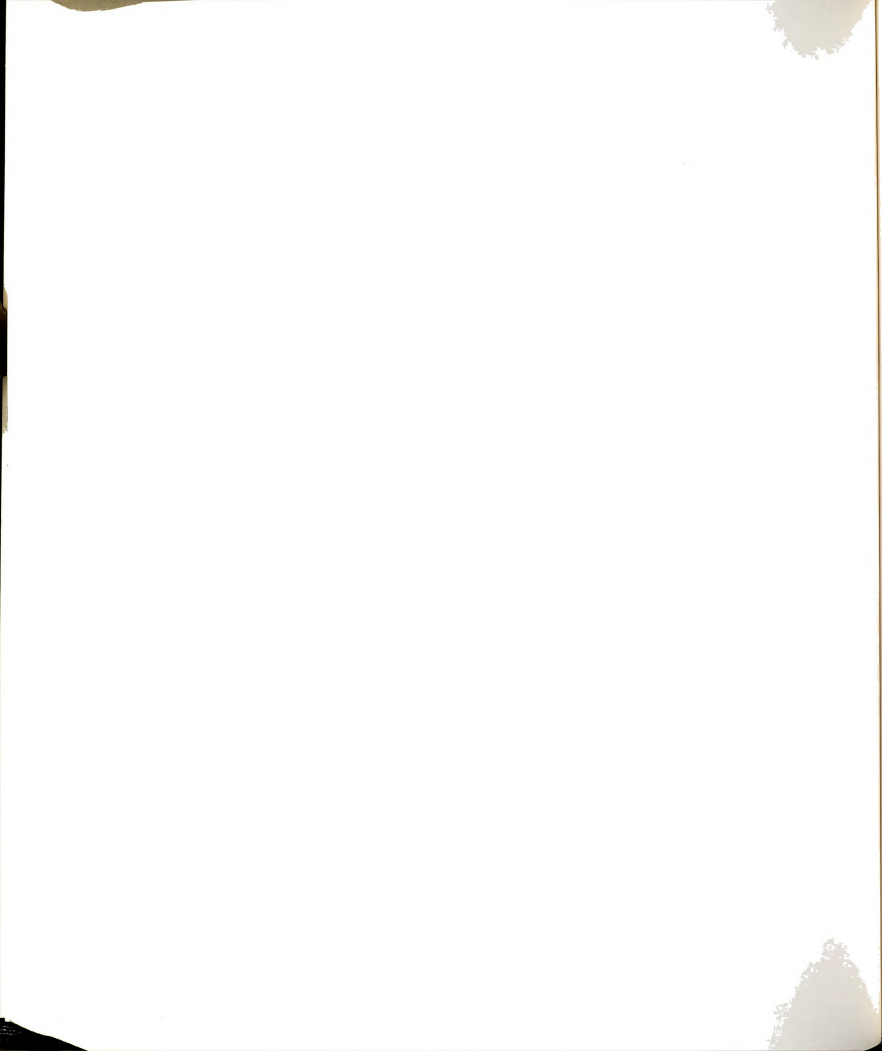
Writer does not usually conclude with a statement that creates a sense of closure

Discourse generally flows smoothly although occasional grammatical and/or mechanical errors may interrupt the reading process

2 = Incoherent

Some of the following prevent the reader from integrating the text into a coherent whole:

Writer does not identify the topic and the reader would be unlikely to infer or guess the topic from the details provided

Writer shifts topics or digresses frequently from the topic

Writer assumes the reader shares his/her context and provides little or no orientation

Writer has no organizational plan in most of the text and frequently relies on listing

Writer uses few cohesive ties such as lexical cohesion, conjunction, reference, etc. to link sentences and/or paragraphs together

Writer creates no sense of closure

Discourse flow is irregular or rough because mechanical and/or grammatical errors frequently interrupt the reading process

1 = Incomprehensible

Many of the following prevent the reader from making sense of the text:

Topic cannot be identified

Writer move from topic to topic by association or digresses frequently

Writer assumes the reader shares his/her context and provides no orientation
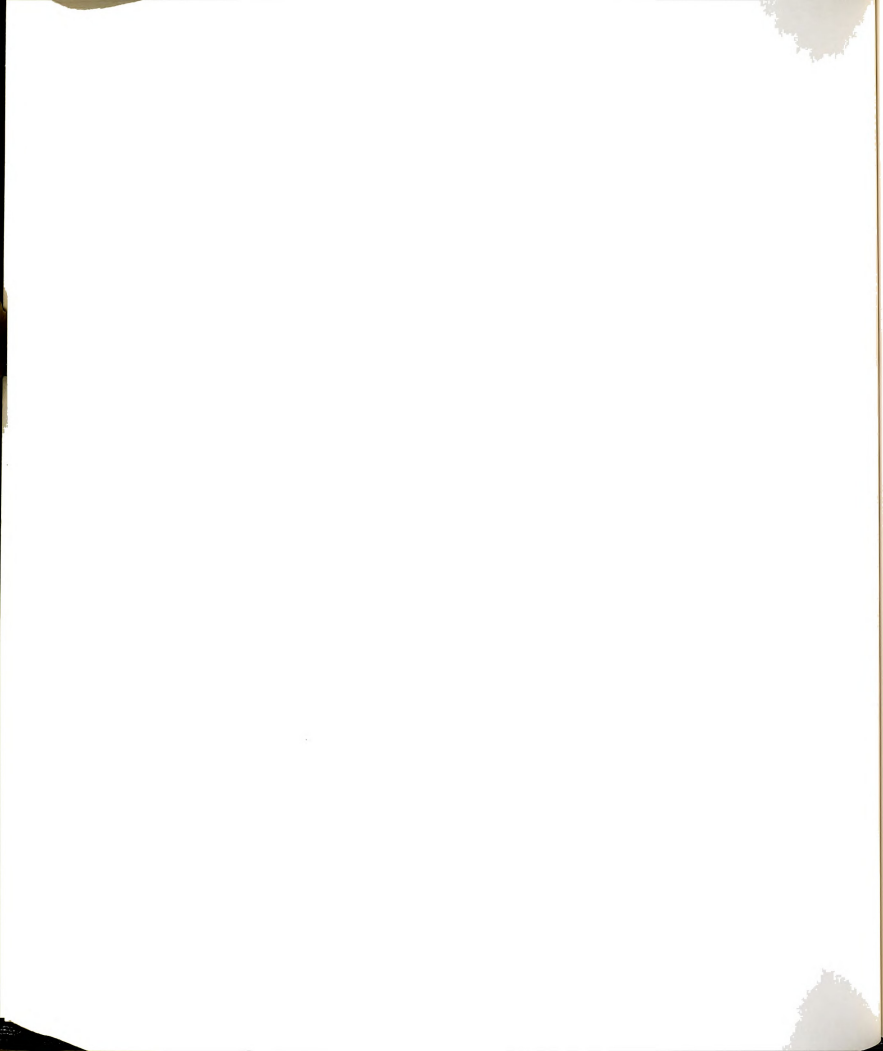
Writer has no organizational plan and either lists or follows an associative order

Writer uses very few cohesive ties such as lexical cohesion, conjunction, reference, etc. and sentences do not seem connected or linked together

Discourse flow is very rough or irregular because writer omits structure words, inflectional endings and/or makes numerous grammatical and mechanical errors that continuously interrupt the reading process

0 = Unscorable/Miscellaneous

Source: Bamberg (1984).
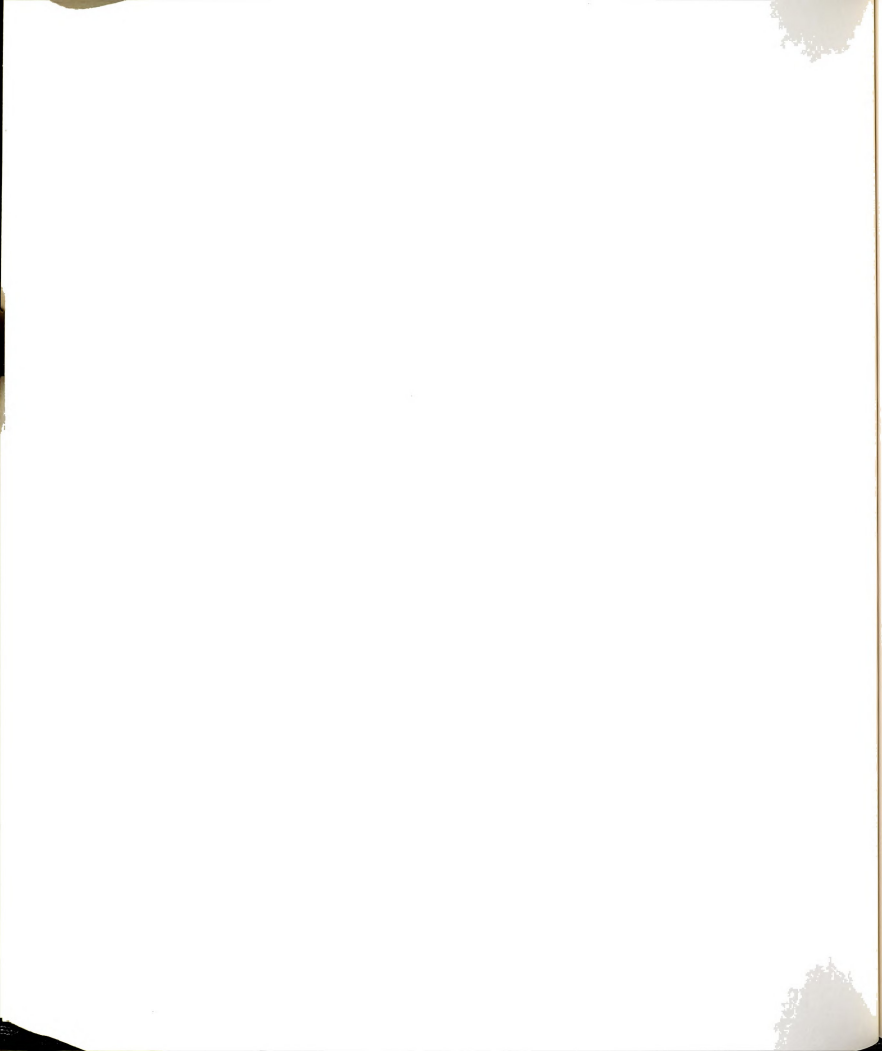
APPENDIX H

THE STUDY'S RAW DATA
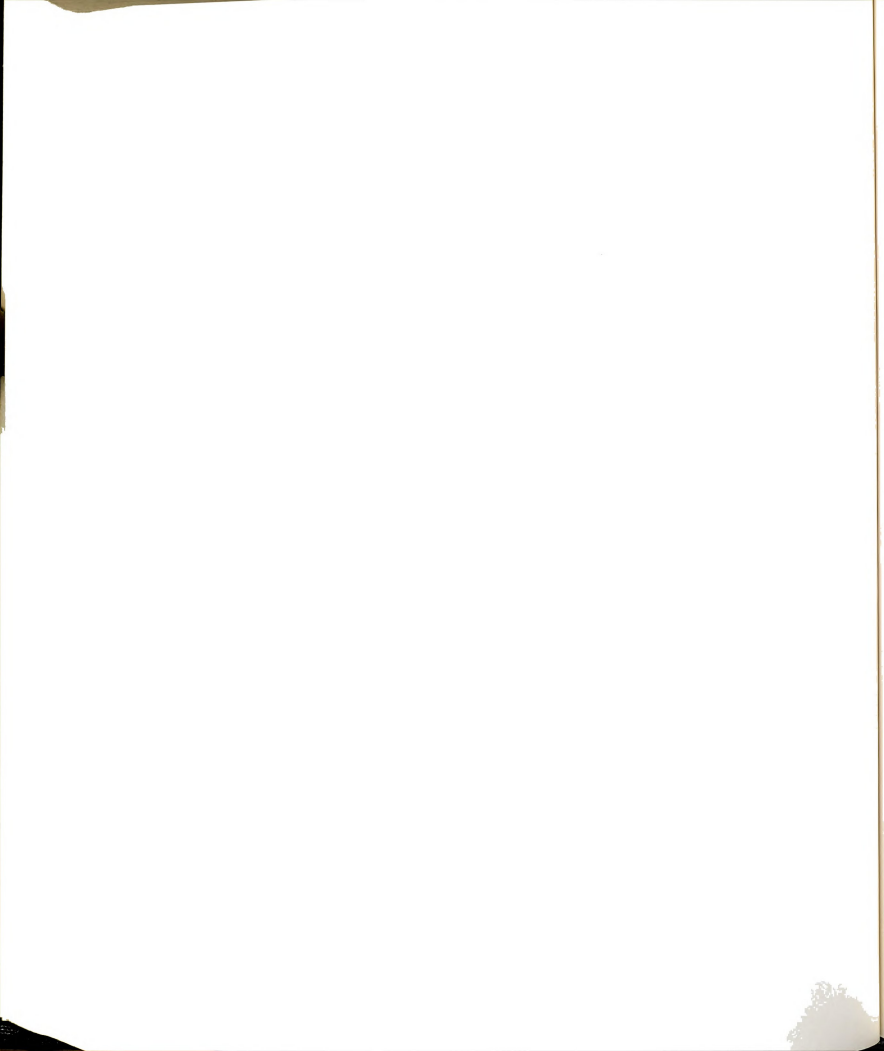
Age

      1 = 20-24 years
      2 = 25-29 years
      3 = 30-34 years
      4 = 35-40 years
      5 = 40 or over

L.E. (Level of Education)

      1 = M.A. degree
      2 = B.A. degree
      3 = High school degree
      4 = Others

G.R. (Gender)

      1 = Male
      2 = Female

ELC Score (Language Proficiency Scores (35-100))

R (Amount of Reading)

      1 = Little reading
      2 = Much reading

AFL (Fluency)

      1 = Low
      2 = Moderate
      3 = High

AOG Organization (Scale 5-15)

ACM Combination (Scale 0-15)

LCP (T-Unit Length)

Sub (Subordination)

WLP (Writing Global Language Proficiency)

WRD (Number of Words)

IDS (Number of Ideas Scale: 1-3)
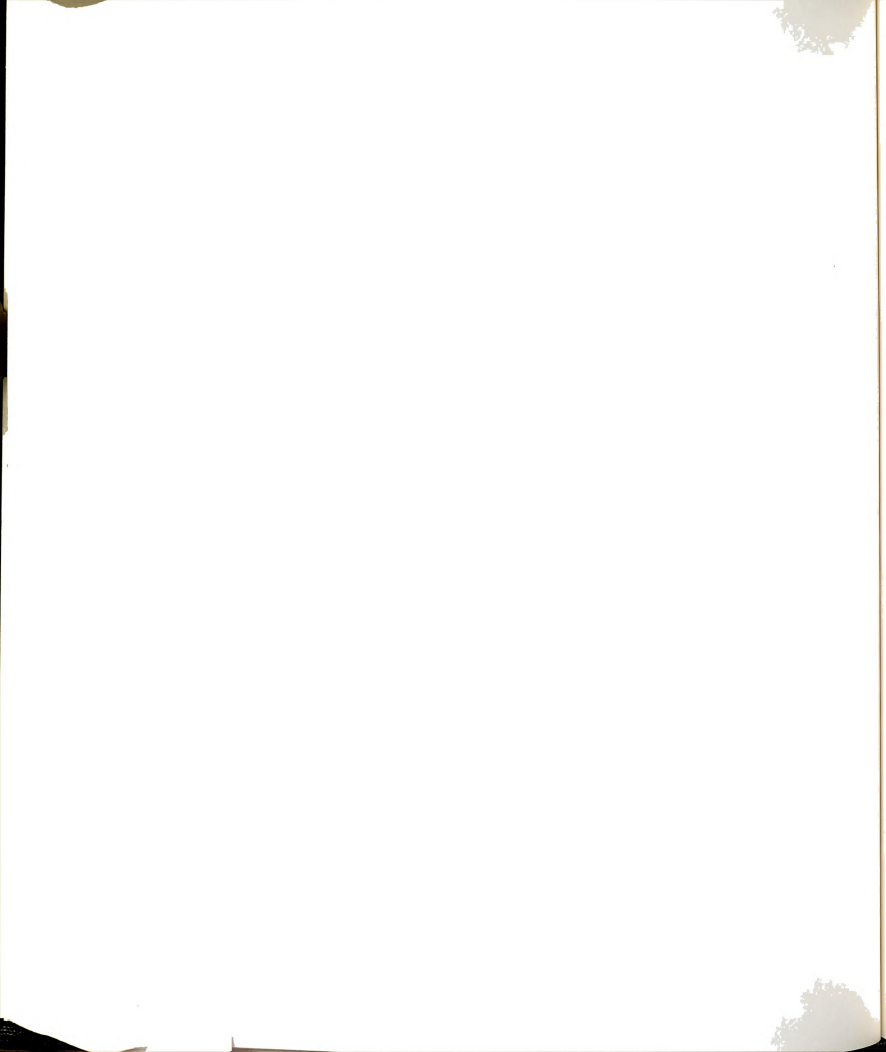
TNT (Total of T-Units)

GC (Global Coherence Scale: 1-4)

COH (Cohesion Scale: 1-4)

TS (Text Sophistication)

AA (Audience Awareness Scale: 1-4)

INV (Involvement)

ER (External Revision)

IR (Internal Revision)

TR (Total Revision)

Table H-1

Table H-1.--The Study's Raw Data

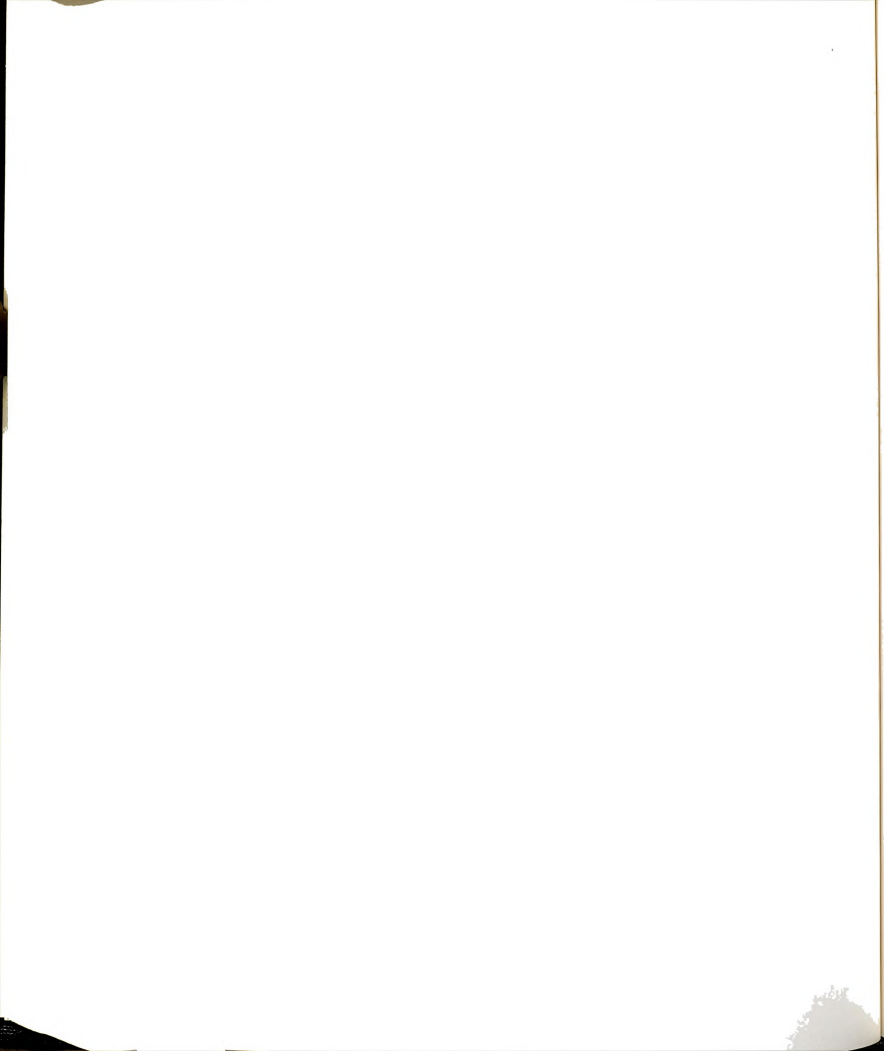| Native Language	Age	L.E.	GR	ELC	R	AFL	AOG	ACM	LCP	Sub	WLP	WRD	IDS	TNT	GC	COH	TS	AA	INV	ER	IR	TR
Arabic	3	2	1	77	2	2	8.67	7.33	8.37	2.00	66	159	1	19	2.67	3.67	12	1	8	8	3	9
	3	2	1	76	2	2	10.33	8.67	10.82	2.07	73	238	2	22	3.00	3.00	12	3	21	16	1	19
	3	3	1	79	2	2	13.33	7.00	7.00	1.59	73	224	2	32	3.67	3.00	14	3	16	17	1	18
	3	3	1	75	2	2	11.67	10.67	10.00	2.04	74	130	2	33	4.00	4.00	15	1	12	12	2	12
	5	2	1	79	1	3	13.00	12.67	13.79	1.90	75	386	3	28	3.67	3.00	15	3	10	14	6	20
	5	2	1	81	1	3	14.00	14.00	10.29	1.52	74	360	3	35	3.00	3.00	14	4	14	19	9	28
Chinese	2	2	2	76	1	2	8.33	6.67	10.91	1.59	80	240	3	22	4.00	4.00	15	3	12	14	3	17
	5	2	2	84	2	2	10.00	9.33	11.39	1.52	77	410	3	36	4.00	3.67	13	2	18	20	1	21
	5	2	1	77	2	3	13.00	12.67	13.04	1.61	79	339	3	26	4.00	4.00	12	2	12	2	1	3
	4	2	2	85	2	2	11.67	10.67	11.41	1.45	77	365	3	32	4.00	4.00	12	2	9	9	2	11
	2	3	1	82	1	2	9.00	7.33	11.50	1.20	79	299	3	26	3.67	3.33	11	3	22	11	0	11
	4	3	2	76	2	2	8.00	6.00	10.00	1.36	76	250	2	25	3.67	3.33	13	3	18	1	0	1
	3	3	1	80	2	2	8.00	8.67	13.96	1.55	74	321	3	23	3.00	3.00	13	2	7	19	2	20
	4	2	2	83	1	1	10.00	6.00	9.92	1.36	75	258	2	26	4.00	3.67	11	2	10	12	1	13
	4	2	1	70	1	1	7.67	5.33	8.75	1.65	73	175	2	20	3.67	3.67	15	3	5	5	3	8
Japanese	2	2	1	78	1	1	11.33	10.33	10.33	1.46	76	279	2	27	3.67	3.67	11	3	13	13	0	13
	3	2	2	73	1	2	8.00	6.00	10.89	1.74	74	403	2	37	3.00	3.00	9	1	24	5	5	24
	2	2	2	83	2	2	10.67	10.67	11.10	2.07	82	222	3	20	3.00	4.00	10	3	7	5	3	10
	4	2	2	73	1	1	11.33	11.00	10.50	1.41	80	252	2	24	3.33	4.00	12	2	19	8	3	8
	2	2	1	89	2	2	12.67	11.67	13.17	1.62	80	395	3	30	4.00	4.00	12	3	10	25	3	25
	2	2	1	79	2	1	6.33		8.23	1.38	66	107	1	13	2.00	1.67	11	2	12	5	0	5
	4	2	1	72	2	1	9.33	8.67	9.04	1.42	73	226	2	25	4.00	3.33	13	2	8	13	0	31
	5	2	1	88	1	1	10.67	9.67	11.08	1.53	81	266	2	24	4.00	4.00	15	2	16	23	0	3
	1	2	1	77	1	1	8.67	6.00	9.00	1.78	72	90	1	10	3.00	2.00	10	3	23	3	0	31
	2	1	1	77	1	1	9.67	9.33	12.08	1.48	77	314	3	26	4.00	2.00	13	2	18	18	0	18
	4	2	1	76	2	1	10.33	9.33	10.48	1.35	73	262	3	25	3.00	2.00	13	3	16	16	0	3
	2	1	1	76	1	2	8.67	6.67	14.55	1.70	69	160	1	11	2.00	1.67	10	3	9	29	5	34
	3	2	1	82	2	3	13.33	13.00	10.66	1.70	80	405	3	38	3.67	3.67	13	4	45	45	3	46
	3	2	1	86	1	1	11.67	10.67	11.32	1.70	75	283	2	25	3.00	3.00	14	4	21	21	3	18
	4	2	1	88	1	1	10.67	10.00	11.72	1.64	79	340	3	29	3.33	3.00	10	2	21	10	3	24
	2	2	2	83	2	1	12.67	12.33	9.65	1.27	74	251	2	26	3.00	3.00	11	2	7	7	0	10
	3	4	1	83	2	2	9.00	7.00	12.29	2.06	73	258	2	21	3.00	3.33	11	3	10	10	0	11
	2	2	2	70	2	2	11.00	10.33	12.79	1.57	76	149	2	17	2.67	3.33	12	1	11	11	0	11
Spanish	2	2	2	70	1	2	11.00	8.76		1.22	71	91	1	10	3.00	3.00	9	1	8	1	4	7
	2	1	1	71	2	1	11.79	9.10		1.38	79	204	3	22	4.00	4.00	14	3	14	14	2	17
	1	1	1	74	1	2	9.00	9.00	8.82	1.58	67	194	1	22	3.33	3.00	11	2	10	0	5	0
	5	2	2	65	1	2	13.00	12.67	11.14	1.73	72	312	3	28	3.67	3.00	12	3	15	6	0	6
	1	1	1	79	1	2	14.00	14.00	15.45	2.22	74	170	2	11	3.00	2.67	13	1	10	13	0	13
	1	1	1	89	1	3	11.00	9.00	13.50	1.62	80	324	3	24	3.67	3.67	13	3	12	12	1	13
Indonesian	1	1	2	80	1	2	13.00	3.00	10.07	1.73	77	423	3	42	4.00	4.00	14	3	15	72	4	76
	5	1	2	80	2	2	12.00	12.00	12.40	1.74	79	310	3	25	4.00	3.67	12	3	15	9	0	9
	5	1	1	76	2	1	8.00	6.00	9.00	1.58	72	135	2	15	4.00	2.67	16	3	11	3	3	16
	6	1	1	73	2	3	11.33	11.33	10.37	1.61	74	311	3	30	3.00	2.00	13	2	20	14	2	16
	4	3	2	83	2	1	7.00	3.00	11.71	2.00	69	82	1	7	3.00	3.00	12	2	7	1	2	6
	3	3	2	77	2	1	7.67	4.33	10.35	1.36	74	445	1	43	3.00	2.67	10	2	14	3	3	6
	2	2	1	71	1	2	10.33	9.67	8.37	1.29	75	159	2	19	3.33	3.33	13	1	11	1	0	1
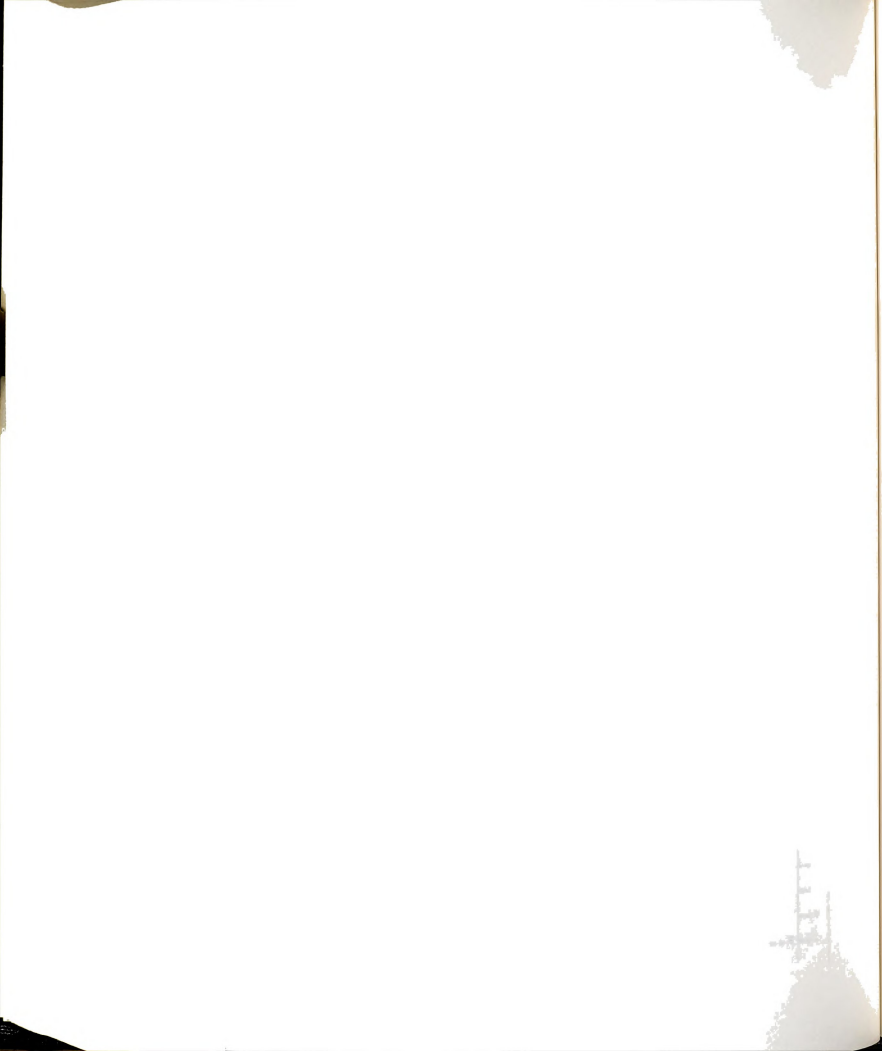
APPENDIX I

PRIOR KNOWLEDGE TEST AND WRITING SAMPLES
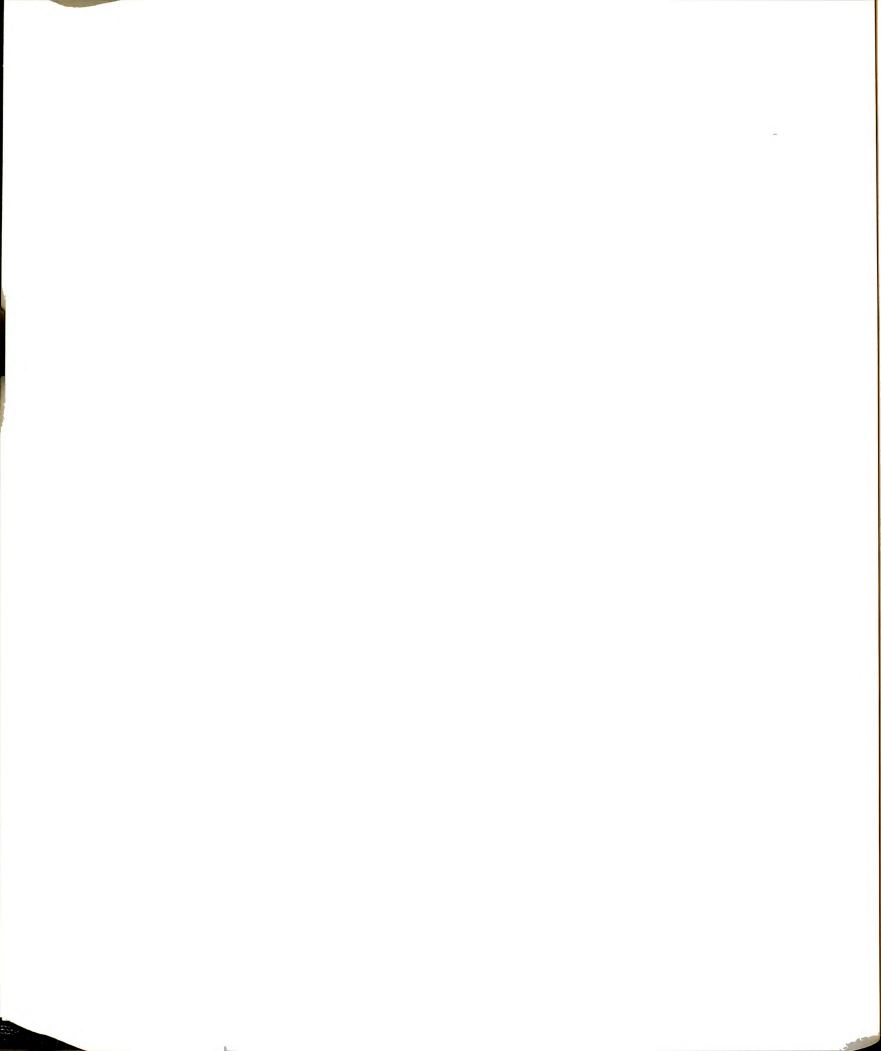
STUDENT 1

Personal Characteristics

Age: 40-44
Level of Education: M.A.
Gender: Male
Amount of Reading: Much reading

Prior Knowledge Test

Fluency: High
Organization: High
Combined: High

Writing Performance

Overall Language Proficiency Score: 73
Holistic Writing Score: 71
Number of Words: 311
Number of Ideas: 3
Text Sophistication: Moderate
Global Cohererce: Partially coherent
Involvement: Highly involved
Total Number of T-units: 30
Mean T-unit Length: 10.37
Amount of Subordination: Partial
Total Number of Revisions: 16

Students' Associations to the Prompts

Topic No. 3: Eclipses:

The following words/phrases represent the central ideas of the topic, Eclipses.

Prompt No. 1, Shadow of Eclipses:

--Comes to the earth
--Will dark in the earth where the shadow comes
--Some time make someone's afraid
--The plant will not process its activities
--The place will get dark a moment
--The place where the shadow comes like at night
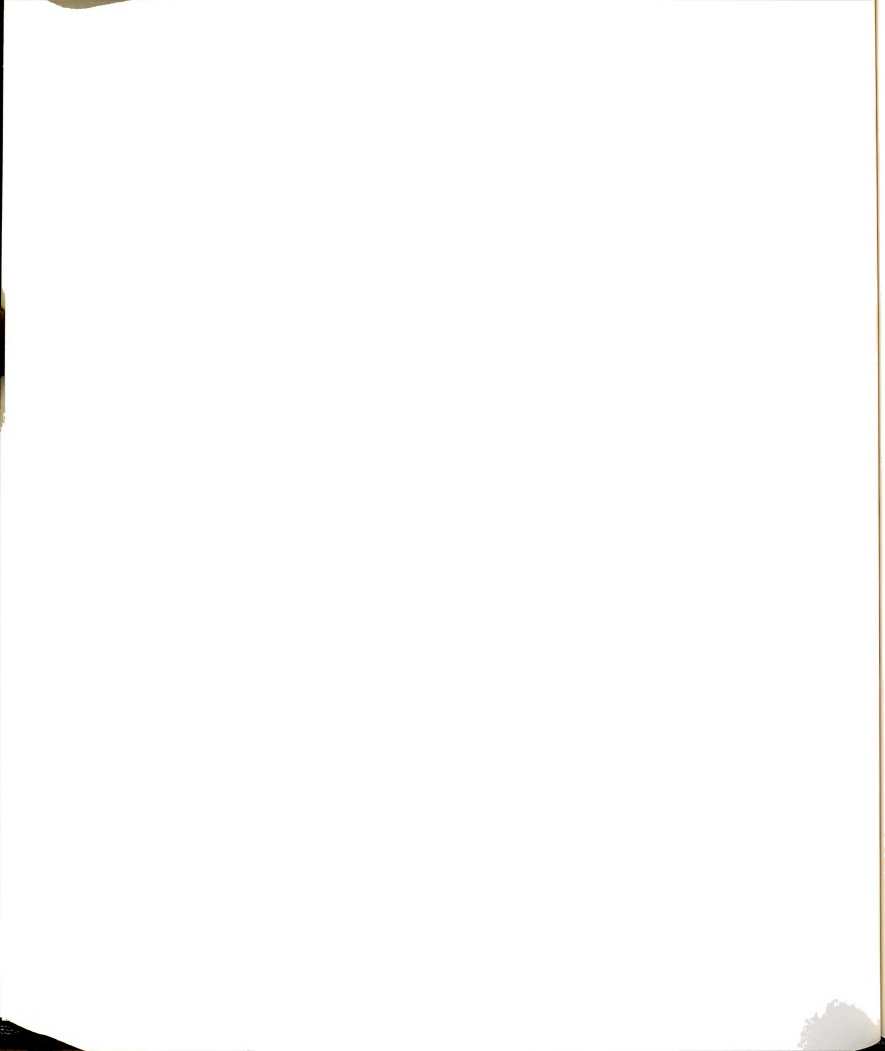
Prompt No. 2, Solar Eclipses:

--The sun doesn't look clearly
--There is a total eclipses and part eclipses
--There is a story about this eclipses among the people
--The story about the giant eat the sun
--The earth will get dark a moment
--Happen in the day
--There is an effect to the tea
--Many people to watch it by glasses

Prompt No. 3, Lunar Eclipses:

--The people will not see the moon clearly
--Happen in the night
--The people get unhappy because they are afraid
--The moon looks a part or total
--Happens in the full moon
--There is an effect to the sea

Prompt No. 4, Astronomers:

--The persons who expect in the astronomy
--They make account to the star
--They work with instruments
--They are graduate from the engineering faculty

Prompt No. 5, Eclipses Prediction:

--Made by astronomers
--The dark can be predicted
--Sometime a year happen twice or once
--Be counted by detail numerical point
--Can't be found by commoner
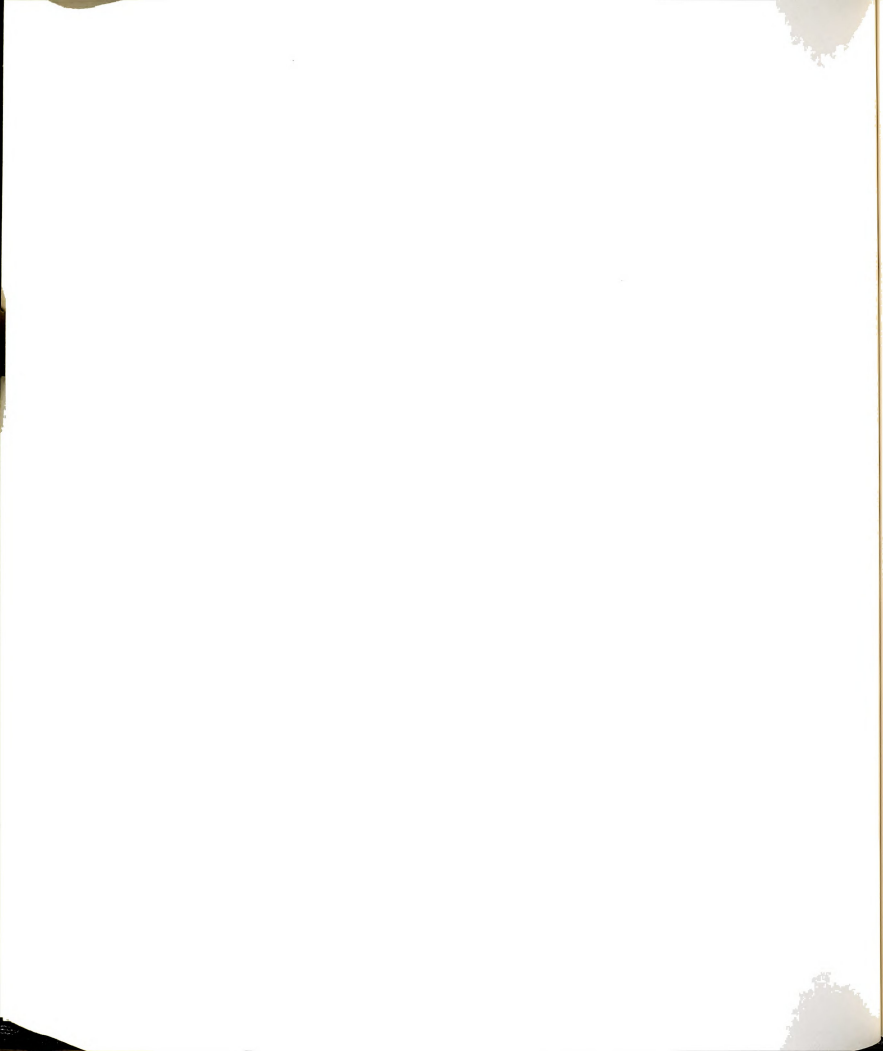
Eclipses.

Eclipses is a ~~phenomenon nature~~ natural phenomenon which will ~~occur~~ in a certain times, where it ~~will~~ can be predicted by experts. By accounting accurately the eclipse will be seen in some areas in the earth.

There are two kinds of eclipses. that are solar eclipse and lunar eclipse ~~Solar~~ eclipse occurs at the daylight but lunar eclipse occurs at the night.

I would like to explain each of them briefly as below.

Solar eclipse ~~occurs~~ when the ~~sun~~ moon lies between the earth and the sun, and it occurs at the daylight. Because of the moon, ~~lies~~ the sun closed and the shadow of the moon comes to the sun. A part of the sun which shut by the ~~moon~~ shadow will be dark. This darkness is watched by the ~~people~~ in the earth as a solar eclipse. The solar eclipse sometimes takes place in the morning, and sometimes in the afternoon. The length of time that the solar eclipse occurs ~~not so~~ not so long, depends on the moon where it lies. If the solar eclipse occurs, the sun shines is not so strong, just like at night. Solar eclipse can influences the life in the earth, like plants, because
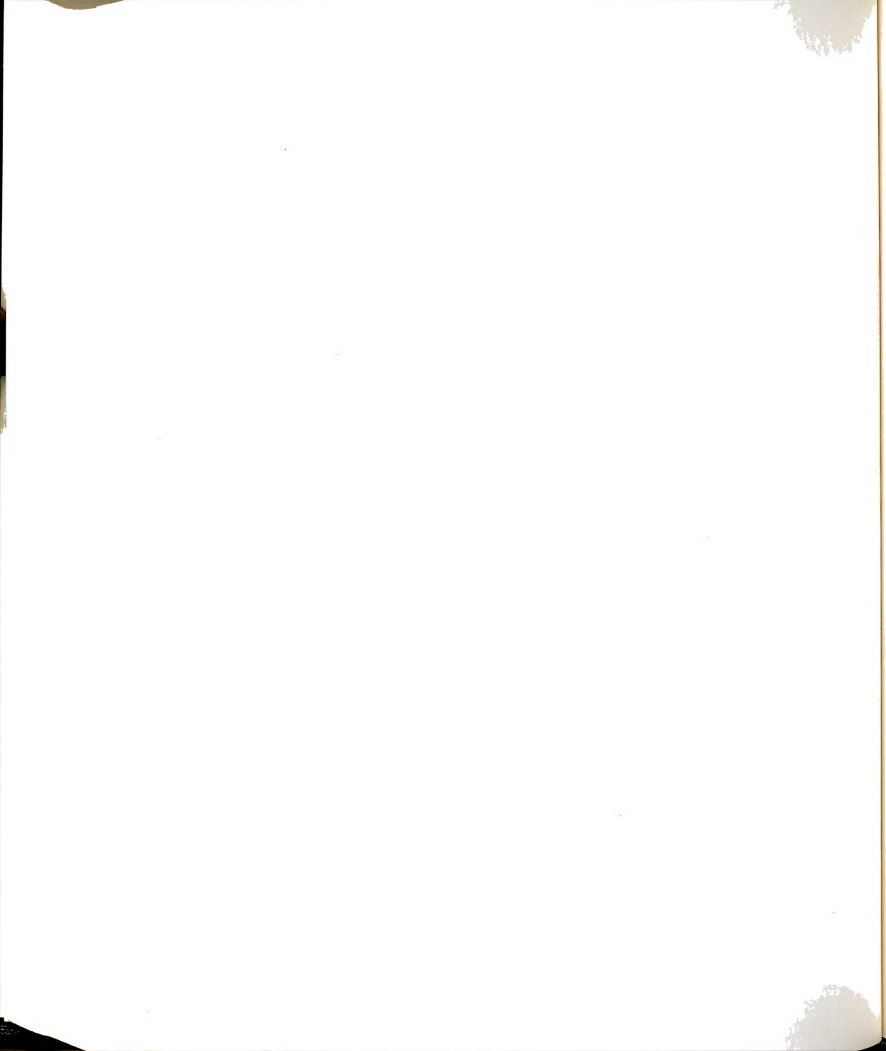
the plants need to get the sun shine. The birds
will go to its nest. and they feel that it become night.
Lunar eclipse occurs in the night when it is full
moon. Lunar eclipse is different from solar eclipse in the
position of the sun and the moon. It occur when the earth
lies between the sun and the moon. The length of time
where the lunar eclipse sometimes longer than the solar
eclipse. The effect of the lunar eclipse not as strong as
the solar eclipse, because the lunar eclipse doesn't
influence to the plants or animals.
Both, lunar and solar eclipse can occur two of
in two kinds, that is part eclipse and total eclipse
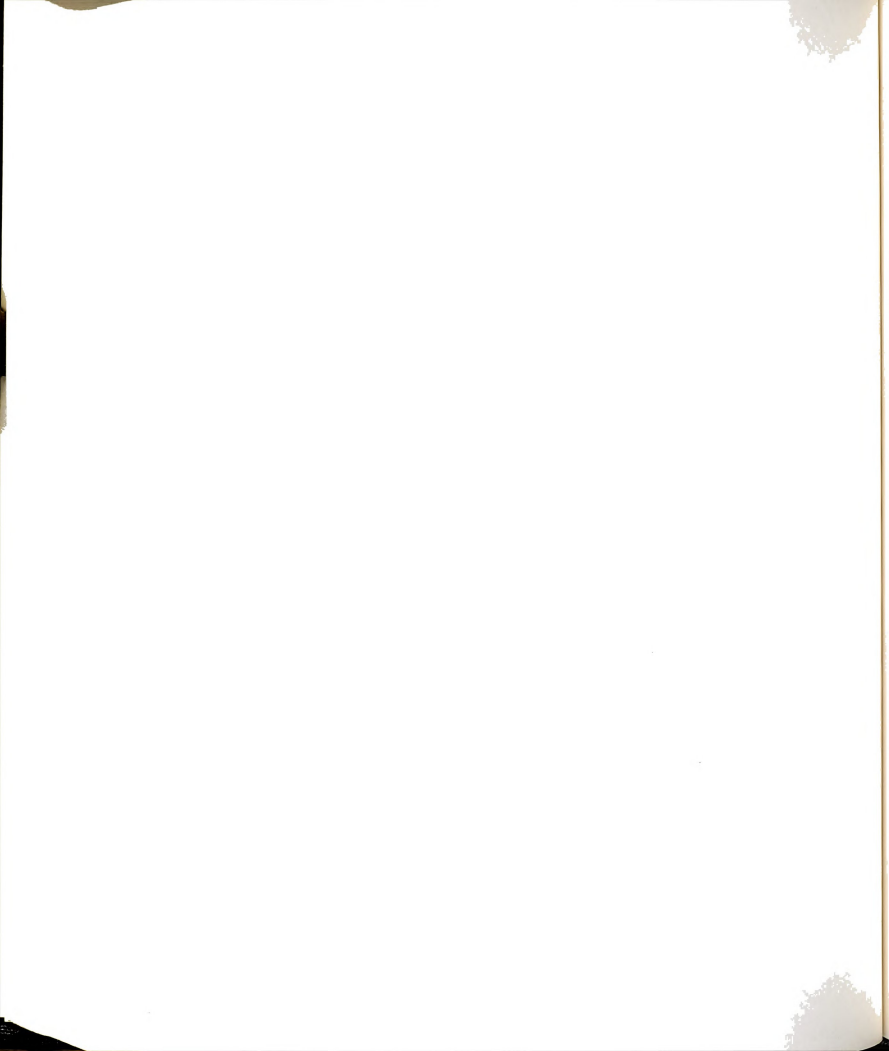
STUDENT NO. 2

Personal Characteristics

>   Age: 20-24
>   Level of Education: Graduate
>   Gender: Female
>   Amount of Reading: Little

Prior Knowledge Test

>   Fluency: High
>   Organization: Partial
>   Combined: Partial

Writing Performance

>   Overall Language Proficiency Score: 88
>   Holistic Writing Score: 79
>   Number of Words: 340
>   Number of Ideas: 3
>   Text Sophistication: Moderate
>   Global Cohererce: Partially coherent
>   Involvement: Low
>   Total Number of T-units: 29
>   Mean T-unit Length: 11.72
>   Amount of Subordination: Moderate
>   Total Number of Revisions: 10

Students' Associations to the Prompts

Topic No. 3: Eclipses:

The following words/phrases represent the central ideas of the topic, Eclipses.

Prompt No. 1, Shadow of Eclipses:

>   --Shadow sometimes hide the sun or the moon because
>   the earth is moving all the time
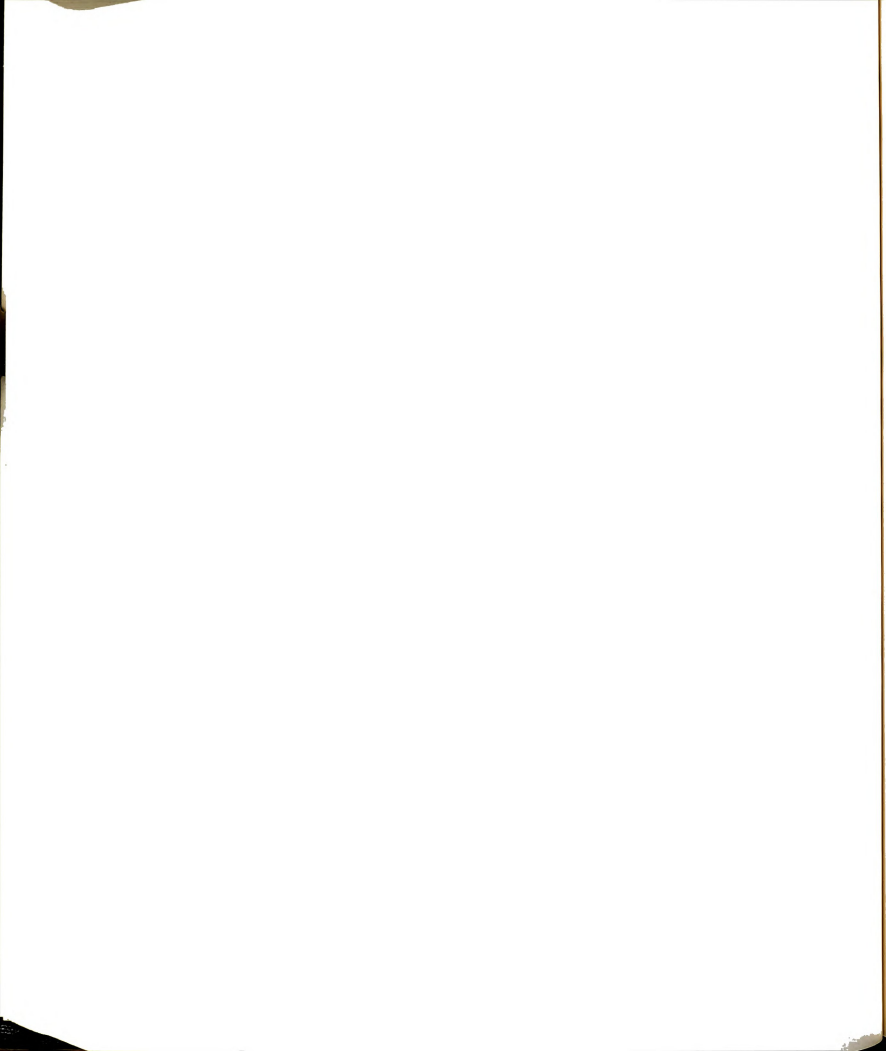
Prompt No. 2, Solar Eclipses:

> --You can't see the sun, because the moon stays between the sun and the earth and it (the moon) (hides the light from the sun

Prompt No. 3, Lunar Eclipses:

> --You can't see the moon, because the earth stays between the sun and the moon and it (the earth) prevents the light that shines the moon.

Prompt No. 4, Astronomers:

> --The study of the earth, and other planets or stars

Prompt No. 5, Eclipses Prediction:

> --The long time ago, when the reason of solar eclipses and the lunar eclipses are not known, people thought it will be the end of the earth, because the sun (or the moon) has disappeared suddenly.
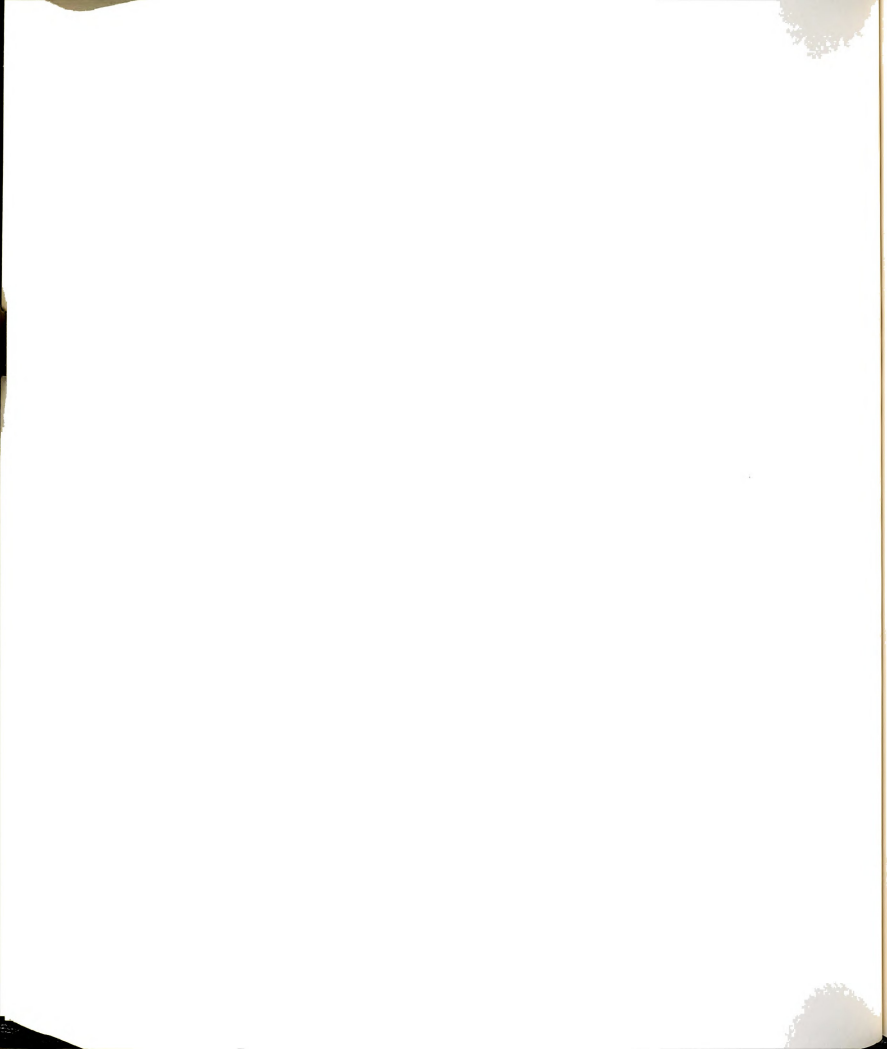
There are two types of eclipses, solar eclipse and lunar eclipse. The eclipse is concerned with three planets, the sun, the earth and the moon.

The solar eclipse occures when the moon comes between the sun and the earth. The moon disturbs the light from the sun to the earth, so in some part of the earth, people can not see the sun for a certain amount of time.

On the other hand, the lunar eclipse occures when the earth comes between the sun and the moon. We can see the moon when the sun is shining it, but with the situation of lunar eclipse, the earth disturbs the light from the sun that is shining the moon. In some part of the world, we can not see the moon, because of this.

These two kinds of eclipses occures, because the earth and the moon is moving around the sun. It happens once in a certain time, and it is not a strange thing to happen. However, in the early days
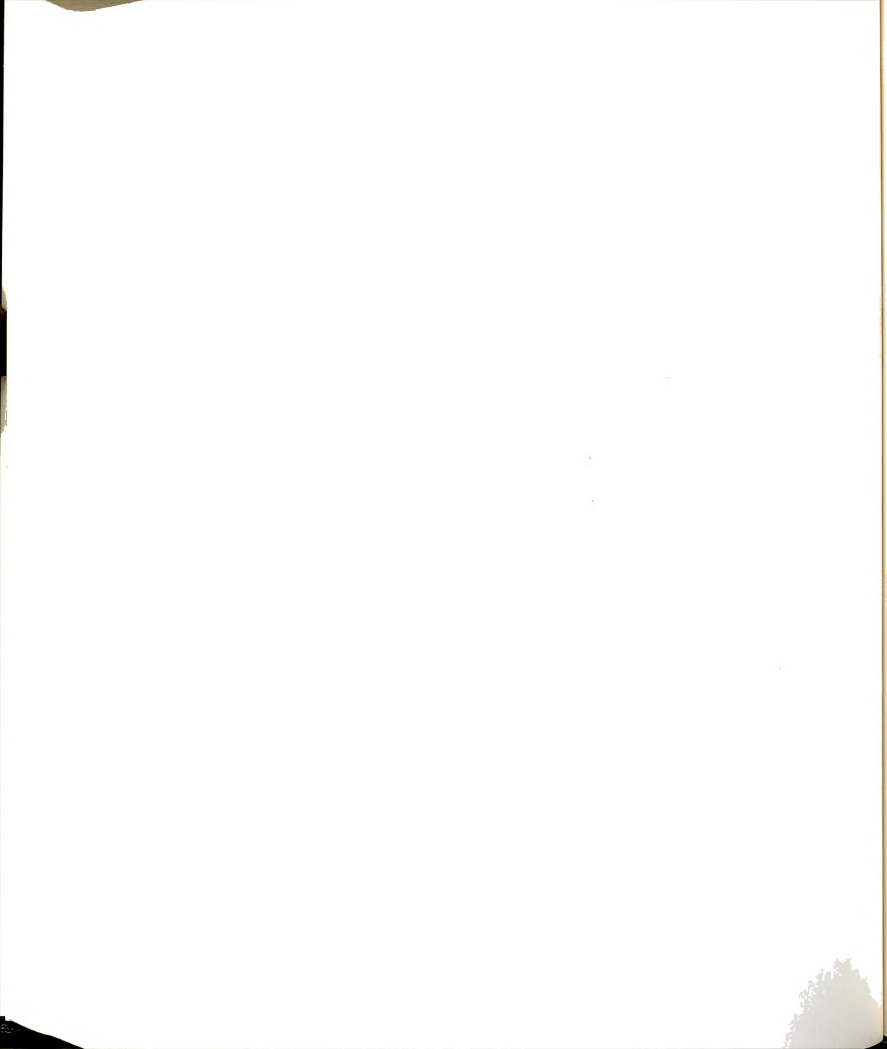
of our history, when the things in the planet are not well-examined and not clear for most of ~~the people~~ the people at that time, they thought it is a kind of & an end of the world when the eclipses occured. Because the sun hide away at the solar eclipse, people thought they will never see the sun again, and were afraid of consequences that will appear when the solar energy fade away. Gradually, these things are examined by scientists and the educated people, and became clear.

Nowadays, every child learn about solar eclipse and lunar eclipse when they are in the elementary school, so no one is afraid of eclipses any more. Because it occures not very often, people ~~are~~ look ~~forward~~ these day, forward to seeing this when it will occure.

It is just a one consequence of a natural — & , but it is considered very diffrently in the past and in the present. ~~It~~ I think the sun, the moon and the earth had created an interesting fact in our history.

< 30 minutes writing >
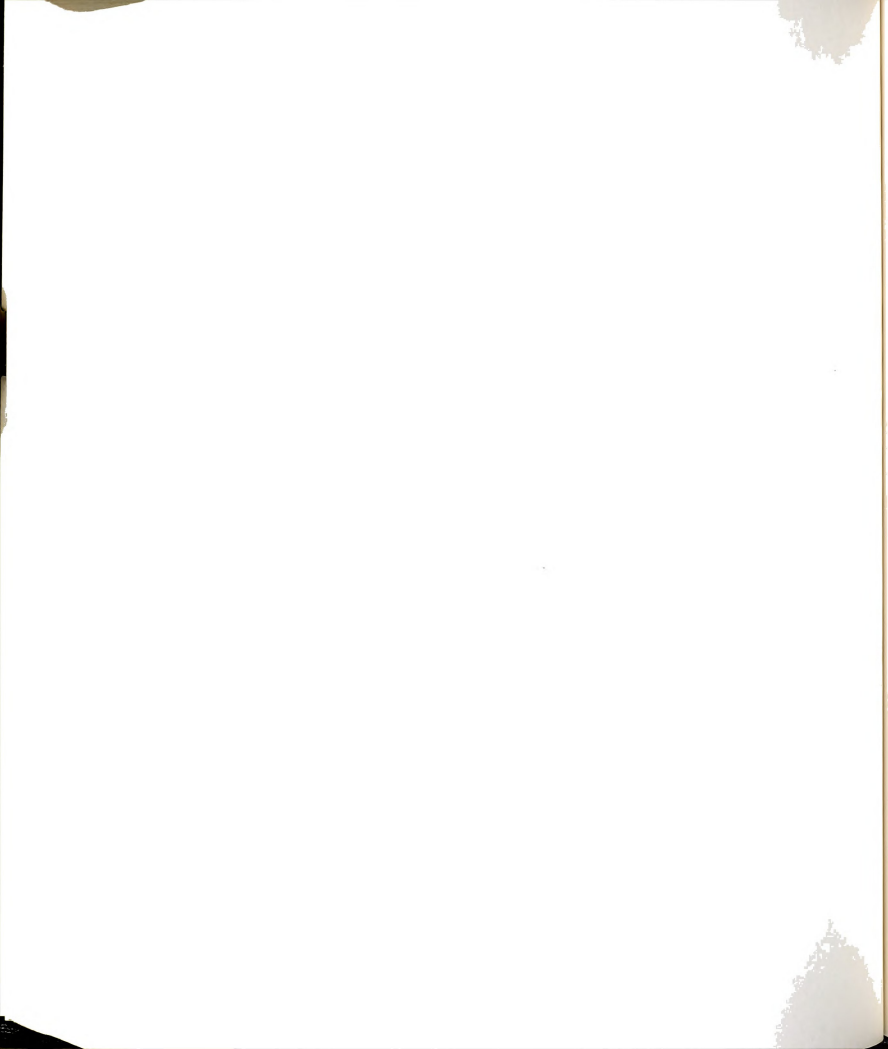
STUDENT NO. 3

Personal Characteristics

        Age: 20-24
        Level of Education: Graduate
        Gender: Male
        Amount of Reading: Little

Prior Knowledge Test

        Fluency: Partial
        Organization: Partial
        Combined: Partial

Writing Performance

        Overall Language Proficiency Score: 71
        Holistic Writing Score: 71
        Number of Words: 159
        Number of Ideas: 2
        Text Sophistication: Moderate
        Global Coherence: Coherent
        Involvement: Partial
        Total Number of T-units: 19
        Mean T-unit Length: 8.37
        Amount of Subordination: Low
        Total Number of Revisions: 1

Students' Associations to the Prompts

Topic No. 3: Eclipses:

The following words/phrases represent the central ideas
of the topic, Eclipses.

Prompt No. 1, Shadow of Eclipses:

        --Two kinds: Solar eclipses 8 lunar eclipses
        --In that situation we can't see sun or moon.
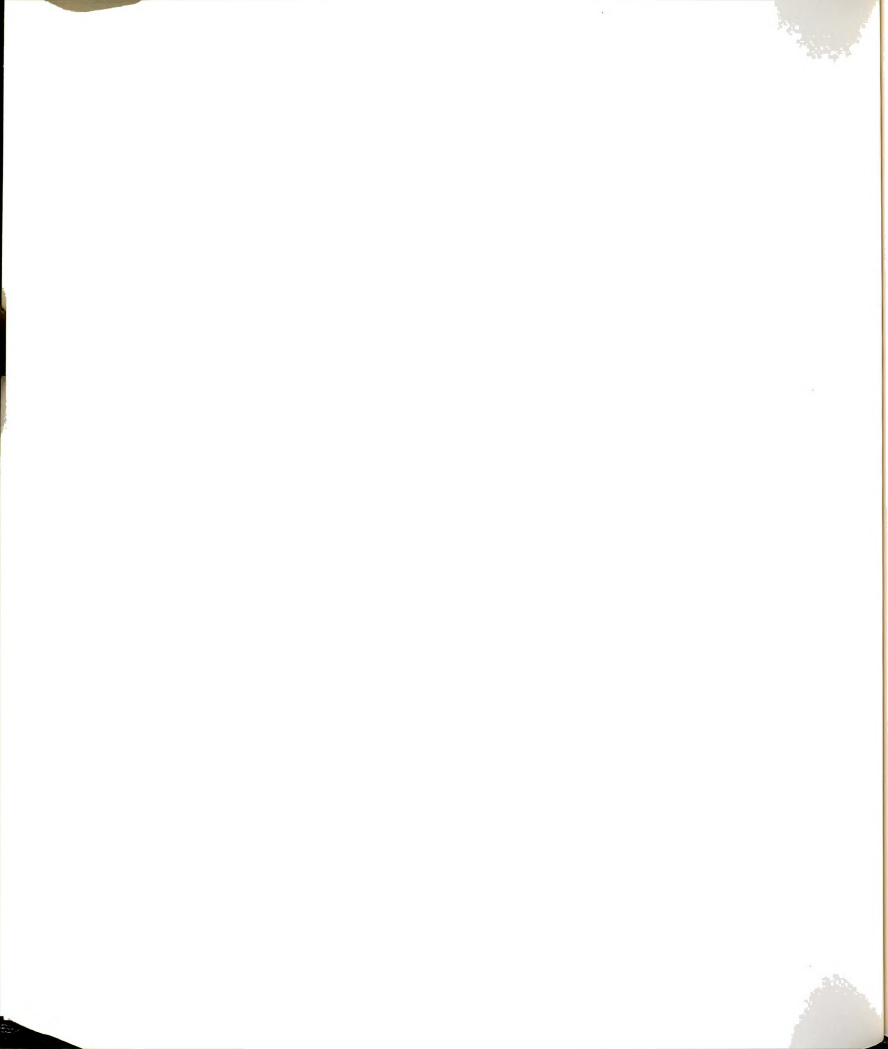
Prompt No. 2, Solar Eclipses:

--We can't have sunshine
--Makes dark
--We can see the sun with the help of specific instruments.
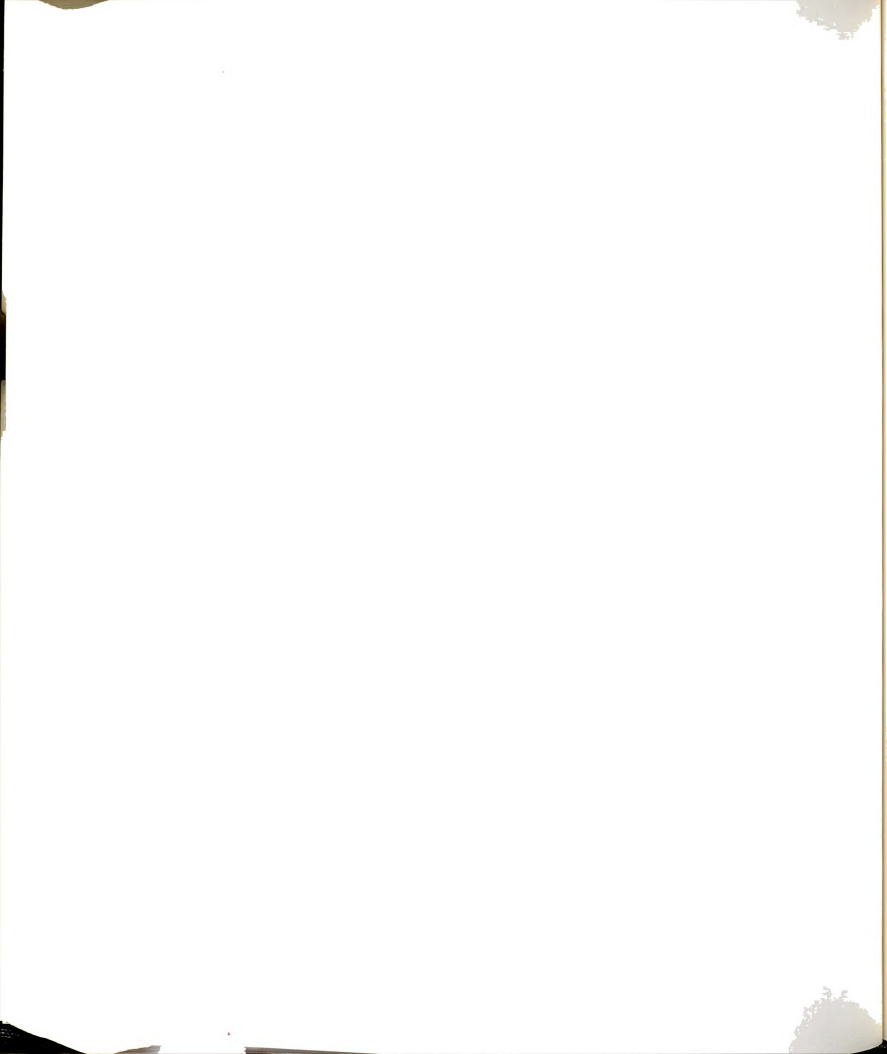--It occures once in a year.

Prompt No. 3, Lunar Eclipses:

--We can't see the moon
--It's not dangerous
--It occures once in a year

Prompt No. 4, Astronomers:

--A people who works about astronomy.
--They try to figure out mysterie of space.


Prompt No. 5, Eclipses Prediction:

--It's not dangerous that's why we don't need serious prediction.

Maybe, a few people knows something about eclipses just like me. There are two kinds of eclipses: sonar eclipses and lunar eclipses. While the sonar eclipse happens, the moon comes between sun and world. At that period of time some part of earth doesn't have sunshine, because moon blocks sunshine. It continues a few minutes. During the sonar eclipse people can't see the sunshine.

The other kind of eclipse is lunar eclipse. When the sun comes between moon and world, some part of the world can't get moonlight in the night. In this situation sun blocks moonlight. Lunar eclipse continues a couple of minutes.

As far as I know, neither sonar eclipse nor lunar eclipse are dangerous. They occur once in a year. In addition some people interest with eclipses. During the eclipse, some people try to see what's happening. They go astrology centers and try use teleschopes. In conclusion, it can be interesting if you are interested in astrology.
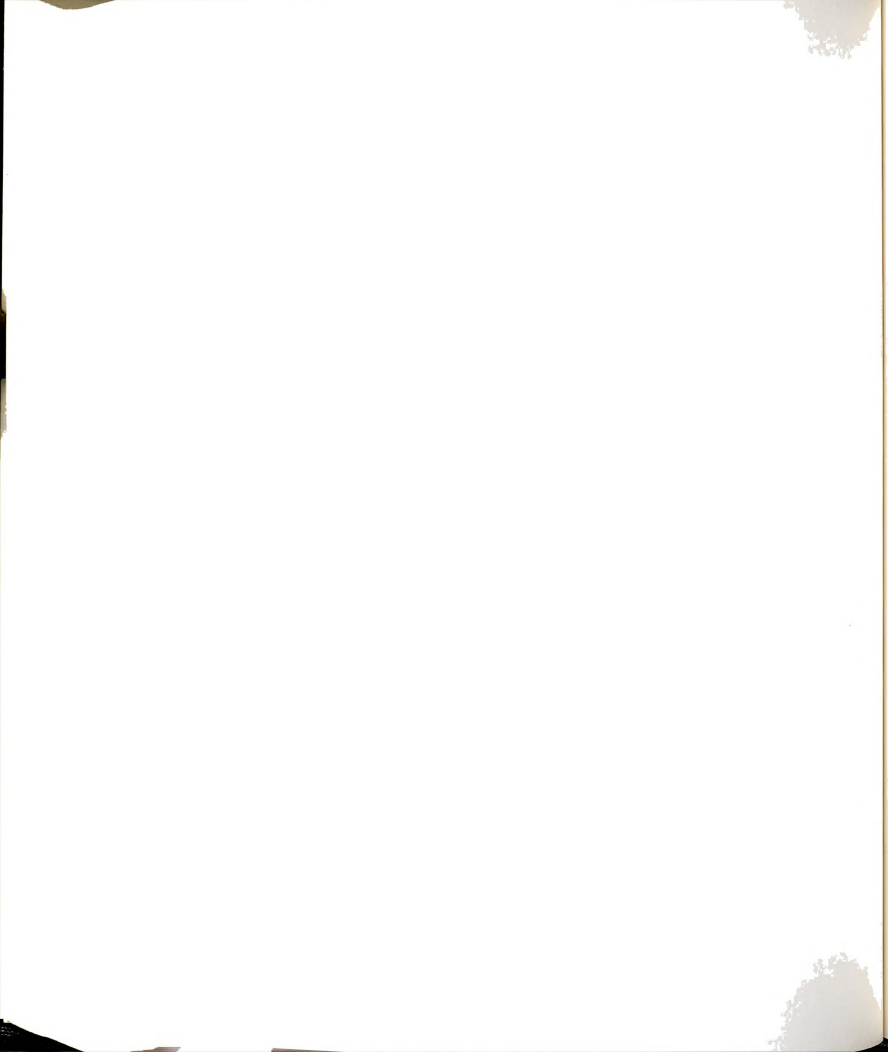
REFERENCES
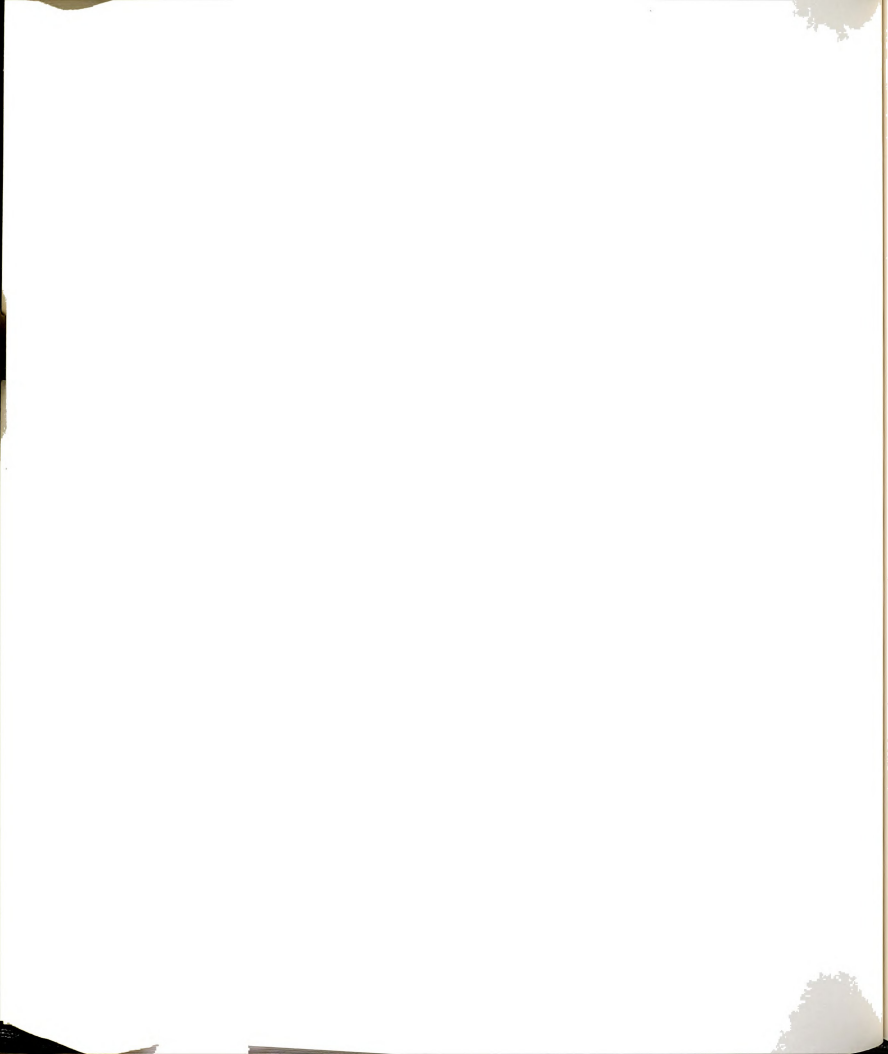
REFERENCES

Anderson, R. C. (1978). Schema-directed processes in language comprehension. In A. M. Lesgold, J. W. Pellegrino, S. D. Fokkema, and R. Glaser (Eds.), Cognitive Psychology and Instruction, (pp. 67-82). New York: Plenum Press.

Anderson, R. (1984). Role of the reader's schema in comprehension, learning, and memory. In R. Anderson, J. Osborn, & R. Tierney, eds., Learning to read in American schools: Basal readers and content texts. Hillsdale, N.J.: Lawrence Erlbaum Associates, Publishers.

Anderson, R. C., Reynolds, R. E., Schallert, D. L., and Geotz, E. T. (1977). Frameworks for comprehending discourse. American Educational Research Journal, 44, 367-382.

Applebee, A. N. (1982). Writing and learning in school settings. In M. Nystrand, ed., What writers know: The language process and structure of written discourse (pp. 365-381). New York: Academic Press.

Applebee, A. N. (1984). Contexts for learning to write: Studies of secondary school instruction. Norwood, N.J.: Ablex.

Bamberg, B. (1978). Composition instruction does make a difference: A comparison of the high school preparation of college freshmen in regular and remedial English classes. Research in the Teaching of English, 12, 47-59.

Bamberg, B. (1984). Assessing coherence: A reanalysis of essays written for the National Assessment of Educational Progress, 1969-1979. Research in Teaching of English, 18, 305-319.

Beaman, K. (1984). Coordination and subordination revisited: Syntactic complexity in spoken and written narrative discourse. In D. Tannen, Coherence in spoken and written discourse. Norwood, NJ: ABLEX.

192
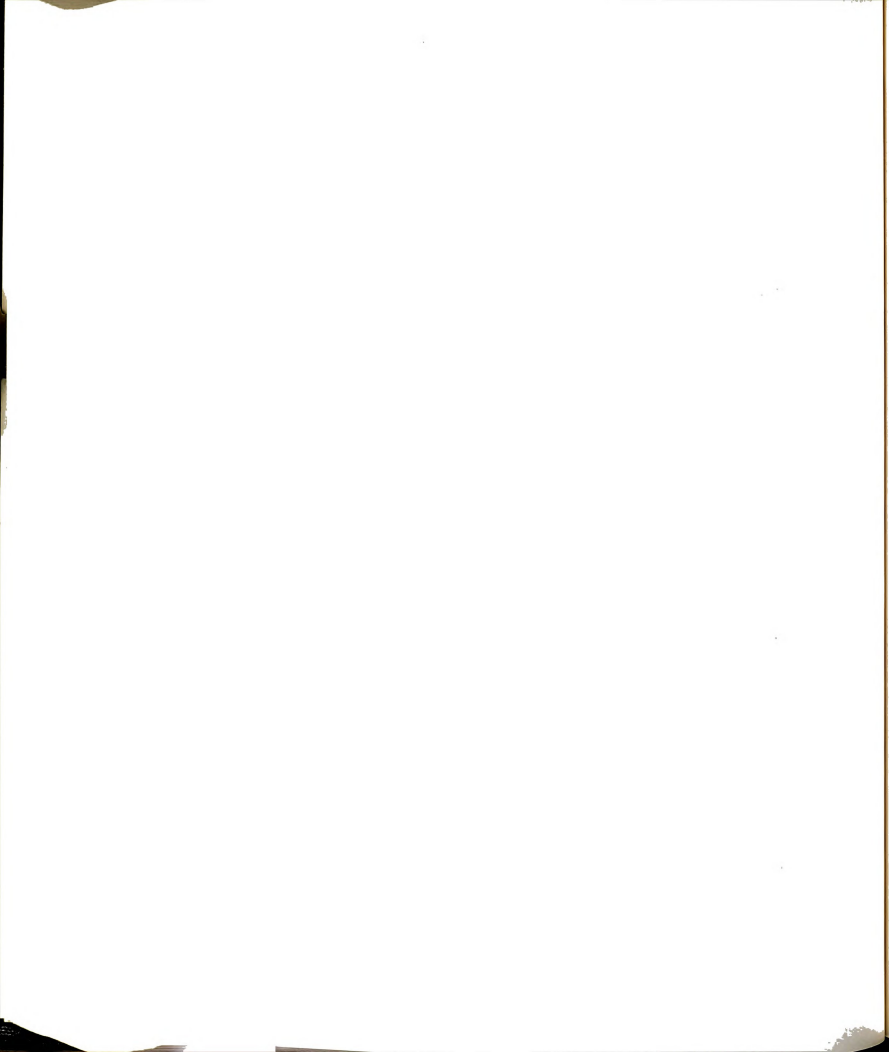
Black, J. B., Wilkes-Gibbs, D., and Gibbs, R.W. (1982). What writers need to know that they don't know they need to know. In M. Nystrand, ed., What writers know: The language, process, and structure of written discourse. New York: Academic Press.

Britton, J. (1978). The composing process and the functions of writing. In C. R. Cooper and L. Odell (Eds.), Research on Composing (pp. 13-29). Urbana, IL: National Council of Teachers of English.

Britton, J., Burgess, T., Martin, N., McLeod, A., and Rosen, H. (1975). The development of writing abilities (pp. 11-18). London: Macmillan Education.

Brown, G., and Yule, G. (1983). Discourse analysis. Cambridge: Cambridge University Press.

Calkins, L. M. (1983). Lessons from a child: On the teaching and learning of writing. Portsmouth: Heinemann Educational Books.

Canale, M. (1983). From communicative competence to communicative language pedagogy. In J. Richard and R. Schmidt (Eds.), Language and communication (pp. 2-27). New York: Longman.

Carrell, P. L. (1982). Cohesion is not coherence. TESOL Quarterly, 16, 479-488.

Carrell, P. L. (1983). Some issues in studying the role of schemata, or background knowledge in second language comprehension. Reading in a Foreign Language, 1, 81-92.

Carrell, P. (1986). "Second language pedagogy in the light of schema theory." Paper presented at the 6th Annual Midwest Regional TESOL Conference, Ann Arbor, Michigan, November 6-8.

Carrell, P. L. (1987). Content and formal schemata in ESL reading. TESOL Quarterly, 16, 461-481.

Chesky, J .A. (1984). The effects of prior knowledge and audience on writing. Unpublished doctoral dissertation, University of Kentucky, Lexington.
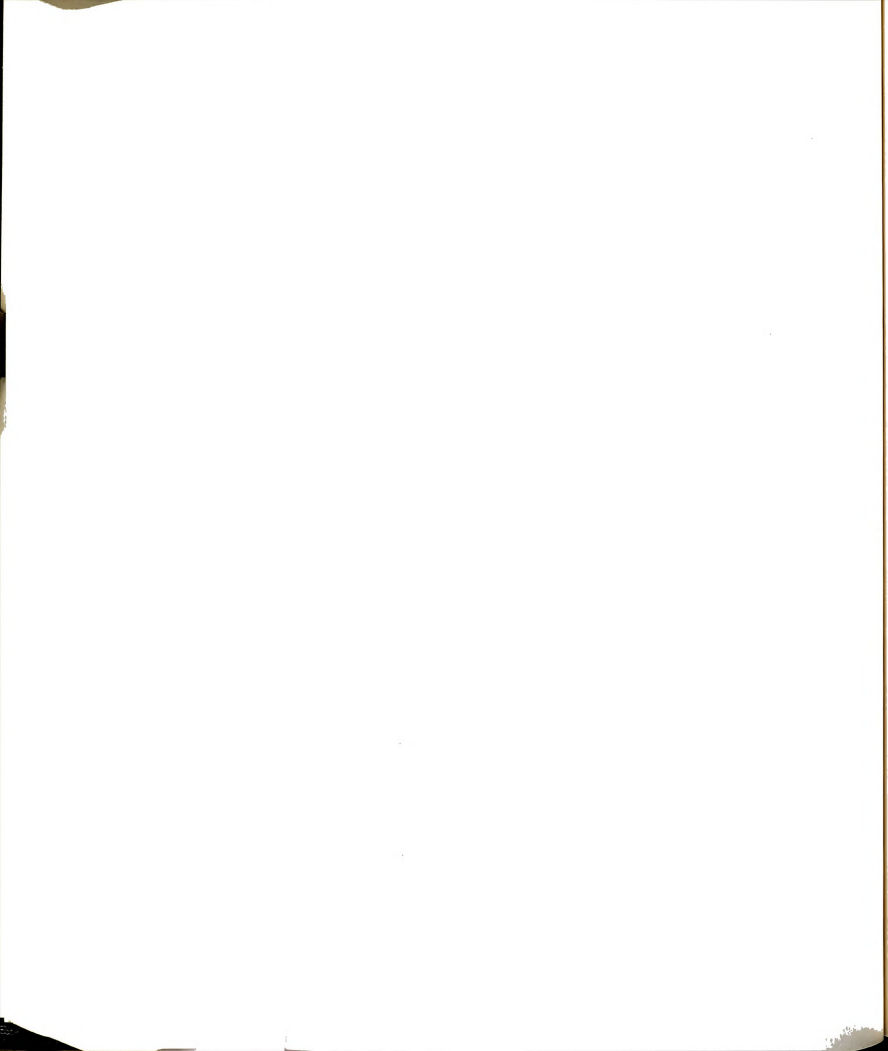
Chesky, J. A., and Hiebert, E. H. (1987). The effects of prior knowledge and audience on high school students' writing. The Journal of Educational Research, 80, 304-313.

Chiesi, H. L., Spilich, G. J., and Voss, J. F. (1979). Acquisition of domain-related information in relation to high and low domain knowledge. Journal of Verbal Learning and Verbal Behavior, 18, 257-273.

Chomsky, N. (1959). Review of Skinner's verbal behavior. Language, 32, 26-58.

Clarke, M., and Silberstein, S. (1977). Toward a realization of psycholinguistic principles in the ESL reading class. Language Learning, 27, 135-154.

Connor, U. (1984). A study of cohesion and coherence in English as a second language students' writing. Papers in Linguistics: International Journal of Human Communication, 17, 301-316.

Cooper, A. (1988). Enhancing coherence through cohesiveness. Written Communication, 5, 352-267.

Coulthard, M. (1977). An introduction to discourse analysis. Longman.

Crowhurst, M. (1980). Syntactic complexity and teachers' quality ratings of narrations and arguments. Research in the Teaching of English, 14, 223-231.

Cziko, G. A. (1980). Language competence and reading strategies: A comparison of first- and second-language oral reading errors. Language Learning, 30, 101-114.

DeGroff, L. (1986). The influence of prior knowledge on process-approach writing tasks. ERIC Ed 269758.

Devine, J. M. (1980). Developmental patterns in native and nonnative reading acquisition. Unpublished doctoral dissertation, Michigan State University, East Lansing, MI.

Donovan, T., and McClelland, B. (1980). Eight approaches to teaching composition. Urbana, IL: National Council of Teachers of English.
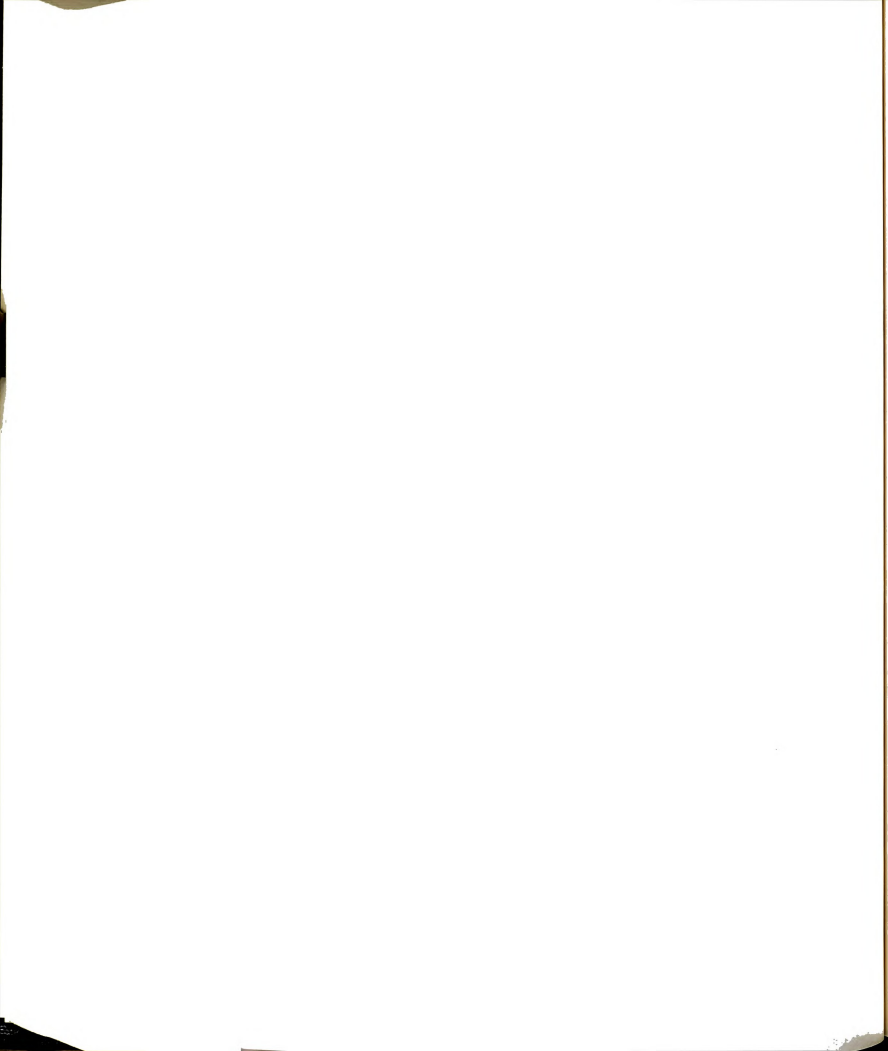
Eamon, D. (1979). Selection and recall of topical information in prose by better and poorer reaaers. Reading Research Quarterly, 14, 244-257.

Elley, W., Barham, I., Lamb, H., and Wyllie, M. (1976). The role of grammar in a secondary school curriculum. Research in the Teaching of English, 10, 5-21.

Eskey, D. E. (1988). Holding in the bottom: An interactive approach to the language problem of second language readers. In P. Carrell, J. Devine, and D. Eskey, Interactive approaches to second language reading (pp. 93-100). Cambridge; Cambridge University Press.

Farr, R. (1969). What can be measured? Newark, DE: International Reading Association.

Fish, S. (1980). Is there a text in this class? Cambridge, MA: Harvard University Press.

Flower, L. S., and Hayes, J. R. (1977). Problem-solving strategies and the writing process. College English, 39, 449-461.

Flower, L. S., and Hayes, J. R. (1981). A cognitive process theory of writing. College Composition and Communication, 32, 365-387.

Goodman, K. (1967). Reading: A psycholinguistic guessing game. Journal of the Reading Specialist, 4, 13-26.

Goodman, K., and Goodman, Y. (1982). Learning about psycholinguistic processes by analyzing oral reading. In H. B. Allen and M. Linn, ed., Readings in Applied English Linguistics. New York: Appleton-Century-Crofts.

Graves, D. H. (1983). Writing: Teachers and children at work. Exeter, NH: Heinemann.

Haliday, M. A. K., and Hassan, R. (1976). Cohesion in English. London: Longman.

Hanania, E., and Shikhani, M. (1986). Interrelation-ships among three tests of language proficiency: Standardized ESL, Cloze, and Writing. TESOL Quarterly, 20, 97-109.
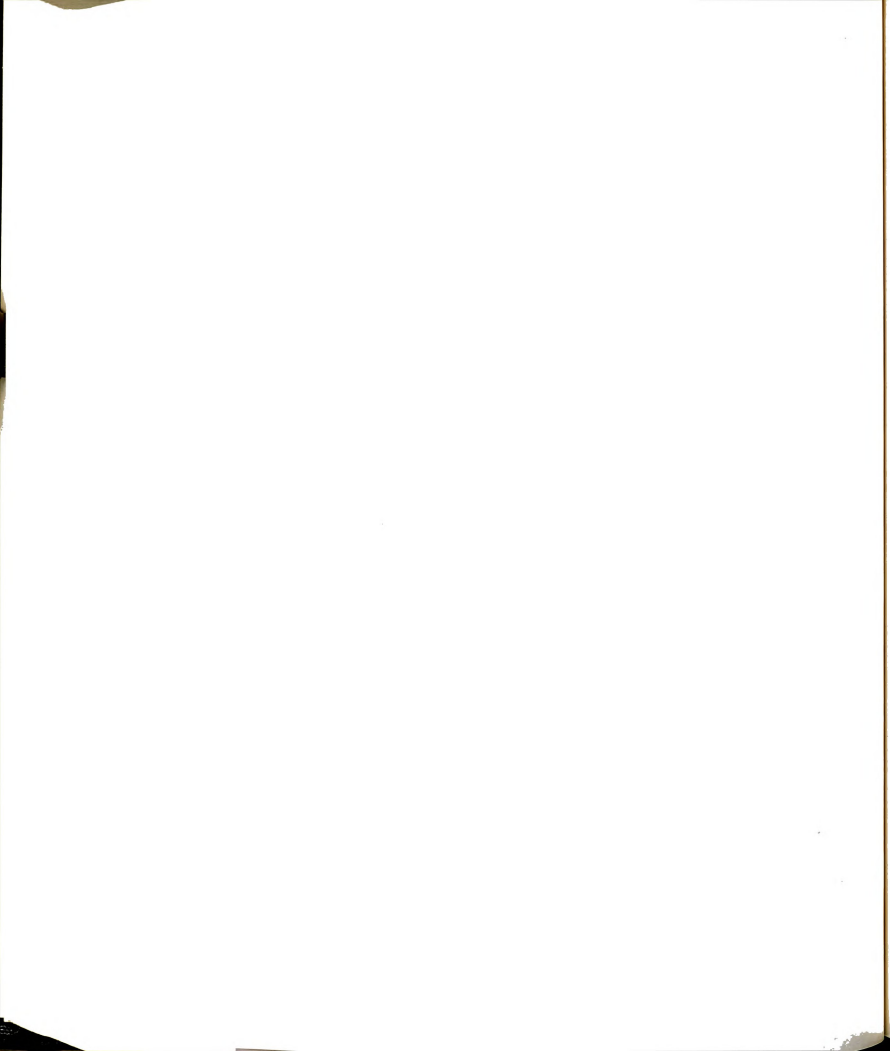
Hilgers, T. L. (1982). Experimental control and the writing stimulus: The problem of unequal familiarity with content. Research in the Teaching of English, 16, 381-390.

Hoetker, J. (1982). Essay examination topics and students' writing. College Composition and Communication, 33, 377-392.

Hudson, T. (1982). The effects of induced schemata on the "short circuit" in L_2 reading: Non-decoding factors in L_2 reading performance. Language Learning, 32, 1-31.

Hunt, K. (1965). Grammatical structures written at three grade levels. Research Report No. 3. Champaign, IL: National Council of Teachers of English.

Iser, W. (1978). The act of reading. Baltimore: John Hopkins University Press.

Johns, A. M. (1986). Coherence and academic writing: Some definitions and suggestions for teaching. TESOL Quarterly, 20, 247-265.

Johnson, P. (1981). Effects on reading comprehension of language complexity and cultural background of a text. TESOL Quarterly, 15, 169-181.

Jones, C. S. (1985). Problems with monitor use in second language composing. In M Rose (ed.), When a writer can't write: Studies on writer's block and other composing process problems (pp. 969-118). New York: Guilford Press.

Jones, C. S., and Tetro, J. (1987). Composing in a second language. In A. Matsuhashi (Ed.), Writing in real time: Modelling the production processes (pp. 34-57). Norwood: APLEX.

Judy, S. (1980). The experiential approach: Inner worlds to outer worlds. In D. Foster, ed., Eight approaches to teaching compositions: Theories, theorists, issues, problems (pp. 37-51). Boynton: Cook Publishers.
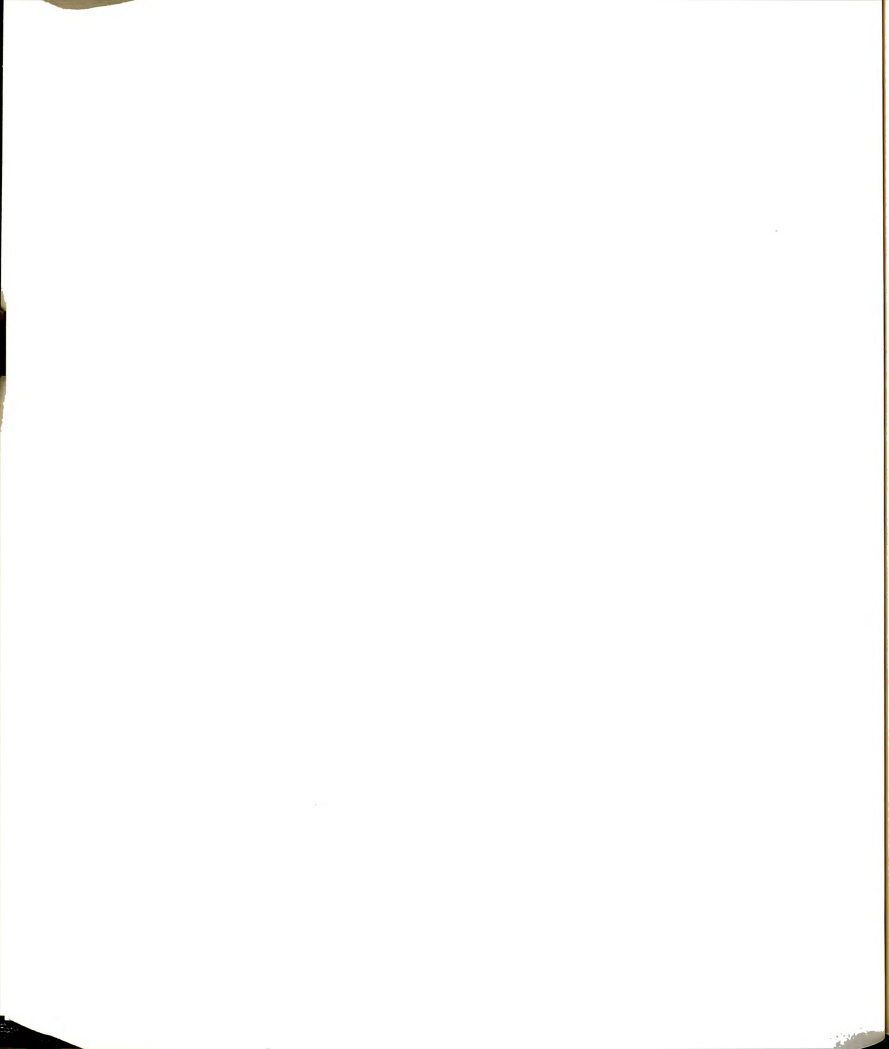
Kellogg, R. T. (1987). Effects of topic knowledge on the allocation of processing time and cognitive efforts to writing process. Memory and Cognition, 15, 256-266.

Kincaid, G. L. (1953). Some factors affecting variations in the quality of students' writing. Unpublished Ed.D. Dissertation (Michigan State College) Michigan State University.

Kitao, S. K. (1987). Schema theory: Reading and second language learning. Unpublished dissertation. Department of Communication, Michigan State University.

Krashen, S. (1982). Principles and practice in second language learning. Oxford: Pergamon.

Krashen, S. (1984). Writing: Research, theory, and application. Oxford: Pergamon.

Langer, J. A. (1982). Facilitating text processing: The elaboration of prior knowledge. In J. A. Langer and M. T. Smith-Burke (Eds.), Reader meets Author /Bridging the gap (pp. 149-162). Newark: International Reading Association.

Langer, J. A. (1984). The effects of available information on responses to school writing tasks. Research in the Teaching of English, 18, 22-44.

Langer, J. A., & Nicolich, M. (1981). Prior knowledge and its relationship to comprehension. Journal of Reading Behavior, 4, 373-379.

Lay, N. D. S. (1982). Composing processes of adult ESL learners: A case study. TESOL Quarterly, 16, 406.

Lee, J. F. (1986). The effects of three components of background knowledge on second language reading. The Modern Language Journal, 70, 350-354.

Light, R. L., Xu, M., and Mossop, J. (1987). English proficiency and academic performance of international students. TESOL Quarterly, 21, 251-261.

Littlewood, W. (1984). Foreign and second language learning: Language acquisition research and its implications for classroom. Cambridge: Cambridge University Press.
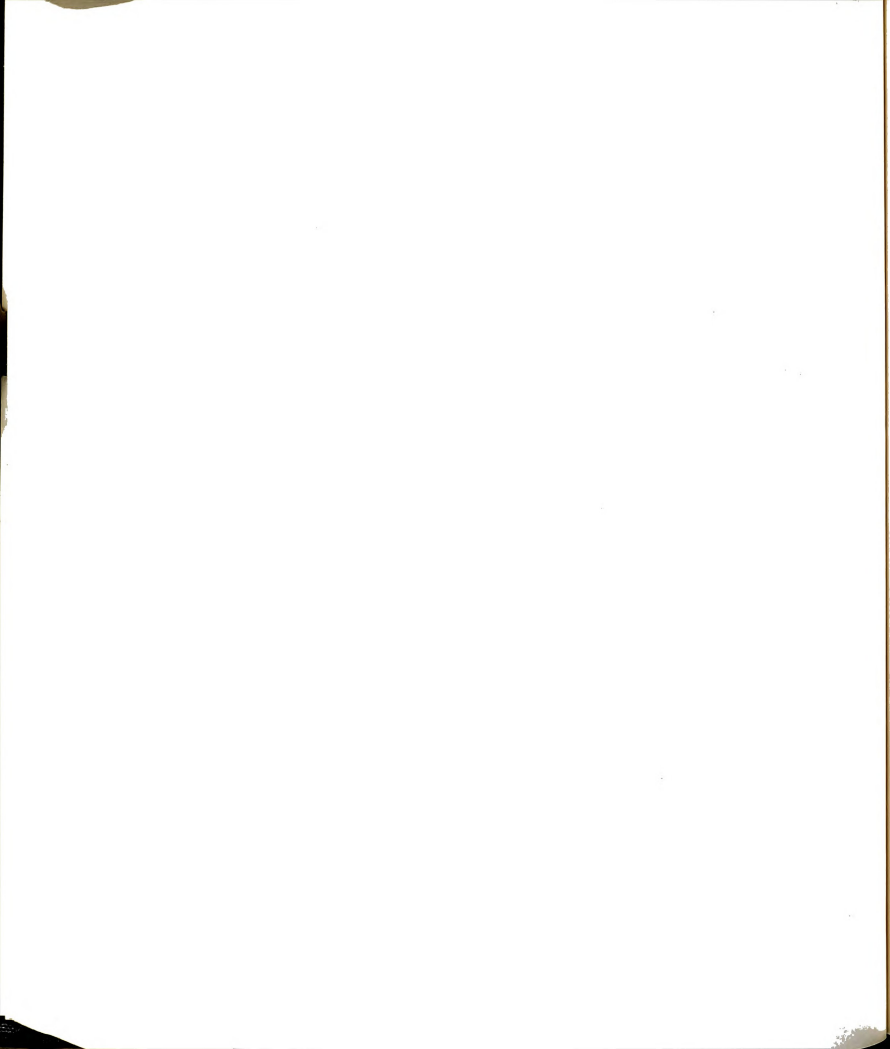
Loban, W. D. (1976). Language development: Kindergarten through grade twelve. Research Report, 18, Urban, Ill: National Council of Teachers of English.

McCutchen, D. (1986). Domain knowledge and linguistic knowledge in the development of writing ability. Journal of Memory and Language, 431-444.

McKay, S. (1984). Some limitations in teaching composition. On TESOL '83, pp. 187-194.

McLaughlin, B. (1988). Theories of second-language learning. London: Edward Arnold.

Mellon, J. C. (1969). Transformational sentence combining. A method for enhancing the development of syntactic fluency in English composition. Research Report No. 10. Champaign, IL: National Council of Teachers of English.

Meyers, B. F. (1985). Prose analysis: Purposes, procedures, and problem. In B. K. Britton and J. B. Black (Eds.), Understanding expository text: a theoretical and practical handbook for analyzing explanatory text (pp. 11-64). N.J.: Lawrence Erlbaum.

Mohan, B. A., and Lo, W. A. (1985). Academic writing and Chinese students: Transfer and development factors. TESOL Quarterly, 19, 515-534.

Mosenthal, P. (1984). The influence of classroom ideology on children's production of narrative text. American Educational Research Journal, 85, 1-28.

Mosenthal, P., Conley, M. W., Collella, A., and Davidson-Mosenthal, R. (1985). The influence of prior knowledge and teacher lesson structure on children's production of narratives. The Elementary School Journal, 85, 621-634.

Murray, D. M. (1978). Internal revision: A process of discovery. In C. Cooper and L. Odell (Eds.), Research on composing (pp. 85-103). Urbana, IL: National Council of Teachers of English.

Nas, G. (1975). Determining the communicative value of written discourse produced by L2 learners. Utrecht, The Netherlands: Institute of Applied Linguistics.
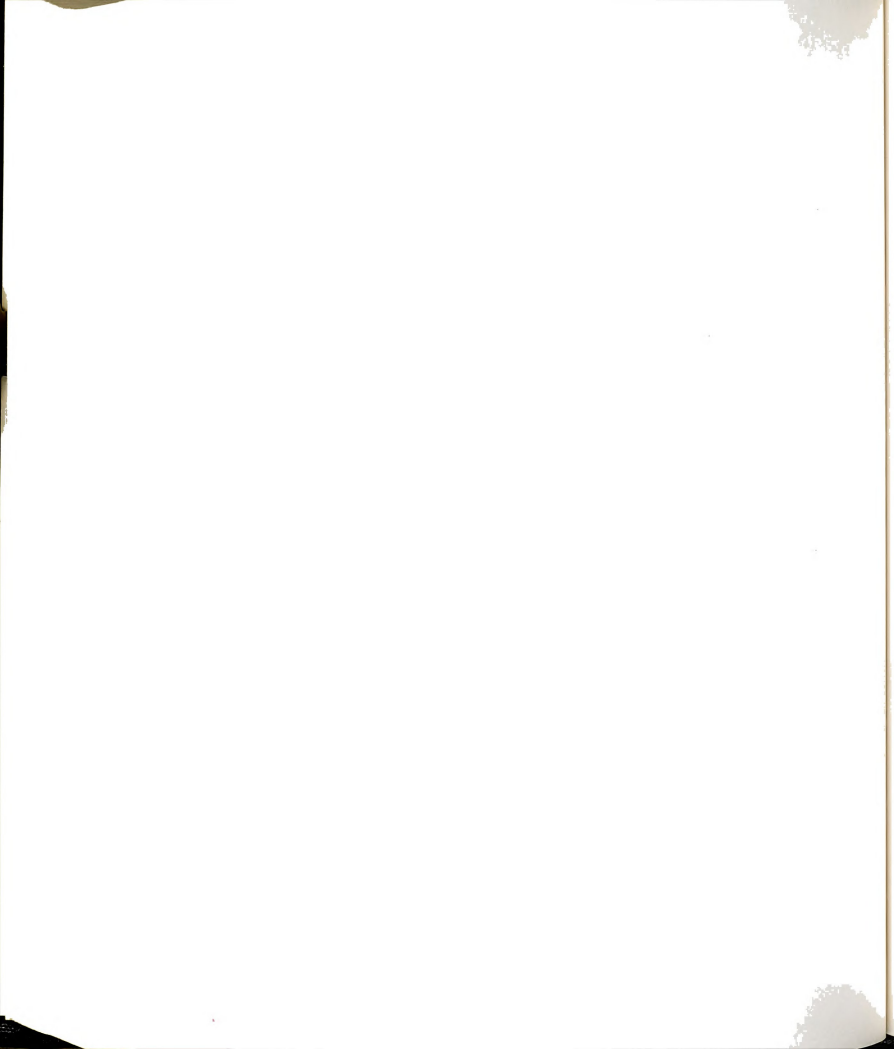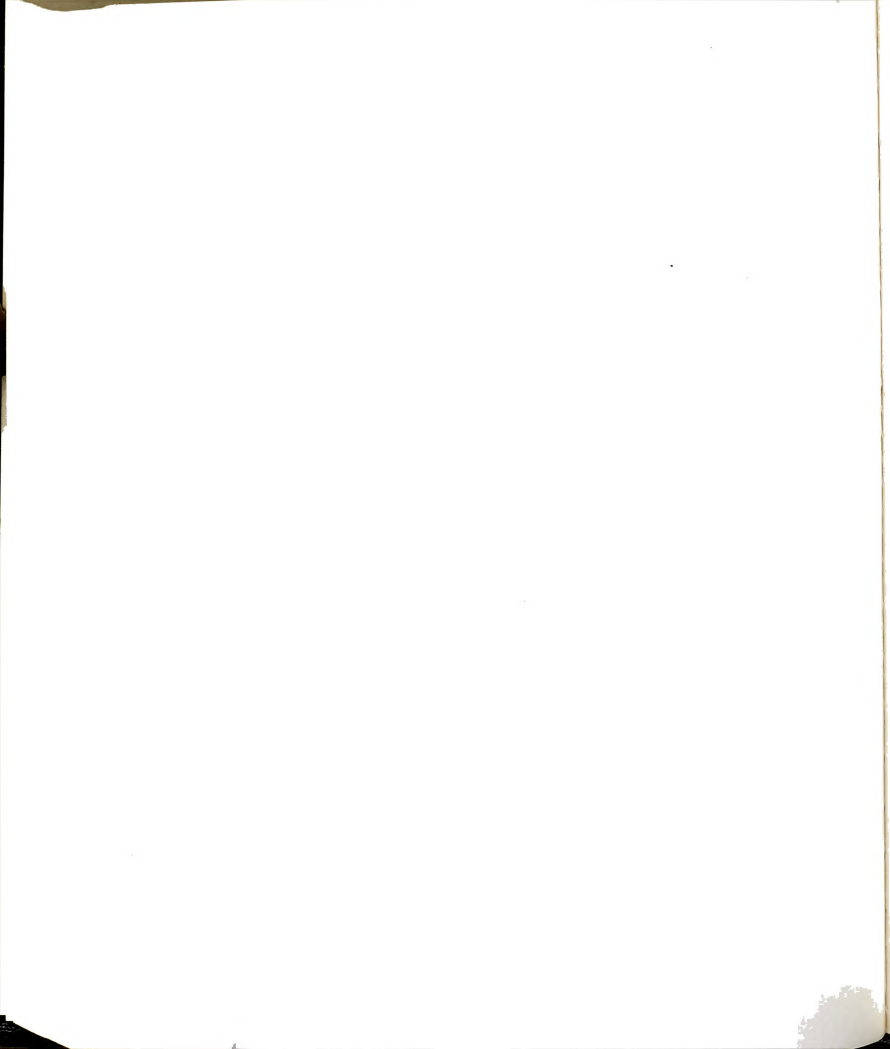
Newell, G. E. (1984). Learning from writing in two content areas: A case study/protocol analysis. Research in the Teaching of English, 18, 265-287.

Newell, G. E., and MacAdam, P. (1987). Examining the source of writing problems: An instrument for measuring writer' topic-specific knowledge. Written Communication, 4, 156-174.

O'Hare, F. (1973). Sentence combining: Improving student writing without formal grammar instruction. Research Report No. 15. Urbana, IL: National Council of Teachers of English.

Ostler, S. E. (1987). A study in the contrastive rhetoric of Arabic, English, Japanese, and Spanish. Unpublished dissertation, Faculty of the School of Education, University of Southern California.

Pearson, P., Hansen, J., & Gordon, C. (1979). The effect of background knoweldge on young children's comprrpeehension of explicit and implicit information. Journal of Reading Behavir, 11, 201-209.

Perl, S. (1979). The composing processes of unskilled college writers. Research in the Teaching of English, 13, 317-336.

Phelps, L. W. (1985). Dialectics of coherence: Toward an integrative theory. College English, 47, 12-29.

Raimes, A. (1985). What unskilled ESL students do as they write: A classroom study of composing. TESOL Quarterly, 19, 229-258.

Raimes, A. (1987). Language proficiency, writing ability, and composing strategies: A study of ESL college student writers. Language Learning, 37, 439-467.

Reid, J. (1987). ESL composition: The expectations of the academic audience. TESOL Newsletter, 4, p. 34.

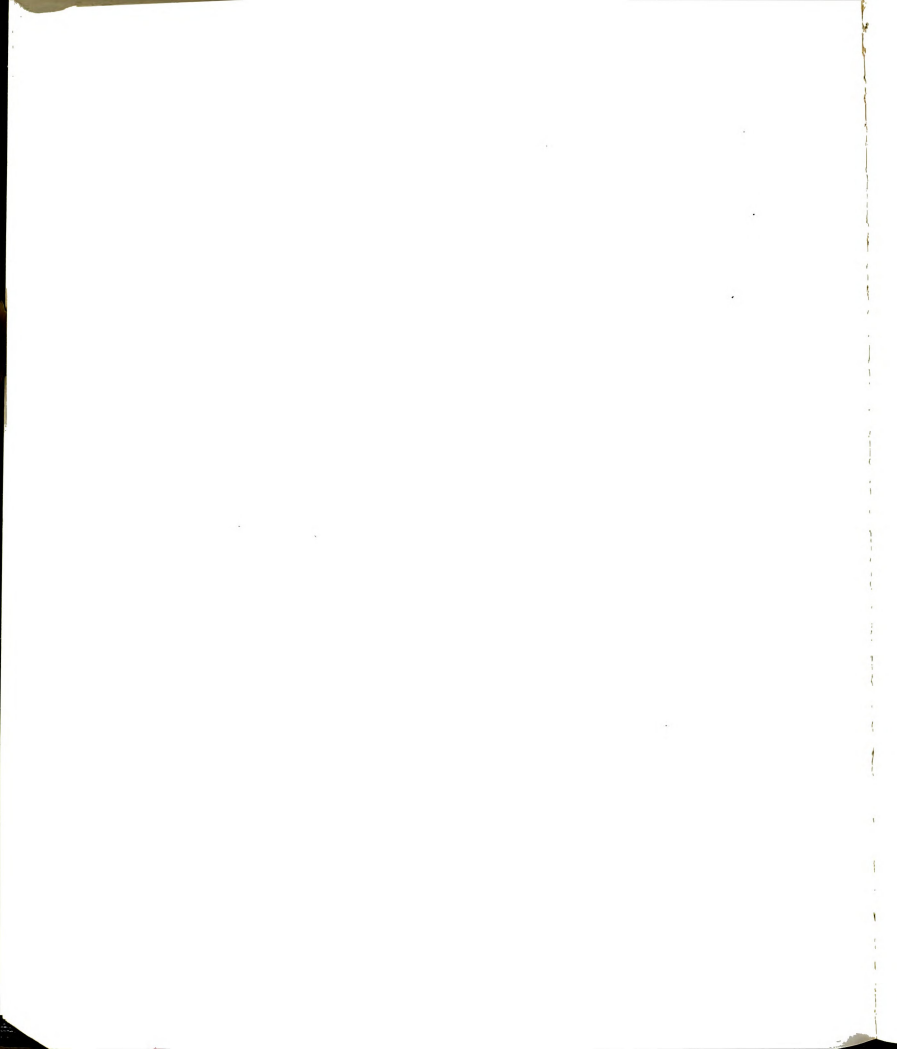Rosenblatt, L. (1978). The reader, the text, and the poem. Carbondale, IL: Southern Illinois University Press.
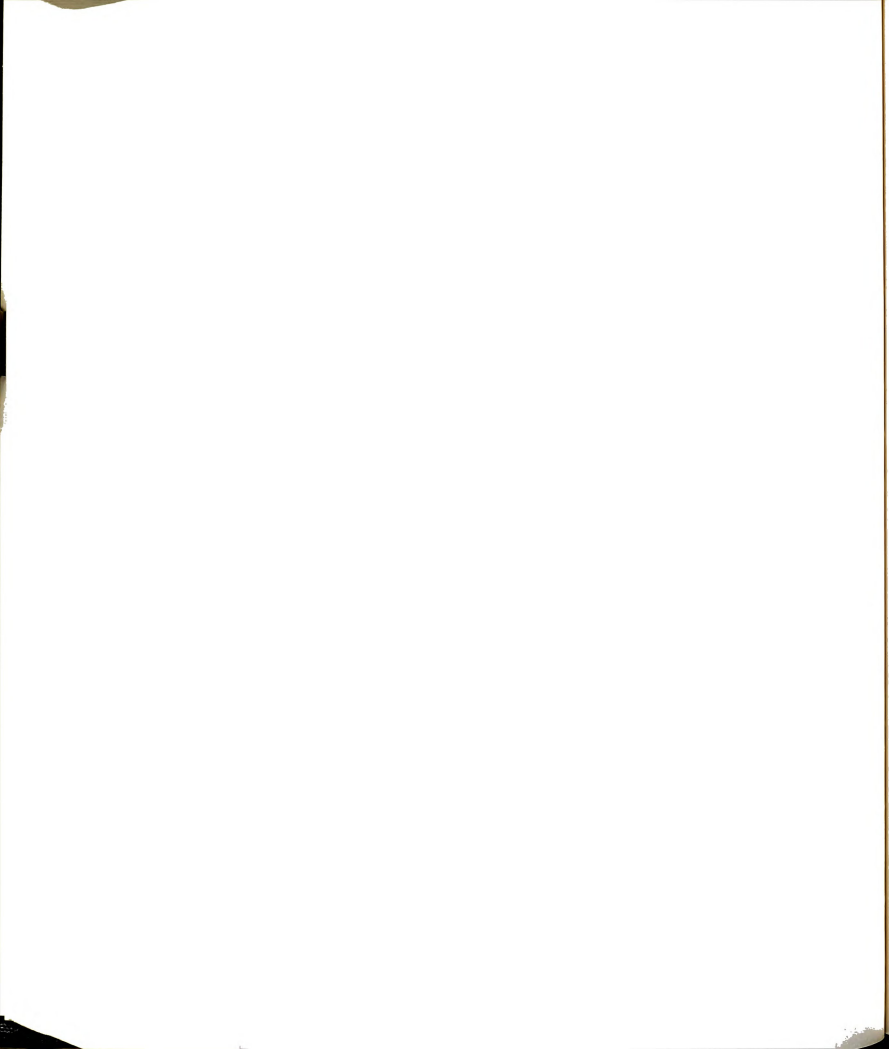
Rumelhart, D. E. (1975). Notes on a schema for stories. In D. G. Bobrow, and A. M. Collins (Eds.), Representation and understanding studies in cognitive science. New York: Academic Press.

Rumelhart, D. E. (1977). Introduction to human information processing. New York: Wiley.

Rumelhart, D. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce, and W. E. Brewer (Eds.), Theoretical issues in reading comprehension. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Selinker, L., Todd-Trimble, M., and Trimble, L. (1978). Rhetorical function-shifts in EST discourse. TESOL Quarterly, 12, 311-320.

Sharon, A. (1972). English proficiency, verbal aptitude, and foreign students success in American graduate schools. Educational and Psychological Measurement, 32, 425-431.

Skinner, B. F. (1957). Verbal behavior. New York: Appleton-Century-Crofts.

Sommers, N. (1980). Revision strategies of student writers and experienced adult writers. College Composition and Communication, 31, 378-388.

Steffensen, M., Joag-Dev, C., & Anderson, R. (1979). A cross-cultural perspective on reading comprehension. Reading Quarterly, 15, 10-29.

Stosky, S. (1983). Research on reading/writing relationships: A synthesis and suggested directions. Language Arts, 60, 627-642.

Stroethoff, J. (1988). The effect of prior knowledge, prior interest, and learning on writing. Unpublished Doctoral Dissertation, Michigan State University, East Lansing, MI.

Swaffar, J. K. (1988). Readers, texts, and second languages: The interactive process. The Modern Language Journal, 72, 123-150.

Taylor, B. (1979). Good and poor readers' recall of familiar and unfamiliar text. Journal of Reading Behavior, 25, 326-329.
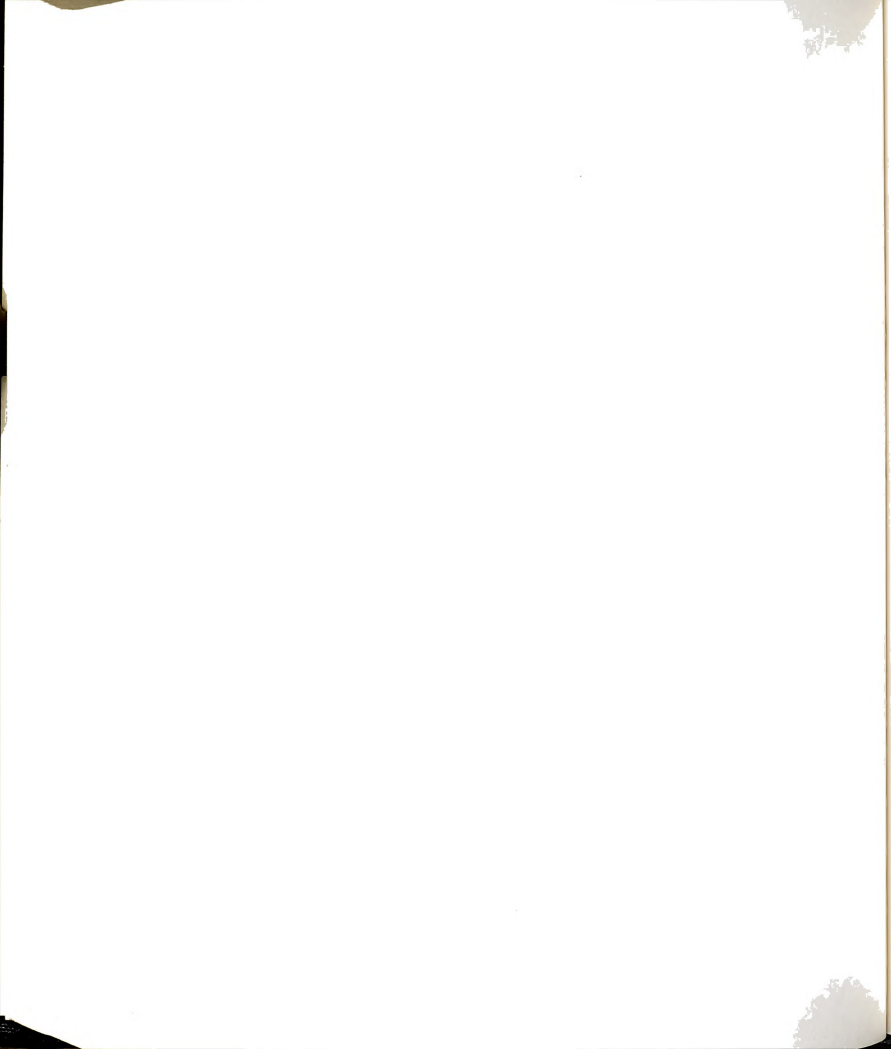
Talor, B. (1981). Content and written form: A Two-way street. *TESOL Quarterly, 15,* 5-12.

Thomas, G. P. (1986). Mutual knowledge: A theoretical basis for analyzing audience. *College English, 48,* 580-594.

Voss, J., Vesonder, G. T., and Spilich, G. J. (1980). Text generation and recall by high-knowledge and low-knowledge individuals. *Journal of Verbal Learning and Verbal Behavior, 19,* 651-667.

Waltman, J. L. (1983). *Grammar competency and business communications.* Paper presented at the meeting of th Southwest Division of the American Business Communication Association. Houston, TX, March 10-12. ED 227505.

Wiseman, S., and Wrigley, J. (1958). Essay-reliability: The effect of choice of essay-title. *Educational and Psychological Measurement, 18,* 129-138.

Witte, S. P., and Faigley, L. A. (1981). *A comparison of analytic and synthetic approaches to the teaching of writing.* TWRG Research Report No. 1. Austin: University of Texas. Department of English. ED 209677.

Zamel, V. (1982). Writing: The process of discovering meaning. *TESOL Quarterly, 16,* 195-209.

Zamel, V. (1983). The composing processes of advanced ESL students: Six case studies. *TESOL Quarterly, 17,* 165-187.