

AN ABSTRACT OF THE THESIS OF

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Title: The Extent of the Relationship Between Reading and
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This study examined the reading-writing relationship for 99 exclusively international students, and used narrative, and timed and untimed expository writing samples. The reading comprehension test was the Degrees of Reading Power (DRP), a test appropriate for use with English as a second language (ESL) learners.

Results of the study indicated a strong positive relationship between reading achievement and writing achievement, especially for low-level readers. Interviews conducted during the study revealed that middle/high-level readers achieved low writing scores because of motivational or time problems rather than inability. Some low-level readers were better able to control their thoughts and language on the shorter, timed sample than they were on the expanded, untimed samples. In general, low-level readers lacked rhetorical, syntactic, and critical thinking skills.

Secondary findings which require further research revealed that female international students scored lower on both reading and writing achievement than males. The Japanese students, predominantly female, had studied English longer than most other language groups but scored lowest on both skills.

This study has implications for teaching reading and writing to international students.

The Extent of the Relationship Between Reading and Writing
Achievement Among International Students Enrolled in a
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UNIVERSITY FRESHMAN COMPOSITION COURSE

CHAPTER I

INTRODUCTION

Just as spoken language is learned largely from models, it seems logical that the vocabulary, syntax, and organization of ideas in literary language would also be learned through models. Reading and writing have been viewed in a sequential relationship where reading ability initially precedes writing ability, but then writing skills later influence reading skills (Freedman, & Calfee, 1984; Goodman, & Goodman, 1983). Smith (1983) believes that reading and writing form an essential relationship. He proposes that all the conventions of writing, which are too numerous for formal instruction, are acquired through reading and, like spoken language, without conscious awareness of learning. Shanahan and Lomax (1986) look at reading and writing as a constellation of interrelated processes.

Flower (1988) sees a writer being guided by what she calls a web of purpose, a network of goal-directed information, and at the same time, constructing a purpose while composing. In a similar process, she perceives the reader

analogous to the writer's purpose, but not identical. Flower believes that readers, while trying to infer a writer's goals, use this inference merely as another piece of information in constructing their own meaning of the text.

Widdowson (1984) points out the differences between the communication of reading and writing. In his estimation, the reader is free to either assume the role presupposed by the writer or not. In a submissive attitude, the reader adjusts a knowledge base to accommodate the new information. In an assertive role, he may fit the text into his own conceptual pattern, even distorting it in some cases. Widdowson sees the writer as concentrating on making information accessible to the reader, and the reader as using the text for ideational purposes. While both writer and reader construct goals, their purposes may differ.

Greater than a difference in purpose, Nist and Sabol (1984) believe that reading and writing involve different processes. In their observations of these processes with college students, they have discovered that students are confused regarding the focus of the task in each area. Nist and Sabol view a concern for details in reading as far less important than the same concern for supporting details in writing. They believe that successful readers and writers are aware of the disparities.

Despite differences in purpose or process between reading and writing skills, studies involving college freshman (Fowler, & Ross, 1982; Grobe, & Grobe, 1977; Heller, 1979)

have found a positive correlation between them. However, if reading and writing skills are related for native speakers of English, are they necessarily related for international students? The influence of language on thought has been widely recognized (Hall, 1981; Sapir, 1949; Whorf, 1956). Furthermore, Kaplan (1966) maintains that rhetoric (the art of persuasion or influence through emotion and reason) is evolved out of culture and is not universal. Numerous writing samples of college students who have learned to read and write in a language with thought patterns, organizational patterns, vocabulary, and syntax different from English support this assertion (Kaplan, 1966; 1967; 1976). Several studies (Achiba and Kuromiya, 1983; Burtoff, 1983; Johnson, 1985; Lay, 1982; Martin-Betancourt, 1987) also show differences between native and nonnative writers in the use of techniques which in some cases enhance production and in others hinder it.

As native language patterns can interfere with writing, so can language limitations interfere with reading comprehension. Osman (1985) found that results of studies by Cziko (1978 and 1980), and Ulijn (1980) showed that both native and nonnative readers used graphonic, syntactic, and semantic clues. However, nonnative readers were restricted in the use of semantic clues and had to rely more on graphonic and syntactic clues than native readers, thereby losing attention to meaning.

Purpose of the Study

This study examined the relationship that may exist between general reading comprehension in English and the writing achievement of international students enrolled in a university freshman writing course at Oregon State University. The study also examined the ability of the Degrees of Reading Power (DRP) reading comprehension score to predict writing achievement during the first month of instruction.

Background of the Problem

Stotsky (1983), investigating research in the correlation of reading ability with writing ability, found that studies had been sporadic and at widely varying developmental levels. According to Grobe and Grobe (1977), while much research had been done on college and adult reading, theirs was the first study to investigate the relationship between reading skills and writing skills at the university level. Thomas's 1976 study preceded theirs, but very few have appeared since then (Atwell 1980; Fowler, & Ross, 1982; Stutman, & Cassady, 1983). The lack of research in writing for nonnative speakers of English has been noted by Krashen (1984) and Raimes (1985). As Carrell (1988) observes, before 1970 the influence of the audio-lingual method of language teaching emphasized listening over reading and speaking over writing. This emphasis during two decades, according to Osman (1986),

has also resulted in neglect of research in the reading behavior of second language learners.

Perhaps the same reasons explain the dearth of research in the area of the reading-writing relationship. Very few studies have examined the reading and writing of second language learners (Benedetto, 1984; Pimsarn, 1986; Rollin, 1985). The first two were limited to extremely small numbers of Hispanic college students. The third, by Pimsarn, studied the correlation of reading and writing skills for international students enrolled in a university freshman English course, but even though the number was increased to 40, only one, timed, writing sample was used.

Besides the problem with small samples, in the two studies which attempted to examine correlations between achievement on a standardized reading test and a writing sample (Rollin, and Pimsarn), the Nelson-Denny Reading Test (NDRT) was used. This is a test designed for native English speakers. Heise (1984) reported that it caused unique problems for nonnative speakers of English. In addition to time limits, the literal questions, which were classified as easy, proved to be difficult for nonnative speakers. The interpretive questions, which were classified as difficult included many which were more difficult for nonnative speakers than for native speakers. Passage independence, that is, when a question can be answered without reading the text, was tested by having graduate students select correct answers based on words mentioned most frequently in the

passage. Their scores averaged 6.7 out of 8. However, Heise pointed out that even slight changes of word form in the question were confusing for nonnative speakers and that, furthermore, these were inconsistent. Some questions used words from the passage, and some questions were reworded. Heise concluded that the test is inappropriate for use with nonnative speakers of English.

Statement of the Problem

A few studies seem to indicate a positive relationship between reading and writing skills at the university level for native speakers. However, previous investigations of this relationship for international students at this level have been too small for generalizations, or have used inadequate writing tasks and an inappropriate reading test. It is important to determine the relationship between reading and writing for a larger number of international students.

In addition to determining the reading-writing relationship, it would be useful to know whether the Degrees of Reading Power (DRP), a reading comprehension test which the publishers declare to be appropriate for second language learners, is predictive of writing ability. If these skills are related, it would also be useful to know whether comprehension of expository passages is more closely related to expository writing than to narrative writing.

It was the purpose of this study to determine the following:

1. The extent of the relationship between reading achievement and writing achievement in untimed narration,
2. The extent of the relationship between reading achievement and writing achievement in timed exposition,
3. The extent of the relationship between reading achievement and writing achievement in a writing course grade based on untimed exposition, and
4. The extent of the relationship between achievement in reading comprehension, as measured by the DRP, and a general competence in writing indicated by scores on a combination of all three writing assignments.

Hypotheses

Whereas existing studies that found a positive relationship between reading and writing skills examined this relationship for native speakers of English whose organizational skills in writing are based on what they have learned from the reading material they have encountered since childhood (Smith, 1983), and the studies for nonnative speakers were extremely limited in scope and variety, it was hypothesized that a positive relationship between reading and writing skills in English may not exist for nonnative speakers of English. Therefore:

Hypothesis 1: Scores achieved on a reading comprehension test are independent of scores achieved in narrative writing.

Hypothesis 2: Scores achieved on a reading comprehension test are independent of scores achieved in timed, rehearsed expository writing.

Hypothesis 3: Scores achieved on a reading comprehension test are independent of scores achieved on untimed, revised expository writing.

Hypothesis 4: Scores achieved on a reading comprehension test are independent of the combined scores achieved on three writing samples.

Limitations of this Study

The following were the limitations of this study:

1. There was no attempt to ascertain the cognitive ability of the subjects.
2. There was no attempt to measure reading or writing ability in the native language.
3. The study was controlled for instructor influence by using the same instructor for all assignments.
4. Writing influence on reading was controlled by having all students complete the DRP test within five weeks of submitting the writing samples.
5. The study was limited to students enrolled in a freshman composition course for foreign students at Oregon State University.
6. It was limited to three terms of the 1987/88 academic year.
7. It was limited to undergraduate students between the ages of 18 and 24.
8. It was limited to international students.
9. It was limited to an investigation of three writing samples: untimed narration, and timed and untimed exposition.
10. It was limited to the results of one reading comprehension test, the Degrees of Reading Power.

Definition of Terms

Critical Thinking Skills include inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments as designated on the subskills of the Watson-Glaser Critical Thinking Appraisal (1980).

Exposition is the mode of discourse whose purpose is to explain an idea.

Holistic refers to rating based on a general impression which is expressed in a single score rather than in multiple ratings for various qualities.

Incompetent describes writing that is flawed on either the rhetorical or syntactic level, or both. Levels 1, 2, and 3 on the Test of Written English (TWE) Scoring Guidelines, Appendix A, were designated as levels of incompetence.

Independent referring to raters means that scores given by other raters were unknown.

Kuder-Richardson Formula 20 (KR 20) computes the reliability of tests from the mean, standard deviation, and number of test items.

Level of Reading Competence refers to the groupings of scores on the PB-2 Conversion Table of the DRP for the independent level of reading, with 66 to 99+ designated as "high", 60 to 64 as "middle", and 39 to 59 as "low".

Narration is a mode of discourse used to relate a story. It sometimes includes description.

Reading Comprehension refers to the understanding of written text based on background knowledge of the subject, knowledge of English syntax, mastery of vocabulary, and ability to use context clues.

Writing Competence refers to levels 4, 5, and 6 on the Test of Written English (TWE) Scoring Guidelines, Appendix A. These levels describe writing that demonstrates ability on both rhetorical and syntactic levels.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Theorists give reasons for the connection between reading and writing skills, and researchers find evidence of its existence, but the nature of the relationship is not fully understood.

The research reviewed in this chapter is divided into three areas: the reading-writing relationship, reading assessment, and writing assessment.

The Reading-Writing Relationship

Johnston (1983) defines reading comprehension as a process of building a mental model of the presumed intended meaning of a text: "It is accomplished by constructing a central causal chain and organizing information from the text and from one's prior knowledge with respect to that chain" (p. 154).

Schema theory, a term borrowed from psychology, refers to the network of information stored in the memory which is activated whenever a component is "instantiated" to interpret an event (Anderson, & Pearson, 1984). Extensive research

(Anderson , Spiro, & Anderson, 1978; Johnston & Pearson, 1982; Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1982) has demonstrated the relationship between prior knowledge and reading comprehension. Baker and Brown (1984) assert that a deficient knowledge base of the topic is a major impediment to effective reading.

Not only is interpretation and inference affected by shemata, or prior knowledge (Steffensen, Joag-Dev, & Anderson, 1979), but also comprehension and recall (Anderson, Pichert, & Shirey, 1983; Anderson, et al., 1978; Kintsch, & van Dijk, 1978; Rumelhart, 1980). A comparison by Aron (1984) of the effect of background knowledge on recall in both native and nonnative speakers of English, with both universal and cultural themes, revealed that background knowledge has a significant effect on memory. Subjects did not differ in their recall for text with a universal theme, but did differ significantly in their recall of an American culture-bound theme. A study of Malay and Chinese ESL learners revealed that prior cultural knowledge considerably aided ESL learners to answer textually implicit questions. An important observation was that the influence of cultural schemata may even supersede limited second language reading ability (Osman, 1985).

Several studies (Carrell, 1984, 1986; Ezzaki, 1984; Grabe, 1984; Meyer, 1975, 1979, 1984) indicate that rhetorical organization is also a factor in comprehension and recall. In Carrell's 1984 study, which included three

language groups of ESL readers, results indicated that expository organization in comparison, problem/solution, and causation facilitated encoding, retention, and retrieval more than did description.

Spiro and Myers (1984) state that remembering is "no mere matter of passive retrieval or ... routinizable reconstruction," but rather a mental activity as complex as all of thought (p. 490). Recall has also been linked to understanding in some language and reading tests (Detroit Tests of Learning Aptitude, and Woodcock Psycho-educational Battery). The question of recall of a reading passage and comprehension is addressed by Royer and Cunningham (1978) who assume that a comprehended message will be retained in memory better than an uncomprehended message. Yorio (1971) asserts that the memory span in a foreign language in the early stages of acquisition is usually shorter than in the native language, making the recollection of previous clues more difficult.

However, Johnston (1983) questions the validity of the statement that the byproduct of understanding is memory. He asks whether comprehension truly involves retrieval, or whether it is simply a case of difficulty in assessing them independently.

Several theorists and researchers (Benedetto, 1984; Coady, 1979; Cummins, 1980; Goodman, 1971; Jolly, 1978; Rigg, 1977) consider success in reading in a foreign language to be dependent on the reading skills acquired in the first

language. Coady (1979) goes so far as to claim that problems in foreign language reading are reading problems and not language problems. Furthermore, Benedetto observed that even when reading in a second language in which learners are less able to rely on their first language, ESL learners persisted in relying on strategies that they had developed in their first language, a finding corroborated by a Malaysian study by Osman (1985).

However, evidence suggests that language constitutes an important aspect of reading comprehension even in the native language. As Aitken (1977) observed, citing Oller (1972), both receptive and productive language entail Goodman's receptive language processes of sampling, predicting, testing and confirming. He concluded that if both receptive and productive language are manifestations of the same underlying competence, then a general comprehension test of reading would be an appropriate test of overall language proficiency.

This assumption has been supported by Wisner's (1976) research which showed that college freshmen with facility in identifying syntactic structures in a sentence read faster and with better comprehension than those without this facility. Moreover, research (Alderson, Bastien, & Madrazo, 1977; Clarke, 1979) has indicated that in a foreign language, knowledge of the foreign language supersedes reading ability in the first language in effective reading comprehension. Using miscue analysis of both first and second language cloze responses, Clarke (1979) discovered that although good

readers made more semantically acceptable responses in the first language, they did not differ significantly from poor readers in the foreign language. This observation led the researcher to conclude that limited language competence can hinder the use of effective reading behaviors.

If the components necessary to accomplish the reading act involve skills which focus on "vocabulary difficulty, relationships among ideas, and inductive and deductive reasoning," as observed by Spache (1981), it is not surprising to find these same element in successful writing (Berthoff, 1978; Fowler and Ross, 1982; Flower and Hayes, 1981; Grobe, 1981; Sternglass, 1981). A positive correlation should be expected between reading and writing skills. However, there is conflicting evidence in this regard.

While several correlational studies (Atwell, 1980; Fowler, & Ross, 1982; Grobe, & Grobe, 1977; Heller, 1979) reported a positive correlation between reading achievement and writing achievement, research which attempted to correlate the amount of reading with writing achievement of college freshmen (Illo, 1976; Stutman, & Cassady, 1983; Thomas, 1976) found little or no correlation. However, a study of the effects of pleasure reading in English on the writing ability of ESL adults revealed that more reading in English resulted in more writing proficiency while more reading in the native language had no significant correlation with writing in English (Janopoulos, 1986). Taylor (1981) found a positive correlation between reading scores and

course grade in a beginning English composition course at a community college, yet a later study (Loucks, 1985) of reading and writing scores for similar students taking a basic composition course showed that a significant number who failed the course did so for reasons other than reading or writing ability.

According to Belanger's (1978) review of the literature, research has failed to prove a causative relationship between reading and writing. However, in an informal study, the same researcher observed a growth in average T-unit length, or single main clause plus modifiers (Hunt, 1977), in the writing assignments of adult students during a ten-week reading course. Pitts (1986) also discovered that underprepared college freshmen who listened to material being read aloud as they followed the text silently in an assisted reading project, made gains in writing skills but not in reading.

Murray (1982) considers the reading skill itself to be varied in the tasks of reading to decode someone else's finished product and reading one's own work to "chase a wisp of thinking until it grows into a completed thought," he goes so far as to state that writing, in a sense, does not exist until it is read by the other self who records the evolving text. As he sees the relationship, the writing self was monitored by the reading self during the writing process. This requires the writer to monitor intended meaning and realized meaning in multiple complex relationships through

the practice of recursive scanning, that is, previewing and reviewing.

Research by Atwell (1982) confirmed this recursiveness based on reading, but indicated that less proficient writers were even more dependent on reading as their primary source of recursiveness than more proficient writers, who also relied on plans to keep their writing stable.

While reading and writing may involve different processes and purposes to some theorists, others (Squire, 1983; Tierney, & Pearson, 1983) see composing and comprehending as interrelated processes.

According to Yoos (1979), the reader assumes the role of the writer in corresponding roles. In what Yoos terms the "Objective-Expressive Role" of writing, the thought must first be formulated for oneself before it is expressed for someone else. The reader in turn follows signals in the writing to interpret and clarify the author's intentions or thoughts, making critical judgments on whether the writer has successfully expressed the intended thought. Yoos's "Face-Adjustment" role is one in which the author adopts tones and styles appropriate to the self, the audience, and the situation, and which becomes one of detection for the reader who searches for the motives and sincerity of the author. To communicate effectively, the writer assumes the audience, or rhetorical role that looks to readability, organization, style, and tone in order to relate to the presumptions and attitudes of the audience. It is also the reader who judges

how effectively a piece of discourse reaches its audience. Finally, in the "Logical Role", the writer anticipates the questions of the reader and removes all need for interpretation and explanation. This role in the reader determines whether or not the author has presented the content adequately. In all three stages, Yoos sees the reader as assuming the role of the writer in the writer's act of composing.

The interconnectedness of the processes of reading and writing has been examined from both reading and writing perspectives (Grabe, 1986b; Meyer, 1982). Reading theoreticians such as Kintsch and van Dijk (1978) and Meyer and Rice (1984) emphasize the importance of a reader's recognition of text structure, the logical connections and subordination among ideas. Meyer and Rice point out that these same skills are required of the writer developing a structure for exposition based on Aristotle's three ingredients for communicative discourse: invention, arrangement, and style. Meyer and Rice also point out that the patterns of organization recommended by contemporary rhetoricians, Flower and Hayes (1977) and D'Angelo (1979), are similar to Meyer's (1979, 1981) top level structure, or overall organizing principles of the prose analysis system. One fundamental connection between reading and writing, therefore, is the ability to use organizational skills as a writer and to recognize them as a reader. But here also there are opposing views. Johnston (1983) maintains that

proficient adult readers are less influenced than children by text structure and override it in reading for their own purposes.

Grobe and Grobe (1977), however, believe exposure to printed material facilitates the unconscious learning of writing skills that result in the emulation of grammatical models. On the level of individual sentences or concepts, Heller (1979) examined the writing of 70 university freshmen and compared two samples of expository writing with reading competence as measured by the McGraw-Hill Basic Skills System Reading Test (MHBSS). The syntactic maturity of the writing samples was measured by 21 syntactic elements of written language. The results of the study indicated that the written language of the high reading group was more syntactically mature than that of the low reading group. The high reading group produced more words per clause and more words per T-unit, or single main clause plus modifiers (Hunt, 1977). They used more intra-T-unit coordinators, passive verbs, prepositional phrases, gerunds and participles, and free final modifiers. Heller also observed that the good readers appeared to use more detail in their writing and were able to include more ideas in a T-unit without losing control of syntax.

In addition to Heller's (1979) investigation, other studies involving college freshmen (Fowler, & Ross, 1982; Grobe, & Grobe, 1977) confirm a positive relationship between direct measurement of reading achievement and writing

achievement. In the Grobe and Grobe study of 186 college students, the researchers found that the reading scores clearly discriminated among three levels of writing ability with the highest reading scores correlated positively with the highest writing level, and the lowest reading scores with the lowest writing scores.

Thomas (1976) compared 102 holistically evaluated, randomly selected writing samples with reading achievement scores on the Scholastic Aptitude Test (SAT) which included the Reading Comprehension Subtest and Vocabulary Subtest. Although he found a very low statistically significant correlation between these tests and the writing samples, he did find a substantial positive correlation between them and the Test of Standard Written English. Fowler and Ross also found a high correlation between scores on the English Subtest of the American College Test and a required freshman composition course, confirming Heller's speculation that since good readers read and comprehend more complex reading material, they are likely to have internalized knowledge of grammatical structures.

On the other hand, the development of advanced levels of language ability in nonnative speakers of English does not necessarily imply parallel development of high-order strategies required for effective reading, according to Benedetto's (1984) report of five case studies of Hispanic advanced ESL learners. Free written and oral recall protocols were scored on the basis of adherence to the

writer's top level structure and for the presence or absence of rhetorical content and relationships. Benedetto found that despite advanced levels of language ability, some native speakers did not develop reading skills for an interactive top-down/bottom-up approach to discourse. They were unable to use superordinate text structure with the lower levels of supporting ideas and detailed subordinate information together with surface features of sentence-level structures for total comprehension (Grabe, 1988; Meyer, 1979).

It is not surprising that Thomas (1976) found a very low correlation between sentence maturity and reading achievement and comprehension when his definition of sentence maturity was limited to the total number of subordinate clauses in the composition. As Heller observed, the low reading-writing group used more subordinate clauses, but often misused them in "long strings of ambiguous clauses unrelated to each other or to the main clause of the sentence" (p. 129).

Taylor (1981), using the Nelson-Denny Reading Comprehension test and final course grades with 77 participants in a low-level precollege writing course at a community college, also found a positive correlation between reading comprehension and writing scores. On the other hand, Loucks (1985), also studying the relationship between reading and writing scores for community college freshmen, found that there were reasons for writing competence other than reading ability. He attributed student success despite low reading scores to teacher attitude and involvement. He also found

that a significant number of students who failed the course did so for reasons other than reading ability.

Vocabulary is one element of reading which Fowler and Ross (1982) found to have a moderately high correlation with composition scores of students in a required college freshman course. Confirming vocabulary as an element of good writing, Grobe (1981), in a study at the grades 5 and 11 levels, reported a high correlation between narrative writing achievement and vocabulary diversity. This is understandable in the light of reading theory which distinguishes reading and writing among five kinds of vocabulary (Kaluger, & Kolson, 1978). Kaluger and Kolson assert that the writing vocabulary is a reproduction of the printed symbols of the reading vocabulary and lags behind it throughout life. In support of their assertion, they quote the study of James C. Craig which showed that authors of best sellers used the same level of vocabulary in all their works, even when writing over a period of forty years.

Atwell (1982), like Yoos (1979), recognized the reading-writing connection in the writing process itself. Her investigation of reading as a subprocess or associate process in a comparison of 10 proficient writers and 10 less proficient writers showed that the proficient writers focused on the statement of their message and overall structure--Meyer's top level reading structures--while the less proficient writers concentrated on surface features of mechanics and word choice.

Kennedy (1985), in studying the reading-writing relationship for community college freshmen in writing from sources, also found that poor readers planned their writing task mostly at the sentence level and did substantially more planning as they wrote rather than planning the overall structure before composing. Raimes (1985), in comparing ESL writers and native English-speaking writers, found that ESL students edited less, and that the lowest-proficiency students edited very little. Surprisingly, the proficient group of ESL writers, who did edit, focused on punctuation and verb forms like Atwell's low-proficiency native speakers who concentrated on surface mechanics and word choice.

Reading and writing seem to be related for native English speakers in some areas but not in others. But is the reading-writing relationship a significant factor in the writing ability of nonnative speakers of English? Two college studies (Pimsarn, 1986; Rollin, 1985) indicate that it may be. In a study of 12 limited English writers, Rollin found reading to be a factor in low writing ability. Pimsarn, investigating 40 international students also found a statistically significant relationship between reading ability and writing ability.

Summary

The importance of background knowledge in reading comprehension is recognized by numerous researchers and

theorists (Anderson, & Pearson, 1984; Baker & Brown, 1984; Johnston, 1983) Its role in recall has also been examined extensively (Anderson, et al., 1978, 1983; Aron, 1984; Kintsch, & van Dijk, 1978; Rumelhart, (1980); Steffensen, Joag-Dev, & Anderson, 1979).

Several other factors influence comprehension and recall of text. Rhetorical organization has been examined by Meyer (1975, 1979, 1984), and more recently for ESL readers by Carrell (1984, 1986), Ezzaki (1984), and Grabe (1984, 1986a, 1988). Carrell discovered that expository text facilitated encoding, retention, and retrieval more easily than description. Royer and Cunningham (1978) assert that comprehension is a factor in retention, and Yorio (1971) found that language facility affected recollection of context clues in reading.

The transfer of some reading strategies developed in the first language to reading in a foreign language is held by Goodman, (1971), Rigg (1977), Coady (1979), Cummins (1980) Benedetto (1984), and Block (1986). Contradictory evidence appeared in research by Cziko (1978, 1980), and Ulijn (1980), which showed that nonnative readers were restricted in the use of semantic clues and had to rely more on syntactic and graphonic clues.

Language facility enhances reading comprehension for native speakers (Goodman, 1971; Oller, 1973; Wisher, 1976), allowing for rapid visual recognition (Grabe, 1988). Perhaps it is this dependency on graphonic and syntactic clues which

causes language facility to supersede reading ability in the first language for nonnative speakers as was found by Alderson, Bastien, and Madrazo (1977), and Clarke (1979).

Vocabulary is another essential element of language facility involved in reading comprehension (Kibby, 1981), but to an even greater degree for second language learners (Grabe, 1988; McKeown, Beck, Omanson, & Pople, 1985; Nagy, Herman, & Anderson, 1985; Stoller, 1986). In the case of second language learners, Roizen (1984) found that lexical difficulties interfered with comprehension.

The components of the reading act are ability to comprehend difficult vocabulary, recognize relationships among ideas, apply inductive and deductive reasoning (Spache, 1981), and recognize text structure apparent in the logical connections and subordination among ideas (Kintsch, & van Dijk, 1978; Meyer & Rice, 1984). These are the same skills as those observed by writing theorists and researchers in the writing act (Berthoff, 1978; Fowler, & Ross, 1982; Flower, & Hayes, 1981; Grobe, 1981; Sternglass, 1981).

To some theorists reading and writing may have different purposes (Widdowson, 1984;) or distinctly different processes (Nist & Sabol, 1984; Murray, 1982). Others (Shanahan, & Lomax, 1986; Smith, 1983; Squire, 1983; Tierney, & Pearson, 1983; Yoos, 1979) see the processes as closely related.

Research relating reading and writing skills for college students seems to indicate that there is indeed a relation-

ship that is significant. Several studies (Fowler, & Ross, 1982; Grobe, & Grobe, 1977; Taylor, 1981; Thomas, 1976) employing a standardized reading test and holistic writing evaluation confirmed a positive relationship between reading achievement and writing achievement. Heller (1979) examining syntactic maturity in writing also found a positive correlation between reading and writing as did Kennedy (1985) who compared the writing processes of good and poor readers.

Research has failed to prove a causative relationship between reading and writing (Belanger, 1978), but adult students in studies by Belanger, and Pitts (1986) showed improvement in writing skills after taking reading courses.

Research in the reading-writing relationship for nonnative speakers of English is extremely limited. Two studies (Pimsarn, 1986; Rollin, 1985) found a positive relationship between reading and writing ability.

Reading Assessment

The cloze procedure appears to be a particularly appropriate instrument to measure both reading and language proficiency according to Aitken. Bormuth (1973, 1974) defines the cloze procedure as a way of making tests by mechanically deleting the words in a passage of written language and replacing each with an underlined blank of a standard length. Originated by Taylor in 1953, the cloze procedure, or process of closure, has been widely used as a

criterion in the measurement of reading comprehension and was developed into a complex formula for either manual or computer use by Bormuth in 1975 (Klare, 1984).

Word complexity, or word length, is one variable measured in readability, another consideration in reading assessment. While Klare distinguishes 156 variables, the most common in readability formulas are word length and sentence length. Bormuth's readability formula, which included number of letters, words, Dale long-list words, and sentences in a passage, was adapted in a cloze format by the College Entrance Examination Board in 1980 for the Degrees of Reading Power (DRP) test (Klare, 1984).

Kibby (1981) adds student interest, motivation, language facility, and previous knowledge of content as factors in readability. Because of these factors, he faults the DRP for use of single passages at each readability level but considers the 82% performance in the expected pattern for the levels to be acceptable. Kibby also sees a problem for readers in the fact that some items can only be selected correctly by reading beyond the designated sentence. However, he considers that a high correlation with the California Achievement Test, Reading Comprehension, and IQ language measures give the DRP acceptable construct validity.

While he also acknowledges acceptable content validity in that the passages are clearly typical of required reading of school populations, Kibby disagrees with the test constructors' claim that the test has circumvented a subskill

approach. Kibby believes that it is possible to classify the test items into subskills, but stresses that vocabulary is particularly relevant both to the DRP and as a key ingredient in reading comprehension.

Williams and Dallas (1984) also see vocabulary as a particularly important aspect of the cloze procedure since it correlates highest, along with grammar, with cloze test results. But it is this emphasis on vocabulary and grammar in cloze tests that Alderson (1984) criticizes. He maintains that they do not necessarily measure high-level skills because it may be possible for someone to understand the text but lack the required knowledge of syntax or lexis to supply the missing item. However, one would assume that the syntactical and lexical difficulties which could prevent correct answers on cloze tests would also prevent comprehension of the text. In the case of a native reader, Block (1986) discovered that by misinterpreting only one word, the reader was not able to correct his assumption before half the text was read.

In cases of second language learners, results of studies by Cziko (1978, 1980), and Ulijn (1980) showed that by concentrating on graphonic and syntactic clues rather than semantic clues, nonnative readers lost attention to meaning. Roizen (1984), on the other hand, found that lexical difficulties interfered with comprehension mainly for weaker readers in a comparative study of Hebrew-speaking university students. Better readers appeared to use contextual clues

for unknown words, while the weaker readers were slowed by word-solving strategies, dictionaries and translations. Roizen suggested augmentation of vocabulary for improvement in reading comprehension.

It is Pikulski's (1976) opinion that the cloze procedure is generally assumed to indicate the student's ability to use various types of semantic and syntactic clues, and Schoenfeld (1980) stresses its particular relationship to language proficiency. Unlike other reading comprehension tests, the cloze procedure specifically requires an ability to process syntactic clues. To supply missing nouns and verbs, the reader must understand their functions. To provide adjectives, the reader must appreciate the "subtle but significant role of descriptive language in altering the meaning of a passage" (p. 149), but Schoenfeld reserves the deletion of adverbs for relatively sophisticated students who are familiar with the subject matter of the reading material. Ewold (1983) classifies prepositions as the most difficult for hearing impaired or culturally different students.

Besides the advantage of indicating language proficiency, the cloze procedure demands involvement of the reader as an active participant who must respond to the message (Jongsma, 1971), and it requires the reader to integrate meaning across sentences (Grant, 1979). Because good readers make better use of contextual information, they are typically more successful on this task (Neville, & Pugh, 1984).

While Bormuth warns of its limitations as a diagnostic instrument because the test items are difficult to interpret, he points out that extensive research literature seems to show that what cloze tests measure is indistinguishable from what is measured by ordinary comprehension questions. Kibby judges the test items and scaling of the DRP to be superior to informal reading inventories and diagnostic reading tests.

Since the DRP is a cloze test, it is particularly appropriate for second language learners in that it tests vocabulary and language proficiency, presents universal themes in expository text, does not include adverbs or prepositions in deletions. An added advantage for nonnative speakers of English is that the test is also untimed.

Summary

The cloze procedure appears to be a particularly appropriate instrument to measure both reading and language proficiency particularly for second language learners (Aitken, 1977). The advantages of the cloze procedure in assessment of reading comprehension are apparent in the fact that it separates memory from comprehension, a desirable quality in reading assessment (Johnston, 1983). It requires the reader to react to the text (Jongsma, 1971) and use semantic and syntactic clues (Pikulski 1976; Schoenfeld, 1980). It seems to be particularly well suited to the needs of second language learners because ability to use context

clues is a basic requirement in cloze tests and it is the strategy most used by successful ESL readers (Roizen,1984).

The Degrees of Reading Power (DRP), has all the advantages of a cloze test, meets the criteria for validity (Kibby, 1981) and was judged by Kibby to be superior to reading inventories and diagnostic reading tests in test items and scaling. The DRP is also one of the few standardized reading tests that is appropriate for use with second language learners (*DRP Handbook*). Bormuth (1973) maintains that, despite its limitations as a diagnostic instrument--and Alderson doubts that it measures higher-order reading comprehension--extensive research literature seems to show that what cloze tests measure is comparable to what is measured by ordinary comprehension questions.

Writing Assessment

Writing assessment involves several problems. First of all, Mosenthal (1983) states that there are no well established paradigms in writing research and maintains that researchers therefore use only partially specified descriptive definitions of writing and writing competence. He argues that criteria for partial specifications in writing research can be identified on the basis of the ideology of the researchers and practitioners and distinguishes five ideologies: academic, which is based on prescriptive grammars; utilitarian or functional; romantic, emphasizing prior

knowledge; cognitive development, apparent in syntactic maturity and process studies; and emancipatory, focusing on societal class distinctions.

In identifying written communication performance for English as a second language (ESL) students, Carlson and Bridgeman (1986) base their suggestions for the assessment of performance on the distinctions between communicative competence and performance provided by Canale and Swain (1979). They define performance as the result of the relative contributions of both language proficiency and general cognitive ability.

Time is a factor that appears to influence performance (Blanton; 1987; Farmer, 1986). In fact, time limits can terrorize second language students, according to Cargill Power (1980). In Lay's (1982) study, the time limit caused particular difficulty for ESL students because their composing process included native-language switches and translation of key words in the organization of ideas. In fact, Lay's research revealed that more language-switch use resulted in better-quality essays. Fader (1986) observed that in six years of administering writing assessments to over 30,000 university of Michigan undergraduate students, the only students for which the hour-long writing sample did not represent at least the writer's minimum competence at the time were those who had only recently acquired English. Fader concludes that for nonnative speakers, the test and its

environment can "so shake their confidence that it shatters their competence" (p. 79).

The effects on syntactic complexity of various modes of discourse has also been the object of study (Crowhurst, & Piche, 1978; Norment, 1982; Quellmalz, Capell, & Chou, 1982). In comparing samples of narration, description, and argument in grades 6 and 10, Crowhurst and Piche found that there was no significant difference in syntactic complexity between the groups in the mode of narration, leading the researchers to question whether there is a point beyond which there are not significant increases in syntactic complexity in narration. They concluded that narration places fewest demands, and argument the greatest, on syntactic resources, but Quellmalz et al. found that 11th and 12th grade students performed more poorly on narrative than on expository tasks.

The observation that narration requires less syntactic complexity was also not supported in Norment's study of the writing of 30 Chinese, 30 Spanish, and 30 English speaking college students. Results revealed that these students produced more sentences and used more cohesive devices when writing in the narrative than in the expository mode. Dubin and Oshtain (1980) add that the sequential narrative form is a more universal type of discourse not bound by western tradition.

Carlson and Bridgeman investigating 542 first-year graduate students in three language groups who wrote on four different topics in two modes--comparison and contrast with

opinion, and description and interpretation of a graph or chart--found that there was no difference in the ranking of student scores for the two modes of discourse.

Hake (1986) observed that pure narration in which an assertion may or may not be implied while a personal experience is described, is more frequently misjudged by graders than expository essays which incorporate narrative in making an assertion. Quellmalz et al. (1982) consider that modes of discourse in writing tasks determine the purpose of the task. They believe that since writing for different purposes draws on different skills, these must be measured separately. However, Greenberg's (1981) studies in the cognitive and experiential demands of various writing tasks indicated that changes in the demands produced no significant measurable changes in students' writing performance. Regardless of performance, Horowitz (1986) questions the usefulness of the narration of personal experience in academic writing demands.

The topic is another element in the writing assignment. While Crowhurst and Piche (1978) believe that studies of discourse can be confounded by topic, Hoetker (1982) cites studies which indicate that topic exercises very little control over the mode of discourse. Evidence from research (Emig, 1971; Stratta and Dixon, 1982;) showed that students frequently wrote in the mode they interpreted the topic to call for rather than the one the topic was intended to elicit. Elaborate specification of rhetorical context proved

to be no more successful than topic in helping students to meet expectations in examination settings in a study by Brossell (1982). In the case of high information load, students had trouble getting started and wasted time repeating the information in the topic. Hoetker concludes that, in the light of these studies, topics exercise only limited control over the performance of individual students and states that he is uncertain how to distinguish deviations due to inability or disinclination to perform in the desired way.

To control other aspects of the writing assignment, Cooper (Cooper & Odell, 1977) suggests that the task include speaker, audience and purpose. In the Crowhurst and Piche (1978) study, sixth graders and college students wrote a controlled stimulus passage for three different audiences which the researchers referred to as the "at," "below," and "above" levels. The audience adaptation found in length, length of clause, and syntactic complexity was significant only for college students, the only ones who were able to write on three different levels.

However, age alone does not appear to be a factor in audience awareness. Shapiro (1986) investigating the relationship between cognitive development and rhetorical maturity in college students discovered that designating audience did not ensure consideration of audience if the writer did not have the cognitive maturity to act on the

instruction, or denied the validity of any viewpoint other than his own.

Once speaker, audience, and purpose are clear to the writer, Cooper (Cooper & Odell, 1977) insists on providing conditions that permit the student to give the best rehearsed or researched performance. This may include using notes, in a situation that assures the assessor of student ownership of the work.

Valid assessment procedures are another consideration in the measurement of writing ability (Hirsch, 1977; Charney, 1984). Unlike a standardized test whose validity is derived from the answer key, according to Dilworth and Reising (1979), a composition grade depends ultimately on the evaluator's judgement. These authors suggest that the three forms of test validity--content validity, criterion-related validity, and construct validity--can be applied to composition evaluation. They consider that content validity is achieved when the grade reflects the extent to which the student has manifested the properties of good writing that the teacher has explicitly taught.

Dilworth and Reising accept criterion validity when a score relates to another variable that is a direct manifestation of the characteristic in question, that is, when the piece of writing reflects clearly cited and illustrated characteristics of writing at each increment of the grading scale (45).

Construct validity, the degree to which explanatory concepts account for the evaluation of a performance (Dilworth, & Reising, 1979, p. 45), can be established, according to the same authors, when the principal factors of a construct can be identified and defined, as, for example, in Diederich's (1974) five independent factors in the assessment of writing: ideas, mechanics and usage, organization, wording, and personal flavor (p. 55-57). Primary trait scoring procedures delineate such factors in characteristics unique to a specific assignment (Hartnett, 1978, p. 8).

Finally, the question of reliability is raised in holistic assessment (Hartnett; Dilworth, & Reising; Stiggins, 1982). It is defined as the stability of a measurement in assessing a student's writing ability at that student's level of development (Dilworth, & Reising p. 45).

The sample itself is a constraint on the reliability of the writing assessment. Carlson and Bridgeman (1986) warn against using only one sample which severely restricts inferences and generalizations that can be drawn from such performance. To increase reliability, Cooper (Cooper & Odell, 1977) recommends that the researcher have at least two pieces of a student's writing, preferably written on two different days.

Although Hartnett (1978) suggests that holistic evaluations are unreliable because of interrater differences, reliability is not impossible to achieve. It can be

improved, according to Cooper, when there are two independent ratings of each piece, and when raters from similar backgrounds are carefully trained with a holistic scoring guide.

Freedman and Calfee (1983) distinguish three processes in rating a composition: read and comprehend text to create an image, evaluate the text image and store impressions, and finally, articulate the evaluation. The researchers found that a homogeneous group of skilled evaluators stored similar text images and shared common values about the texts despite differences in personal characteristics such as reading ability, world knowledge, and expectations.

Odell (Cooper & Odell, 1977) found that raters can achieve nearly perfect agreement in choosing the better of a pair of essays in each of three kinds of writing. Cooper adds that in general, when made aware of discrepancies, the ratings of the staff as a group tend to become more reliable.

Although Hoetker (1982) sees holistic ratings of quality as useful in assessing writing skills, he believes they may conceal real differences when used as a dependent measure in research studies. Cooper (Cooper & Odell, 1977), however, views holistic evaluation as the most authentic:

A piece of writing communicates a whole message with a particular tone to a known audience for some purpose: information, argument, amusement, ridicule, titillation. At present, holistic evaluation by a human respondent gets us closer to what is essential in such a communication than frequency counts do (p. 3).

Summary

Writing assessment involves problems in descriptive definitions Mosenthal (1983) argued that research is influenced by the ideology of the researcher: academic, utilitarian or functional, romantic, cognitive development, and emancipatory.

Writing is also influenced by time limits which can be particularly distressing for second language learners (Fader, 1986; Cargill-Power, 1980; Lay, 1982).

Writing assessment must address not only the constraints of time but also modes of discourse (Hoetker, 1982). The effects on syntactic complexity of various modes of discourse have been studied by Crowhurst and Piche (1978), Norment (1982), and Quellmalz et al. (1982).

Contrary to Crowhurst and Piche's conclusion that argument was most demanding for 6th and 10th graders, Quellmalz et al., found that 11th and 12th graders performed more poorly on narrative than on expository tasks, a finding supported by the evidence of Norment. The mode of discourse most likely to elicit syntactic complexity in his study of both native and nonnative college adults was narration.

Dubin and Oshtain (1980) add that an advantage of narration for ESL students is its universality of form and use, but Horowitz (1986) questions the usefulness of this mode of discourse in the writing required in academic tasks.

While Quellmalz et al., consider modes of discourse in writing tasks to determine the nature of the skills that are used, and that they should therefore be measured separately, evidence from studies by Greenberg (1981), and Carlson and Bridgeman (1986) indicated that there was no measurable change in students' writing performance in different modes of discourse or in different cognitive and experiential writing tasks.

Topic is another element in the writing assignment. According to Hoetker (1982), results of some research (Emig, 1971; Stratta, & Dixon, 1982) showed that students wrote in a preferred mode of discourse regardless of topic. Hoetker, examining studies by Brossell (1984), concluded that topics exercise only limited control over writing performance.

Besides mode of discourse and topic determined by the purpose, Cooper (Cooper & Odell, 1977) suggests that the task include speaker and audience. In a study of sixth graders and college students Crowhurst and Piche (1978) found that the audience adaptation was significant only for college students. However, research by Shapiro (1986) indicated that consideration of audience by college students may depend on cognitive maturity and a willingness to accept the validity of an opinion other than the writer's own.

The conditions under which the writing task is performed is another consideration in writing assessment (Cooper & Odell). Cooper suggests a rehearsed or researched assign-

ment, which assures the assessor of student ownership, to permit the student to give the best performance.

Finally, valid assessment procedures are an important consideration in the measurement of writing ability (Hirsch, 1977). Problems regarding the validity and reliability of holistic scoring methods (Hartnett, 1978) can be overcome if the purpose of the writing is not diagnostic, if more than one sample is used, and if independent raters use a holistic scoring guide. Cooper in fact, judges holistic evaluation to be the most authentic.

CHAPTER III

DESIGN OF THE STUDY

The primary purpose of this study was to determine whether reading achievement is significantly related to writing achievement for international university students.

The investigation proposed to examine:

1. The relationship between the scores students achieved on a reading comprehension test and the grades they received on a revised, untimed, narrative composition,
2. The relationship between the scores students achieved on a reading comprehension test and the grades they received on a prepared, timed, expository composition,
3. The relationship between the scores students achieved on a reading comprehension test and the class grades they received on a revised, untimed expository, composition.
4. The ability of the Degrees of Reading Power (DRP) to predict writing competence.

Sample and Population

The subjects for this study were international students enrolled in a freshman writing course for nonnative speakers of English during the fall, winter, and spring quarters of 1987/88 at Oregon State University. OSU's business, science, and engineering schools draw a predominantly male student population (Table 1)--the females in this study numbered one point higher than the national average--from the Pacific Rim countries and the middle east, but comparatively few from European and Latin American countries (Tables 7 & 8).

A total of 99 students out of 149 were eligible for the study. To ensure that the subjects did not feel singled out for the research, all the students enrolled in six sections of freshman composition completed the reading test and submitted the writing samples. The researcher was the instructor for all six sections.

Students in the study met the following criteria:

1. All spoke a primary language other than English.
2. All were between 18 and 24 years of age.
3. All had resided in the United States not longer than four years.
4. All were informally observed to be free from physical problems which could impair their reading or writing performance.

Table 1
DISTRIBUTION OF SCHOOLS

SCHOOL	MALE (Average Age: 21)	FEMALE (Average Age: 21)
AGRICULTURAL SC.	8	1
BUSINESS	16	7
HEALTH/PHYS. ED.	0	1
HOME ECONOMICS	0	2
LIBERAL ARTS	3	6
PHARMACY	2	0
PRE-ENGINEERING	30	3
SCIENCE	12	7
UNSPECIFIED	1	0
TOTALS	72	27

Procedures for Obtaining Achievement Scores

Reading Achievement

During the first week of each quarter, the DRP, a standardized reading comprehension test, was administered by the researcher. To prevent instructor or rater bias on the writing grades, reading test answer sheets were collected and filed but not scored until after the last samples of the term had been submitted. Answer sheets were later scored by DRP Services.

At the beginning of the quarter, students filled out a class list stating their age, first language, length of time studying English, and length of time in the United States. Official class lists supplied information regarding classification and school (Tables 12 and 13). Freshmen and Sophomores were equally represented at 37 each; juniors numbered 21, and seniors 4.

Writing Achievement

Students' writing was sampled from two assignments and the midterm examination. These samples comprised the regular class assignments of the first half of the term. The students wrote two to five pages in two modes of discourse, narration and exposition, and under two time constraints, timed and untimed.

The first sample was written during the second and third weeks in response to the following oral and written

directions: "In 400 to 500 words, narrate an important event in your life and tell how this event has changed your attitude, behavior or lifestyle."

Students were told that at least two raters, including the class instructor, would read the first two compositions. During the first week of classes, students received copies of the grading criteria to be used (Appendix A), heard and read models of narration, received specific instruction in development and organization, and then wrote a rough draft in class in a workshop atmosphere, consulting both peers and instructor. They were encouraged to use the tutoring services of the writing lab. Work on the draft continued out of class, and the first typed draft was then submitted, with the rough draft for verification, for the instructor's comments and tentative grading during the second week. The second and final revision continued both in and out of class and was submitted for final grading by the instructor and the other raters at the beginning of the third week.

The second assignment was a comparison-contrast composition to be started in the third week. The oral and written directions were given as follows: "In 500 to 750 words, compare and/or contrast some elements of your culture with those of another culture, and show how the beliefs of each affect behavior. For example, compare the role of women in your culture with that of American women as seen through advertising, or compare some customs of the past with those of the present in your own culture." The writing

procedure was similar to that of the first assignment; however, for this writing sample, the students were asked to write a short version of their paper for an in-class assignment.

The third sample was the fully developed and revised version of the in-class assignment. Students were interviewed individually to discuss their choice of topic and any problems they might have had on the timed assignment. The audience was at the same level, instructor, but the grade was given solely by the class instructor. Four students, who were later discovered to belong in the low reading group, withdrew because they expected to fail the course; therefore, they were treated as failures and numbered with the incompetent writing group for the third sample.

For the first two samples, four writing instructors, including the researcher, were available to read the 198 writing samples. Table 2 gives a summary of their academic backgrounds and teaching experience. All four had taught writing to nonnative speakers of English. All used the same criteria for grading.

Although the raters used the six-point scale to arrive at a grade, only the general categories of competence or incompetence were used by the researcher to determine the reading-writing relationship.

Table 2
ACADEMIC AND TEACHING BACKGROUND OF RATERS

Rater	Sex	Degree Held	Degree in Progress	Teaching Experience
1	F	B.G.S. Teaching Certification	Ph.D.	24 years jr/sr high college ESL
2	F	B.ED. M.ED.	Ph.D.	10 years jr. high, college ESL
3	M	B.ED. M.A.	Ph.D	15 years jr. high, college ESL
4	F	B.ED.	M.ED.	18 years jr/sr high, college ESL

To avoid the "severe, lenient, or erratic" evaluations which could result from fatigue (Braddock cited in Thomas, 1976, p. 42), the researcher read and graded the samples in groups of approximately 15. Without knowledge of this grade, one of the other raters read the same papers and recorded the grade for the researcher. Consensus was reached on 87.9% of the essays. Those papers which did not receive identical grades were given to a third reader. The third reading usually resulted in a consensus of two on one of the scores. In the rare case where three scores were

recorded, the competent or incompetent category was used instead of the actual score so that consensus was reached on all accepted scores. In the rare cases (three or 1.5% for both samples) where the raters differed in the competence/ incompetence categories, consensus was also achieved on the third reading when the third rater's score agreed with one of the first two.

Instrumentation

Four variables were measured in this study: reading achievement, writing achievement in narration, and writing achievement in exposition, both timed and untimed. The DRP was used to measure reading achievement. Three writing samples were required: untimed narration with revision, the timed exposition which was a 45-minute, prepared, in-class assignment, and the untimed exposition.

Measurement of Reading Achievement

The DRP was used to measure the variable of reading achievement. As described by the College Board, publishers of the test, the DRP is an untimed, standardized reading assessment instrument which measures reading comprehension in a modified cloze format, that is with deletions purposefully rather than randomly selected in order to determine the reader's comprehension of important

information. Nouns, verbs, and adjectives comprise the deletions, and readability is based on word count, word length, sentence length, and proportion of common words. Klare (1984) asserts that Bormuth's readability formula, adapted by Touchstone Applied Science Associates (TASA) for the DRP, has a higher validity in original development than the best of other formulas, a higher cross-validation coefficient, and relatively low standard errors of measurement in both original development and cross-validation (p. 697).

Two forms of the test at four levels of difficulty, from primary to college are available (Appendix B). In form PB 2, which was used for this study, the expository passages are one page in length. Five grammatically identical choices are available for each of 77 deletions, but only one of the five is semantically correct.

The test is particularly appropriate for nonnative speakers of English. The passages are on universal themes which do not require knowledge of western culture for understanding. They are passage dependent, that is, they contain all the information necessary to comprehend the material contained in the reading passages. Finally, they are untimed, thereby allowing the extra processing time necessary for reading in a foreign language.

The measurement of reading ability in units other than grade levels is a unique feature of the DRP which is particularly well suited to the purpose of testing college

students for whom grade level is irrelevant. The publishers state that the tests are intentionally criterion-referenced rather than norm-referenced.

Construct Validity

According to the *DRP Handbook*, DRP tests were designed to assess the process of reading with comprehension, unlike traditional tests which test the product through questions following the reading. The tests are holistic, single-objective measures of how well students understand the surface meaning of what they read, and how well they use syntactic and semantic information to make and confirm predictions in choosing the correct meaning of the text. These constraints ensure that only comprehension across sentences is being measured (*DRP Handbook*, p. 42). Multiple choice cloze tests are an appropriate method of examining the comprehension process of constructing relations among words and sentences of the text, and between the reader's knowledge base and the text (Wittrock, 1987).

Construct validity is also evident in research which shows that the difficulty of individual test items is wholly a function of the difficulty of the passage, and is further confirmed in test results which meet expectations of experts in reading instruction (*DRP Handbook*).

Content Validity

The DRP tests are designed to measure comprehension of expository English text. To control for content bias, test passages "were drawn at random from the universe of all

prose subject matter ... "(*DRP Handbook*, p. 43). Ecological validity, related to content validity, refers to the likelihood of encountering the test material in normal contexts (Haddon, 1986). The DRP, according to Grant (1979), shows ecological validity in that the reading passages are typical of required reading in educational situations. Rankin (1983) judged validity on the generalizability of the readability formula results and found that the wide variety of the DRP passages do indeed meet this criterion.

Criterion-Related Validity

As reported in the *DRP Handbook*, DRP scores correlate highly with the criterion measure, and correctly forecast the percent of ordinary prose comprehended at various levels of readability with a tendency to overpredict performance for students near ceiling on the task (*DRP Handbook*). The publishers state that the tests are intentionally criterion-referenced rather than norm-referenced.

The DRP's universal topics, untimed setting, and modified cloze format at a college level make this an ideal test for international students and, based as it is on holistic measures, an ideal test for comparison with holistic writing scores. Because this study did not involve correlations at the highest point of the reading scale, over-prediction was not a concern.

Measurement of Writing Achievement

Writing achievement was measured in two modes of discourse, narration, and exposition, as well as in two settings, timed, and untimed. The specifications of the research were based on two of the ideologies mentioned by Mosenthal (1983): prior knowledge, in the narration of a personal experience, and emancipatory--focusing on societal class distinctions--in the exposition.

To provide a setting conducive to the better-quality essays referred to by Lay (1982) and Fader (1986), sufficient time was allowed to prepare the writing sample either beforehand, as in the timed, in-class assignment, or during the process of revision in the untimed essays.

Although Carlson and Bridgeman (1986) found no difference in the ranking of student scores in two modes of discourse, narration was chosen for the first sample. This mode was required as the first assignment in most of the freshman writing classes. It would also give students the opportunity to use as many cohesive devices as possible (Norment, 1982) and allow them to use a familiar organizational structure at the beginning of the course, as suggested by Dubin and Oshtain (1980).

To avoid the problem of student preference in discourse mode (Hoetker, 1982), the narration topic was taken from Hake's (1986) list of five topics which elicited pure narration on between 2500 and 3000 exams at two

universities. Because grades were reached by consensus, possible grading disparity on pure narration was not a concern in this study. The second assignment was based on a suggested topic in *The Practice of Writing* (Scholes, & Comely, 1985).

Following Cooper's (1977) suggestions, the speaker, audience, and purpose were made clear to the subjects, and conditions were provided which permitted the students to give the best rehearsed performance in a situation that assured the researcher of student ownership of the work.

Content validity was achieved in that the grade reflected the extent to which the student manifested the properties of good writing that the teacher had explicitly taught (Dilworth, & Reising, 1979). Since samples of student writing were direct measures of the ability evaluated in this study, they are valid by definition (Diederich, 1974).

Use of the TOEFL TWE six-point holistic grading scale, which cites and illustrates the characteristics of each increment of the scale (Dilworth, & Reising), provided the criterion validity of the writing assessment.

Construct validity, "the degree to which explanatory concepts account for the evaluation of a performance ... can be established when the factors of a construct can be defined and identified and defined" (Dilworth, & Reising, p. 45). Holistic scoring does not attempt to establish such factors; nevertheless, to again paraphrase Cooper, holistic

evaluation targets what is essential in written communication more closely than frequency counts do.

As suggested by Cooper, for reliability in this study two independent raters, with similar backgrounds, used the same scoring guide to evaluate the writing samples.

Statistical Analysis

The converted reading scores were divided into three groups which allowed an expected cell count nearest to 5 or above: 39 to 59, 60 to 64, and 66 to 99+. The writing scores were grouped according to competence or incompetence with 4 on the six-point scale as the point of minimal competence. No essay received a 1. Since only one narrative and two timed, rehearsed essays received a 2, the 1 and 2s were grouped with the 3s as incompetent.

On the midterm course grade, untimed exposition, the four students who withdrew, expecting to fail on this essay, were included in the incompetent category since their exclusion did not affect the significance level but did lower the expected cell count below the desired level of five.

On the combined samples, incompetent writers include those who scored 3 or below on one or more of the three writing assignments.

Because the purpose of this study was to decide whether a relationship existed between the reading scores and

narration scores, the reading scores and timed, rehearsed exposition scores, the reading scores and the midterm course grade, and the reading scores and all three writing assignments for each member of a single population, the chi-squared statistic could be used effectively to analyze the data in a two-way frequency table (Devore and Peck, 1986).

The formula for testing for independence of two categorical variables using the chi-squared statistic is as follows:

$$X^2 = \frac{(\text{observed cell count} - \text{expected cell count})^2}{\text{expected cell count}}$$

$$\text{expected cell count} = \frac{(\text{row total})(\text{column total})}{\text{grand total}}$$

The expected cell count refers to the number expected in each cell when there is no relationship between the variables.

To determine the strength of the relationship between the reading scores and the writing scores, .01 and .05 significance levels were used.

To determine reliability of the reading test scores, the Kuder-Richardson Formula 20 (KR20) was applied to all the DRP scores. A reliability of .87 was found based on an average raw score of 67.13 and a standard deviation of 7.38.

CHAPTER IV

ANALYSIS OF THE DATA

The chi-squared statistic was used to test the hypotheses of independence between pairs of variables at the .05 and .01 significance levels. This chapter will present a summary of the data and a discussion of the results in relation to the four hypotheses which comprise the purpose of this investigation. These were the following:

Hypothesis 1: Scores achieved on a reading comprehension test are independent of scores achieved in narrative writing.

Hypothesis 2: Scores achieved on a reading comprehension test are independent of scores achieved in timed, rehearsed expository writing.

Hypothesis 3: Scores achieved on a reading comprehension test are independent of grades achieved in a midterm, untimed expository essay.

Hypothesis 4: Scores achieved on a reading comprehension test are independent of the combined scores of all three formal writing assignments.

Summary of the Data

Results Relating to Reading and Narration Scores

Hypothesis 1: Scores achieved on a reading comprehension test are independent of scores achieved in narrative writing.

Table 3 shows the two-way frequency distribution of reading and narration scores, and the expected cell counts. As shown in the table, 14 students with low reading scores were classified as incompetent, but only 6.46 would be expected if there were no relationship between the scores. Consequently, the same large difference occurred in the competent scores so that the low reading category revealed the largest discrepancies between observed and expected cell counts. The differences for the middle group were also fairly large, but those for the high reading group showing 4 in the incompetent category with an expected count of 6.87, and 30 in the competent category with 27.13 expected, indicated the least discrepancy.

The null hypothesis of independence was rejected at the .01 significance level since 16.62 exceeded the critical value of 9.21. Students with low reading comprehension scores were significantly less likely to be competent in narrative writing than those with higher reading scores.

Table 3
TWO-WAY FREQUENCY TABLE FOR READING AND NARRATION SCORES

$$\chi^2(2, N = 99) = 16.62, p < .01$$

Reading Comprehension

Narration	Low	Middle	High	Row Total
Incompetent	14 (6.46)	2 (6.67)	4 (6.87)	20
Competent	18 (25.54)	31 (26.33)	30 (27.13)	79
Column Totals	32	33	34	99

Table 4
TWO-WAY FREQUENCY TABLE FOR READING AND TIMED ESSAY SCORES

$$\chi^2(2, N = 99) = 7.45, p < .05$$

Reading Comprehension

Timed Exposition	Low	Middle	High	Row Total
Incompetent	11 (6.14)	5 (6.33)	3 (6.52)	19
Competent	21 (25.85)	28 (26.66)	31 (27.47)	80
Column Totals	32	33	34	99

Table 5
 TWO-WAY FREQUENCY TABLE FOR READING AND UNTIMED EXPOSITION
 $\chi^2(2, N = 99) = 27.4, p < .01$

Reading Comprehension

Untimed Exposition	Low	Middle	High	Row Total
Incompetent	13 (4.53)	0 (4.67)	1 (4.80)	14
Competent	19 (27.47)	33 (28.33)	33 (29.19)	85
Column Totals	32	33	34	99

Table 6
 TWO-WAY FREQUENCY TABLE FOR READING AND WRITING SCORES
 $\chi^2(2, N = 99) = 24.04, p < .01$

Reading Comprehension

Combined Samples	Low	Middle	High	Row Total
Incompetent	23 (11.96)	7 (12.33)	7 (12.70)	37
Competent	9 (20.04)	26 (20.66)	27 (21.29)	62
Column Totals	32	33	34	99

Table 7
READING GROUP DESCRIPTION

Descriptive Variables	Middle/High Percentages	Low Percentages
Sex:		
Male	69.4	30.6
Female	62.9	37.1
Language Group:		
Arabic	68.0	32.0
Chinese	76.2	23.8
Indonesian	66.7	33.3
Persian	75.0	25.0
Japanese	14.3	85.7
Korean	57.1	42.9
Other	91.0	9.0
Schools:		
Agri. Sc.	77.8	22.2
Business	68.2	31.8
Health/PE	0.0	100.0
Home Ec.	100.0	0.0
Lib. Arts	55.6	44.4
Pharmacy	50.0	50.0
Pre-engineer	69.7	30.3
Science	73.7	26.3
Unspecified	0.0	100.0

Table 8
WRITING GROUP DESCRIPTION

Descriptive Variables	Competence Percentage	Incompetence Percentage
Sex:		
Male	62.5	37.5
Female	59.3	40.7
Language Group:		
Arabic	56.0	44.0
Chinese	71.4	28.6
Indonesian	58.3	41.7
Persian	75.0	25.0
Japanese	14.3	85.7
Korean	85.7	14.3
Other	72.7	27.3
Schools:		
Agri. Sc.	88.9	11.1
Business	81.8	18.2
Health/PE	100.0	0.0
Home Ec.	100.0	0.0
Lib. Arts	66.7	33.3
Pharmacy	50.0	50.0
Pre-engineer	87.9	12.1
Science	68.4	31.6
Unspecified	0.0	100.0

Results Related to Reading and Timed, Rehearsed

Exposition Scores

Hypothesis 2: Scores achieved on a reading comprehension test are independent of scores achieved in timed, rehearsed, expository writing.

Table 4 represents the two-way frequency distribution of reading and timed, rehearsed, exposition scores. Here, the incompetent scores for the low reading group number 11, while only 6.14 are expected.

The null hypothesis of no significant relationship was not rejected at the .01 significance level but was rejected at .05 with 7.45 exceeding the critical value of 5.99. Here again, although the low readers gained competent writers on this sample, they still account for the highest discrepancies between observed and expected cell counts. The difference between discrepancies for the middle and high groups is very small.

Results Related to Reading Comprehension

and Midterm Course Grade

Hypothesis 3: Scores achieved on a reading comprehension test are independent of grades achieved in a midterm, untimed expository essay.

Table 5, representing the untimed exposition scores of the midterm grade, shows greater discrepancies for all groups than the previous writing samples. As indicated in

and 19 competent with 27.47 expected. No student in the middle group fell into the incompetent category while 4.67 were expected, and 33 were competent compared to the 28.33 expected. Discrepancies for the high group are almost identical to those of the middle group.

The null hypothesis of no significant relationship was rejected at the .01 significance level since 26.49 exceeded the critical value of 9.21. Again, students with low reading comprehension scores were significantly less likely to be competent in untimed expository writing than those with higher scores.

Results Related to Reading Comprehension Scores and Scores on All Three Writing Assignments

Hypothesis 4: Scores achieved on a reading comprehension test are independent of scores achieved on all three writing assignments.

In the combined samples in Table 6, the category of low readers once more indicates a very large discrepancy between observed and expected scores. While 37.4% of the low group could be expected to show incompetence on at least one of the assignments if reading and writing scores were independent, the actual percentage was 71.9.

The null hypothesis of no significant relationship was rejected at the .01 significance level with 24.04 exceeding the critical value of 9.21. On the combined scores, it was apparent that students with low reading scores were likely to

apparent that students with low reading scores were likely to show incompetence on at least one of the writing samples significantly more often than those with higher reading scores. In fact, only 20.8% of the higher groups showed incompetence.

Discussion of the Results

Although narration was chosen as the first writing sample on the basis of the universality of this form of discourse, 44% of the low group were unable to complete a satisfactory account of a personal experience that had either an implied or explicit purpose. Those who showed incompetence on this sample listed a series of events in a time sequence, including irrelevant details, and failed to show the significance of the events. These writers also exhibited errors in grammar and sentence structure which frequently obscured meaning.

An examination of the writing habits of the incompetent writers indicates that there are differences in the problems of the low-level readers and the middle/high-level groups. The difference between them in narration was that the low group exhibited more serious weaknesses in sentence structure, usage and word choice. While both groups demonstrated inadequate organization or development, the low group experienced difficulty in understanding and meeting the requirements of the assignment while the middle/high-level

readers expressed a lack of interest in writing in the narrative mode. The low-level readers lacked ability; the middle/high-level readers lacked motivation.

The timed, rehearsed writing sample revealed further differences between the low-level and middle/high-level readers. On this short assignment, some of the writers in the low group were better able to control the development and organization of the content and language than they were on the expanded assignment. On the other hand, the time limit frustrated the better writers. Their conflicts in what to include and how to present it out of context resulted in either short, disconnected paragraphs or an overemphasis on only one point. The time constraint also prevented sufficient monitoring of syntactic choices.

On the untimed comparison-contrast assignment, the low-level readers chose to write description rather than exposition. They failed to show the significance of the cultural elements they described, or chose to describe insignificant customs such as food, clothing or holidays.

The most apparent problem for incompetent writers appeared to be a lack of analytic and critical thinking skills. Some omitted any kind of analysis of the cultural elements they chose to compare. Others made some attempt to analyze and criticize their observations but showed many of the fallacies of logic mentioned by Irmischer (1972). The most common were vague definitions, erroneous conclusions based on unsupported generalizations, distortion of evidence

or substitution of emotional responses for evidence, confusion of *all* and *some*, and appeals to authority.

The only middle/high-level reader who scored in the incompetent category on this assignment exhibited a motivation problem. This writer ignored the comparative, contrastive, and analytic elements and wrote a humorous personal narrative. While the writing itself was not incompetent, the instructor was unable to judge whether the problem was the writer's lack of ability or lack of willingness to write expository prose. A later interview revealed the latter.

Of the total group of low-level readers, 71.9% showed incompetence on at least one of the three assignments. Students in all three reading categories who scored lowest in writing demonstrated both rhetorical and syntactic weaknesses. However, all but one student with converted scores above 59 showed competence by the third assignment despite incompetence on one or even two earlier assignments.

Secondary Findings

An unexpected finding was that the low group of readers scored closer to the middle and high groups in timed exposition because more of them were able to achieve competence while more of the middle/high-level readers showed incompetence on this assignment. The time limit frustrated

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Secondary Findings

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context resulted in either short, disconnected paragraphs or an overemphasis on only one point. The time constraint also prevented sufficient monitoring of syntactic choices. On the other hand, low-level readers were better able to control the development and organization of their thoughts and language.

Although a closer relationship may be expected between reading expository text and writing expository prose, scores on exposition were not significantly more closely related to reading than were narration scores.

More males than females achieved middle and high scores in reading, and competence in writing. Causes for disparity are beyond the scope of this study, and only speculation is possible. Life experience may have provided the males with a broader background of knowledge for the reading and writing tasks. Cultural conditioning which prepares males for leadership roles may also have influenced the development of verbal skills in the native language as well as those in English.

While a higher percentage of the group which included European languages had middle and high reading scores, this group did not show the same skill in writing. The group with the highest percentage of competent writers was Korean; the group with the highest percentage of low achievers in both reading and writing was Japanese.

The reading and writing problems of the Japanese group is a matter of speculation. Even though these students had studied English an average of nine years, longer than most

groups, they had the most difficulty with both syntax and development and organization of their thoughts. The fact that 6 of the 7 were females, and females generally showed lower ability than males, may be a partial explanation. The only student who showed competence in both reading and writing was a female who had been married to an American for two years and lived in an English-speaking environment.

Some of the students gave rejection by the better Japanese universities as reason for studying in the United States. Others noted that for many women, a college degree was more important for a marriage certificate than a job, and grades were insignificant. This reason, however, does not explain the fact that the male was the lowest in reading and writing achievement. Still others blamed the type of English training they had received, citing an overemphasis on grammar and memorization of vocabulary lists from archaic forms of the language in literature. There may be several causes for the lack of reading and writing skills in Japanese students. Whatever the reasons, they require further study of a larger number of students of both sexes.

Why did the Koreans write so much better although they had studied English for an average of only four years? The greatest apparent difference between them and the Japanese was that all 7 of these subjects were male. They were also highly motivated and expressed gratitude for the chance to study in the United States because there were so few

universities in Korea, and attendance was complicated by student political action.

Liberal Arts students on the whole did not score higher in reading or writing. In fact, only 55.6% of the Liberal Arts students achieved middle or high reading scores and 66.7% competence on all three writing assignments. Compared to this, 69.7% of Pre-engineering students achieved middle or high reading scores and 87.9% demonstrated writing competence. What kind of international student chooses Liberal Arts? Why does the reading and writing required in this discipline not appear to affect reading and writing achievement? Again only speculation is possible. Four Japanese students belonged to the School of Liberal Arts comprising 44.4% of this group but 66.6% of the incompetent group. Several of the Japanese students and 2 of the 3 males in this group had serious problems with English. Liberal Arts would provide these students with more opportunities to improve their language skills and may have been chosen for this reason.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Findings

This investigation was designed to determine the extent of the relationship between reading achievement and writing achievement for 99 international undergraduate students in four areas: a) narration, b) timed, rehearsed exposition, c) untimed exposition, and d) a combination of all three writing assignments. In addition, this study investigated the extent to which Degrees of Reading Power (DRP) scores predicted writing competence.

While a positive relationship was found between reading achievement and untimed, revised writing scores at the .01 level of significance, the relationship was weaker, .05, for timed, rehearsed writing.

The results of this study support the research of Pimsarn (1986) in finding a positive correlation between reading achievement and writing competence for international students. There was a significant correlation between reading comprehension scores and all writing scores, but this association was the strongest for low-level readers. The results also support the research of Carlson and Bridgeman (1986) who found no significant difference between scores in narrative and expository writing. However, the reports of

the better readers also support the observations of Quellmalz et al., (1982) who found more student problems in narration than exposition.

While the study of Quellmalz et al. did not attempt to isolate factors, the present study indicated that motivation influenced writing more than reading ability for the better readers. This finding in turn supports the results of the Loucks (1985) study of community college freshmen which found that a number of students who failed writing did so for reasons other than reading ability. The difference is that in the present study, the number of those who failed writing because of motivation problems included only better readers. Only 2% of them showed incompetence on any of the three required writing samples compared with 71.9% of the low-level readers. Lack of analytic and critical thinking skills apparent in the writing of the low-level readers was considered to be related to reading ability.

Conclusions

As a result of the analysis of the data and a summary of the findings, the following conclusions were drawn:

1. The effectiveness of the DRP reading comprehension test as a predictor of writing ability is apparent.
2. Timed, rehearsed writing appeared to work to the advantage of some low-level readers.

3. Incompetence in writing is related not only to syntactic and rhetorical problems, but also to a lack of critical thinking skills.
4. Narration is considered to be useless for academic purposes by many students.
5. Incompetence in writing for efficient readers is related more to motivation than lack of writing ability.

The Degrees of Reading Power (DRP)

The effectiveness of the DRP reading comprehension test as a predictor of writing ability is apparent. Of the total group of low-level readers, 71.9% showed incompetence on at least one of the three writing assignments compared with only 20.8% of the better readers.

Students in both high and low reading categories who scored lowest in writing demonstrated both rhetorical and syntactic weaknesses. However, all but one student with a converted score above 59 showed competence by the third assignment despite incompetence on one or even two earlier assignments. Those with scores above 59 who show incompetence will likely have motivational problems. Therefore, the DRP will be a valuable screening instrument for early detection of those students who will need the most help in writing.

A further finding indicated that most students require from 90 minutes to two hours to complete the test. The

recommended time slot of one class period is unrealistic for international students if they are on a 50-minute schedule.

Timed, Rehearsed Writing

Timed, rehearsed writing appeared to work to the advantage of some low-level readers. Because they were better able to control both thought and language than those writers who showed more competence without the time constraint, it is possible that some less competent readers may memorize a short composition rather than compose it in a timed setting. They may also limit grammatical structures to those which are most familiar. Since Cooper (1977) asserts that rehearsed writing is the only kind that permits the writer to produce the best writing, and timed rehearsed writing distorts the true ability of many nonnative speakers, timed writing should not be used as an indicator of writing competence for international students.

Critical Thinking Skills

The low-level readers experienced difficulty with the expository mode of discourse, choosing instead to write description. They lacked the critical thinking skills of recognition of assumptions, deduction, interpretation, and evaluation of arguments. Extra time is needed to develop these skills in students who are more familiar with rote learning and structured written responses.

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Recommendations for Further Research

For a replication of this study, improvements could be made in the grouping and testing procedures. The data indicates that middle- and high-level readers differed very little from each other. Separation of these groups is unnecessary.

Because the DRP test took longer than a 50-minute class period and could not be completed in one sitting as recommended, permission had to be obtained from the test developers to alter the testing conditions. A replication should allow up to two hours for the test.

Applications of This Study

As a result of this research, educators of international students will be able to use DRP scores for the early recognition of students who will need extra help in writing. They should add critical thinking skills to the writing and grammar skills that are taught in English composition classes for international students. Timed, rehearsed writing assignments should be eliminated or used for practice rather than evaluation. The need for motivating students to write in a mode of discourse that is not their preference will need to be recognized. Since narration causes the greatest motivation problem for international students, it should be eliminated from their compulsory freshman writing classes.

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APPENDICES

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These consist of pages:

92-93 - Appendix A

94 - Appendix B

U·M·I

APPENDIX A



TEST OF WRITTEN ENGLISH (TWE)
CN 6151
Princeton, NJ 08541-6151, USA

Scoring Guidelines

The Test of Written English is the thirty-minute writing test administered at the July, November, and May TOEFL administrations. This is the scoring guide that readers use to score the TWE.

Scores

- 6** Clearly demonstrates competence in writing on both the rhetorical and syntactic levels, though it may have occasional errors.

A paper in this category

- is well organized and well developed
- effectively addresses the writing task
- uses appropriate details to support a thesis or illustrate ideas
- shows unity, coherence, and progression
- displays consistent facility in the use of language
- demonstrates syntactic variety and appropriate word choice

- 5** Demonstrates competence in writing on both the rhetorical and syntactic levels, though it will have occasional errors.

A paper in this category

- is generally well organized and well developed, though it may have fewer details than does a 6 paper
- may address some parts of the task more effectively than others
- shows unity, coherence, and progression
- demonstrates some syntactic variety and range of vocabulary
- displays facility in language, though it may have more errors than does a 6 paper

(continued)

4 Demonstrates minimal competence in writing on both the rhetorical and syntactic levels.

A paper in this category

- is adequately organized
- addresses the writing topic adequately but may slight parts of the task
- uses some details to support a thesis or illustrate ideas
- demonstrates adequate but undistinguished or inconsistent facility with syntax and usage
- may contain some serious errors that occasionally obscure meaning

3 Demonstrates some developing competence in writing, but it remains flawed on either the rhetorical or syntactic level, or both.

A paper in this category may reveal one or more of the following weaknesses:

- inadequate organization or development
- failure to support or illustrate generalizations with appropriate or sufficient detail
- an accumulation of errors in sentence structure and/or usage
- a noticeably inappropriate choice of words or word forms

2 Suggests incompetence in writing.

A paper in this category is seriously flawed by one or more of the following weaknesses:

- failure to organize or develop
- little or no detail, or irrelevant specifics
- serious and frequent errors in usage or sentence structure
- serious problems with focus

1 Demonstrates incompetence in writing.

A paper in this category will contain serious and persistent writing errors, may be illogical or incoherent, or may reveal the writer's inability to comprehend the question. A paper that is severely underdeveloped, or one that exhibits no response at all, also falls into this category.

APPENDIX B

Bridges are built to allow a continuous flow of highway and railway traffic across water lying in their paths. But engineers cannot forget that river traffic, too, is essential to our economy. The role of 1 is important. To keep these vessels moving freely, bridges are built high enough, when possible, to let them pass underneath. Sometimes, however, channels must accommodate very tall ships. It may be uneconomical to build a tall enough bridge. The 2 would be too high. To save money, engineers build movable bridges.

- 1** a) wind b) boats
c) weight d) wires
e) experience

- 2** a) levels b) cost
c) standards d) waves
e) deck

In the swing bridge, the middle part pivots or swings open. When the bridge is closed, this section joins the two ends of the bridge, blocking tall vessels. But this section 3. When swung open, it is perpendicular to the ends of the bridge, creating two free channels for river traffic. With swing bridges, channel width is limited by the bridge's piers. The largest swing bridge provides only a 75-meter channel. Such channels are sometimes too 4. In such cases, a bascule bridge may be built.

- 3** a) stands b) floods
c) wears d) turns
e) supports

- 4** a) narrow b) rough
c) long d) deep
e) straight

Bascule bridges are drawbridges with two arms that swing upward. They provide an opening as wide as the span. They are also versatile. These bridges are not limited to being fully opened or fully closed. They can be 5 in many ways. They can be fixed at different angles to accommodate different vessels.

- 5** a) crossed b) approached
c) lighted d) planned
e) positioned

In vertical lift bridges, the center remains horizontal. Towers at both ends allow the center to be lifted like an elevator. One interesting variation of this kind of bridge was built during World War II. A lift bridge was desired, but there were wartime shortages of the steel and machinery needed for the towers. It was hard to find enough 6. An ingenious engineer designed the bridge so that it did not have to be raised above traffic. Instead it was 7. It could be submerged seven meters below the surface of the river. Ships sailed over it.

- 6** a) work b) material
c) time d) power
e) space

- 7** a) burned b) emptied
c) secured d) shared
e) lowered