

SECOND LANGUAGE READING: THE INTERRELATIONSHIPS AMONG TEXT
ADJUNCTS, STUDENTS' PROFICIENCY LEVELS AND READING STRATEGIES

By

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To my mother, Jungrye Yu

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Abstract of Dissertation Presented to the Graduate School
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According to the psycholinguistic view of reading, readers use their background knowledge to interpret texts. This background knowledge has been termed "schemata". Distinct from the notion of schema is research on the role of text adjuncts in second-language (L2) reading. Text adjuncts are pre-reading information such as pictures, definition lists, or text structure information regarding the text provided to help students understand the reading passage. Several researchers found that the facilitative effects of different text adjuncts on L2 reading may vary as a function of learners' proficiency and of text types. The primary goal of my study was to investigate the effects of different types of text adjuncts on L2 reading comprehension. Specifically, my study examined whether L2 learners from various proficiency levels benefit from different types of text adjuncts. I also examined the relationship between English as a Second Language (ESL) learners' anxiety levels and their proficiency levels. Finally, I examined the relationship between ESL learners' reading strategies and their reading comprehension ability. I

hypothesized that Low-Level ESL learners will benefit more from a text adjunct that provides a definition list than from one that provides information on the text type, while the opposite would be true for High-Level ESL learners. Research participants were 61 heterogeneous ESL students. Participants were divided into a high proficiency group and a low proficiency group based on the class placement. Participants in each proficiency level were further divided into two treatment groups (vocabulary group and expanded framework group) and a control group. After reading a passage, students were asked to write down as much as they could remember from the passage for their recall protocol, without referring back to it. Results showed that the high-proficiency ESL students benefited most, as hypothesized, from the expanded framework text adjunct when they read in an L2. Results also showed that, contrary to expectations, the low-proficiency ESL students benefited from both the expanded framework text adjunct and the vocabulary text adjunct.

CHAPTER 1 INTRODUCTION

Most research on reading, whether first language (L1) or second language (L2), is centered around the issue of whether reading is a decoding process or a psycholinguistic synthesizing process. In a decoding process, readers construct the meaning of the text being read by merely decoding the graphic forms in the text. A psycholinguistic synthesizing process of reading, on the other hand, involves an interaction between the text and the readers. In the psycholinguistic view, readers are believed to use their background knowledge (both linguistic knowledge and knowledge of the world) when interpreting the text. This background knowledge has been called “schemata.” According to schema theory (Carrell, 1984a), reading comprehension is a result of the reader activating the appropriate schemata when interacting with a text. Two types of schema have been identified in the literature: content schema and formal schema. Content schema refers to the readers’ background knowledge of the topic or the content of the passage being read. Formal schema refers to the readers’ background knowledge of the overall organization or discourse structure of the text (for example, whether it is a narrative or an expository text). Both types of schema have been shown to positively affect reading comprehension in L2.

Distinct from (but related to) the notion of schema, is research on the role of text adjuncts (i.e., pictures, prefatory statements, titles) in L2 reading. Several researchers (Hudson, 1982; Johnson, 1982; Lee & Riley, 1990; Taglieber et al., 1988, among others) found that the facilitative effects of text adjuncts on L2 reading may vary as a function of

learners' proficiency and of text types (e.g., narrative or expository). However, there have been inconsistent results on the effects of text adjuncts in relation to the learners' proficiency levels and the types of text adjuncts used. Johnson (1982) and Taglieber et al. (1988) argue that giving learners vocabulary words before they read is not as effective as giving them background knowledge about a particular reading passage. In contrast, Laufer (1992) claims that vocabulary knowledge is essential, particularly for low-level ESL students.

Another factor shown to affect reading comprehension is reading anxiety. Previous research shows that language anxiety is related to learners' beliefs; and, as Horwitz (1987, 1988) notes, learners' beliefs are related to the strategies they actually use. In this sense, language anxiety research should be associated with learners' beliefs or strategy studies. Many researchers (Horwitz et al., 1986; MacIntyre & Gardner, 1989, 1994a) have shown that anxiety often has a negative effect on language learning. Horwitz (1986), for example, found that higher scores on the Foreign Language Classroom Anxiety Scale (FLCAS) were significantly correlated with lower actual final grades as well as expected grades. Much research has been done on the role of anxiety in language learning with native speakers of English learning other languages. However, there has been little research on the effect of anxiety in language learning among English as a Foreign Language (EFL) students.

Another important factor in L2 reading is the reading strategies used by L2 learners. In the past, reading strategies were known as skills. Much reading research has empirically investigated reading strategies actually used by successful and unsuccessful L2 readers. When reading English, ESL learners' proficiency is related to their reading

strategies. Unfortunately, many researchers do not measure learners' proficiency levels reliably.

My study included 61 heterogeneous ESL students. The participants were divided into a high-proficiency group and a low-proficiency group, based on their composite scores on the Test of Adolescent and Adult Language (TOAL). Participants in each proficiency level were further divided into two treatment groups (a vocabulary group and an expanded framework group) and a control group. The vocabulary groups received a definition list before they read each passage. Participants in the expanded framework groups received information on text types before they read each passage. Control groups had no treatment. After reading each passage, all participants were asked to complete a recall protocol.

The main purpose of my study was to investigate the effects of different types of text adjuncts on L2 reading comprehension. Specifically, my study aimed to determine whether L2 learners from various proficiency levels benefit from vocabulary or framework text adjuncts. I also examined the interaction between anxiety level and degree of proficiency. Moreover, I examined the difference in reading strategies used by low and high proficiency L2 learners, and their interactions with text adjuncts.

CHAPTER 2 REVIEW OF THE LITERATURE

Effects of Text Adjuncts

In traditional views of second-language (L2) reading comprehension, “meaning is conceived to be ‘in’ the text, to have a separate, independent existence from the reader” (Carrell, 1984c, p. 332). However, many recent L2 reading researchers advocate schema theory (Bernhardt, 1984; Brantmeier, 2005; Carrell, 1984a, 1984b, 1984c; Lee & Riley, 1990; Meyer & Freedle, 1984; Rudell & Speaker, 1985). Schema theory research argues for the importance of background knowledge in (a psycholinguistic model of) the reading process. Second-language reading can be difficult for various reasons, including readers’ failure to access appropriate schemata (e.g., content and formal schema). Text adjuncts are, therefore important because they may help L2 readers activate the appropriate schemata and, thus, enhance L2 reading. Text adjuncts are mostly used as pre-reading activities in L2 reading. The next sections discuss text adjuncts and related factors.

Types of Reading Processes

There are three major reading processes: Bottom-up, top-down, and interactive. This section discusses each of the three reading processes and the differences between text adjuncts and reading processes. In my study, processes and adjuncts are the central components that were observed.

A bottom-up (or text-driven) approach starts with letters, words, and then sentences (Urquhart & Cyril, 1998). According to this approach, a word should take longer to recognize than a single letter. However, one criticism of a bottom-up approach is that

recognizing a word often takes less time than recognizing each of its individual letters. Moreover, there have been no definite findings to indicate whether one stage of the process is over before the next stage begins.

In contrast, in a top-down (or reader-driven) approach, readers start with their background knowledge (whole text) and make predictions about the text, and then verify their predictions by using text data (words) in the text (Urquhart & Cyril, 1998). The main shortcoming of a top-down approach is that it is impossible to see how a reader can begin by engaging the text as a whole, then proceed to paragraphs, then to individual sentences, ending with single letters. In other words, this process (background knowledge, then paragraphs, then sentences, then single letters) may not represent what really happens.

The shortcomings of mutually exclusive bottom-up and top-down explanations lend support to a more interactive approach. From a psycholinguistic viewpoint, the interactive process is the most effective because reading represents decoding a text while using a reader's background knowledge. Research in schema theory shows that reading comprehension is an interactive process between the reader and the text, because the text provides the reader with a framework for comprehending the ideas that are held within the discrete word, sentence, and paragraph level linguistic units, but the reader must recognize the rhetorical structure of the text in order for the ideas to have any coherence (Brantmeier, 2005; Carrell, 1983, 1984a; Carrell & Eisterhold, 1988; Eskey, 1988; Meyer & Freedle, 1984; Young, 1993). According to Eskey (1988), the interactive model does not assume the primacy of top-down processing skills, but rather posits a constant interaction between bottom-up and top-down processing in reading. In this view, good

readers are both good decoders and good interpreters of texts: “To properly achieve both fluency and accuracy, developing readers must, therefore, work at perfecting both their bottom-up recognition skills and their top-down interpretation strategies” (Eskey, 1988, p. 95). Eskey (1988) suggests that good reading can result only from a constant interaction between information achieved by bottom-up decoding and information provided by top-down analysis. According to Eskey (1988), a major virtue of the interactive model is that it directs our attention to both the top-down and bottom-up skills that fluent and accurate reading demands.

Although Eskey believes that an interactive approach is the most effective, he also emphasizes the importance of bottom-up decoding and criticizes some researchers for overemphasizing higher-level strategies (predicting from context or using schemata and other kinds of background knowledge). In his opinion, language is a major problem in second language reading; even educated guessing at meaning is no substitute for accurate decoding. He also adds that language is a kind of schema too, although one that for fluent native users may be activated automatically. Eskey admits, however, that successful comprehension is much more than simple decoding, nonetheless he suggests that decoding is also a cognitive process, involving bottom-up as well as top-down skills, and successful reading cannot be achieved without it. Fluent reading involves both skillful decoding and relating the information so obtained to the reader’s prior knowledge of the subject and the world. In Eskey’s view,

such lower-level skills as the rapid and accurate identification of lexical and grammatical forms are not merely obstacles to be cleared on the way to higher-level “guessing game” strategies, but skills to be mastered as a necessary means of taking much of the guesswork out of reading comprehension (p. 98).

He concludes that an interactive model of reading provides the most persuasive account of this reciprocal perceptual/cognitive process.

On the other hand, Goodman (1971) emphasizes “the act of the construction of meaning as being an on-going, cyclical process of sampling from the input text, predicting, testing and confirming or revising those predictions, and sampling further” (Carrell & Eisterhold, 1988, p. 74). In this model, the efficient reader does *not* use all of the textual cues. However, Eskey (1986, 1988) questions Goodman’s position and cautions that we risk converting reading into a real guessing game.

Discussion of Schema Theory

Many reading researchers believe that reading is an interactive process, requiring text-based features and a reader’s background knowledge. In other words, in reading, the reader interacts with the text. Bernhardt (1984) believes that the interpretation of the text does not depend on text-based features alone, but rather on the information that the readers bring with them to the text. The psycholinguistic view of reading advocated by Clark (1980) agrees with Bernhardt (1984) that readers use their background knowledge (both linguistic knowledge and knowledge of the world) in interpreting the text. The role of background knowledge in language comprehension has been formalized as *schema* theory. Schema theory holds that any particular text does not have meaning by itself; rather, a text only provides directions for listeners or readers as to how they should retrieve or construct meaning from their own, previously acquired knowledge. Such knowledge is called the readers’ background knowledge; the previously acquired knowledge structures are known as *schemata*. Thus, according to schema theory, readers activate appropriate background knowledge against which they try to give a text a consistent interpretation (Carrell, 1984c). Carrell suggests that what is understood from a

text is a function of the particular schema activated at the time of processing the text. L2 readers often do not succeed in comprehending a text because of their failure to access the appropriate schema.

There are two main types of schemata: content schemata and formal schemata. Content schemata comprise background knowledge of the content area of a text. For example, a teacher can give students a picture of a cell for an expository text about cell biology. Formal schemata comprise background knowledge of the formal rhetorical organizational structures of different types of text. For example, a teacher can give students a rhetorically oriented framework through text adjuncts.

L2 readers often do not process a text the same way the L1 readers do. In general, L2 readers tend to be linguistically bound to a text. That is, L2 readers may process the literal language of the text, but they may not make the necessary connections between the text and the appropriate background information needed to comprehend the text (Carrell, 1983). Neither advanced nor high-intermediate ESL readers seem to use context or textual clues frequently. As Carrell (1983, p. 199) states, "They are not efficient top-down processors, making appropriate predictions based on context, nor are they efficient bottom-up processors, building up a mental representation of the text based on the lexical information in the text."

Moreover, fluent readers of a passage in their native language recover quickly from wrong guesses about textual meaning. Smith (1994) argues that any reader can be a fluent reader or a poor reader based on his/her background knowledge of a text. However, ESL readers may not recover as native speakers do, because ESL readers may extract inaccurate information from the text and this may lead to inaccurate predictions for

meaning. Also, ESL readers lack background knowledge compared to native speakers (Johnson, 1982). From a schema theory viewpoint, activation of inappropriate schemata can also impede reading comprehension (Rudell & Speaker, 1985). Hence, the successful activation of an appropriate schema is very important. Thus, to activate the appropriate content schema and formal schema, text adjuncts may be useful in L2 reading, as they could enhance reading comprehension.

Text adjuncts are pre-reading information (such as pictures, definition lists, or text structure information regarding the text) provided to help students understand the reading passage. Text adjuncts serve to activate schemata in several ways. First, text adjuncts help to activate content schemata. For example, vocabulary text adjuncts enable advanced learners to make bridging inferences. Furthermore, background text adjuncts help to activate content schemata regarding two different types of background knowledge: cultural and topic. According to Carrell and Eisterhold (1988), L2 reading can be difficult due to many culturally loaded concepts presupposed by a text. To overcome this problem, a teacher can give students a preview involving a key concept that is culturally loaded. Second, text adjuncts can help to activate formal schemata. For example, rhetorically oriented text adjuncts may help activate L2 readers' prior knowledge of the rhetorical structure of the text to be read.

Hudson's (1982) study showed an interaction between overall linguistic proficiency in ESL and content-induced schematic effects in ESL reading comprehension. As such, Hudson's study suggests the facilitating effects on comprehension of explicitly inducing content schemata through pre-reading activities, as compared to two other methods of inducing schemata (vocabulary activities and read-reread activities) especially at

beginning and intermediate proficiency levels. Hudson argues that this activation of appropriate schemata should be a purpose of pre-reading activities, and that text adjuncts could enhance reading comprehension when given as pre-reading activities to L2 readers. Additionally, Carrell and Eisterhold (1988) suggest that previewing (e.g., definition lists) is an important activity in the reading classroom, which sometimes involves teaching a culturally loaded key concept. They conclude that EFL/ESL readers should become more aware that reading is a highly interactive process between themselves and their prior background knowledge, on the one hand; and the text itself, on the other. Carrell argues that an instructor should teach L2 readers to process texts interactively. That is to read texts using appropriate knowledge but constantly checking and restructuring that knowledge to fit the details encountered during reading (Carrell, 1984c).

When a reader interprets a text, s/he may find a certain type of text adjunct helpful. There is a difference between “reading processes” and “text adjuncts.” The reader processes a text in a bottom-up, top-down, or interactive way. We need to distinguish text adjuncts from processing types in order not to confuse them with other terms such as the bottom-up processing or top-down processing modes, or content or formal schemata.

Carrell (1984c) argues that vocabulary text adjuncts should be considered a type of background knowledge, because they can lead a reader to connect the vocabulary with pre-existing concepts and knowledge. According to Carrell and Eisterhold (1988), less-proficient students tend to use a bottom-up processing mode, and more-proficient students tend to use a top-down processing mode. In other words, less-proficient students tend to use more textual items when they read, and more-proficient students tend to depend on their background knowledge when trying to understand a passage. So, it seems

that for Carrell and Eisterhold, certain types of text adjuncts tend to facilitate certain types of processing for L2 readers of certain proficiency level. For example, a vocabulary text adjunct will facilitate bottom-up processing among less proficient readers, but top-down processing among more proficient readers.

Carrell and Eisterhold's implications might not be entirely correct, though. The processing of a certain type of text adjunct does not necessarily facilitate a certain type of processing. For example, a vocabulary list text adjunct, describing various food items appearing in the passage, may activate some readers' prior experiences in a restaurant, and, thus, activating their background knowledge and triggering top-down processing. While, other readers of equal proficiency level who lack such prior experiences may use the vocabulary as a key for further decoding the text (i.e., bottom-up processing).

In determining processing type, the reader's background is a more important factor than the type of text adjunct used (Bernhardt, 1984). For a text adjunct to be effective it must be integrated into the reader's pre-existing knowledge and other pre-reading activities meant to build background knowledge (Carrell, 1984c). That is to say, any given text adjunct may trigger different types of processing.

In summation, text adjuncts most affect readers' comprehension by helping them to activate appropriate schemata. Several studies give evidence that text adjuncts aid comprehension through the activation of appropriate schemata. Proficiency level affects text adjuncts inconsistently. Hudson (1982) states that certain types of text adjuncts are best suited to certain proficiency levels. In Hudson's study, using a vocabulary list was more effective for advanced learners than for beginning and intermediate learners. On the other hand, Taglieber et al.'s (1988) results showed that vocabulary pre-teaching was

significantly less effective than the other two strategies for average-ability learners. Moreover, in Johnson's (1982) study, exposure to meanings of the target vocabulary words did not significantly affect advanced students' reading comprehension. A text adjunct can also affect comprehension with regards to the rhetorical organization of a text. A fluent reader may recognize a text's rhetorical structure before s/he reads. Therefore, the explicit teaching of text's rhetorical structure as a type of formal text adjunct can aid reading comprehension. Before the reader decodes and interprets a text, text adjuncts help to activate appropriate schemata, allowing the reader to better comprehend a text. For example, the reader given a text adjunct such as background knowledge can better understand the text because the reader already has an appropriate schema activated before reading the passage, and this schema lets the reader comprehend the text more correctly. Moreover, this schema helps the reader to guess accurately, when guessing meanings in the text.

Different Types of Text Adjuncts

Several reading-research studies provide evidence of the effects of text adjuncts on reading comprehension (Carrell, 1983; Hudson, 1982; Lee, 1986a, 1986b; Lee & Riley, 1990; Taglieber, Johnson & Yarbrough, 1988). Hudson (1982) investigated the effects of three different types of text adjuncts in L2 reading comprehension on beginning, intermediate, and advanced ESL students who were proficient readers in their L1. Each group was given three graded reading passages. The first type of text adjunct that Hudson tested was pictorial text adjunct. In this condition, subjects were given a set of pictures about the general topic of the passage and then were asked a set of questions about each of the pictures. The pictures represented a type of background text adjunct. After that, each subject wrote self-generated predictions of what s/he expected to find in the reading

passage. The second type of text adjunct was vocabulary instruction. In this condition, subjects were given a list of vocabulary items which would appear in the reading passage. The third method was read-test/read-test. In this condition, subjects read the passage silently, and then took the same reading comprehension test. The procedure was then repeated one more time. Hudson's results showed that beginning and intermediate students scored higher in the pre-reading condition (pictures) than in the other two conditions. In his study, advanced readers had less trouble processing visual information and changing schemata than did lower-level readers, and advanced readers were able to bring more non-visual "behind the eye-ball" knowledge when reading in the L2 than beginning and intermediate readers were. Hudson concluded that a schema can override language proficiency as a factor in L2 reading comprehension; the linguistic ceiling is only one determinant of reading comprehension. In other words, Hudson suggests that text adjuncts help readers override their linguistic limitations, particularly at the lower levels of proficiency.

Like Hudson, Taglieber et al. (1988) investigated the effects on Brazilian EFL students' reading comprehension of three different types of text adjuncts: pictorial context, vocabulary pre-teaching, and pre-questioning. The subjects were enrolled in the sixth semester of EFL at the college level. Taglieber et al. stated that the subjects had average levels of English proficiency. Their results showed that vocabulary pre-teaching was significantly less effective than the other two strategies. They argued that although knowledge of words' meanings was necessary for comprehension, heightened background knowledge from the other prereading activities enabled students to use

context to construct meaning successfully for the passages even when all of the words were unknown.

Vocabulary pre-teaching is a widely used type of text adjunct. However, the results of vocabulary pre-teaching are inconsistent. As mentioned above, Hudson (1982) found that the use of a vocabulary list was found to be more effective for advanced learners than for beginning and intermediate learners. Johnson (1982), on the other hand, found no facilitative effect of vocabulary pre-teaching among her subjects. Specifically, Johnson's results suggest that ESL students' comprehension of a passage on the topic of Halloween was affected more by prior experience in the American culture than by knowledge of the vocabulary in the text. In this study, the subjects were advanced ESL students at the university level. There were divided into four groups. Group 1 read the passage without a vocabulary list (to study before reading or to refer to while reading). Group 2 studied the definitions of the target words before reading but was not able to refer to the list while reading. Group 3 read the passage with the target words glossed in the passage. Group 4 studied the target vocabulary words before reading, with the definitions of the target words glossed in the passage. Written recall was significantly better for the familiar than for the unfamiliar information in the passage. Moreover, subjects of all four groups more accurately recognized information from the familiar section of the passage compared with the unfamiliar section. However, exposure to the meaning of difficult vocabulary words in the passage did not seem to affect the comprehension of ESL readers. In other words, the effects of vocabulary difficulty on reading comprehension were not as obvious as the effects of background knowledge. Johnson argues that familiarity with the topic of the passage, combined with background knowledge of the idea allows the reader to

construct meaning successfully for unfamiliar vocabulary words. She explains that, “the normal redundancy in a text may enable readers to cope with unfamiliar words without too much disruption in their understanding. Readers seem to be able to construct a text from memory based on inferences made while reading” (p. 514). Based on these findings, Johnson concludes that “knowledge obtained from real experiences in the foreign culture is effective for reading comprehension of a passage on that topic” (p. 514), and is more important than knowledge of vocabulary.

When an instructor in an L2 classroom teaches, s/he must be concerned with the following aspects regarding vocabulary pre-teaching. First, as Taglieber et al. (1988) note, the instructor should teach the vocabulary important to the text, not vocabulary important to the lesson (p. 457). Second, according to Carrell (1984c), merely presenting new or unfamiliar vocabulary items does not guarantee the induction of new schemata.

Lee and Riley (1990) investigated the effect of giving novice French L2 learners information about the rhetorical structure of an expository prose passage as a text adjunct. They considered two types of rhetorical organization: problem-solution and a collection of descriptions. Subjects were divided into three treatment groups based on the type of formal schema text adjunct they received: no framework, minimal framework, and expanded framework. The minimal-framework group was told either that their passage presented “a collection of descriptions” or “a problem and two solutions.” For the “collection of descriptions” passage, the expanded framework group was told that their passage presented “a collection of descriptions of some activities that the French engage in during their leisure time that demonstrate an interest in both personal enrichment and communication with others”. For the problem-solution passage, the expanded-framework

group was told that their passage presented the problem of “amateur prospectors pillaging archeological treasures in France and that two possible solutions would be discussed.”

Both minimal and expanded frameworks were presented in the subjects’ native language (English). To determine rhetorical structure, Lee and Riley used Meyer’s (1975) content-structure analysis, which provides a hierarchical description of the text. The top-level idea units represent the main idea being collectively described (collection of descriptions text) or presenting the problem and its solution(s) (problem-solution text). Lee and Riley found that only the expanded framework improved recall of the overall content of the collection of descriptions passage; however, the expanded framework had less effect on the problem-solution passage, improving recall scores of only the top-level ideas of that passage. Lee and Riley concluded that an expanded framework helps improve readers’ comprehension of a loosely-structured passage (collection description), but not of a tightly-structured one (problem-solution).

From a review of previous research it becomes apparent that the facilitative effect of different types of text adjuncts (vocabulary list and framework) may vary as a function of learners’ proficiency levels. In this regard, Carrell (1984c) argued that pre-reading activities should differ according to proficiency levels.

Carrell and Eisterhold (1988) also suggest a relationship between proficiency level and the use of adjuncts. Specifically, they assert that illustrations may be particularly appropriate for students with minimal language skills. Background information and previewing, on the other hand, are particularly important for less-proficient language students.

Reading Comprehension Measurements

There are several reading-comprehension measurements in L2 reading research: cloze tests, multiple-choice questions, true-false questions, open-ended questions, and recall. The cloze test may not be a reliable measurement of reading comprehension because the processes involved do not reflect actual reading-comprehension processes. Moreover, the type of reading task may influence how readers interact with the passage (Wolf, 1993). Bernhardt (1991) suggests that for scores on a cloze test to make high correlations with scores on other measures, exact word scoring must be used (pp. 196-197).

Multiple-choice questions are often used for reading comprehension because the task is familiar to subjects and easy to administer and score. However, with multiple-choice questions, test items can sometimes be answered without reading the passage. Another critique of multiple-choice tests is that learners do not always need to carefully read all of the reading passage to answer the questions. Instead, test-takers can often depend on “the recognition of a few key words in the passage or on clues from the other questions, and on syntactic or semantic relationships between the stem and the choices to perform better than they would merely by chance” (Wolf, 1993, pp. 474-475). Wolf suggests in her study that multiple-choice items in Spanish may assess students’ ability to guess rather than their ability to construct meaning.

Wolf (1993) states that test-takers approach open-ended questions by paying attention to a few surface features of the passage. Furthermore, Bernhardt (1991) says that open-ended questions limit the range or type of responses possible; and can affect test-takers’ comprehension of the passage by providing more information about the content.

In regards to a recall protocol, Bernhardt (1991) argues that “a free recall measure provides a purer measure of comprehension, uncomplicated by linguistic performance and tester interference” (p. 200). She also asserts that the recall protocol is a more reliable and valid measurement of comprehension because it does not delimit the response or influence comprehension. As Wolf (1993) said, no “perfect” test of comprehension exists because comprehension varies according to a variety of interactions among reader-based components (such as students’ background knowledge or linguistic proficiency) and text-based components (such as difficulty level of a text).

Interaction of Text Adjuncts, Text Types and L2 Learners

Text types also play a role in L2 reading. For expository texts, Meyer and Freedle (1984) recognize five different types of rhetorical organization: collection of descriptions, causation, problem/solution, and comparison. According to Meyer and Freedle, each of these types represents a different abstract schema of ways in which writers organize and readers understand topics. Certain types of rhetorical organization of expository text are recalled differently from other types (Carrell, 1984b; Meyer, Brandt & Bluth, 1980; Meyer & Freedle, 1984). For example, Carrell (1984b) investigates the effects of rhetorical organization of different types of expository text on ESL readers. Results showed that recall was better for the texts with the three more tightly organized discourse structures (comparison, causation, and problem/solution) than for those that were more loosely organized. Carrell found that the more highly organized types of discourse are generally more facilitative of recall than the less organized collection of descriptions. Similarly, Meyer and Freedle’s (1984) study showed that the different “top-level” overall organizational types affect reading comprehension in English as a native language as well. Meyer and Freedle found better recall of discourse when it was organized with the

comparison, causation, and problem/solution structures than with the collection of descriptions structures.

Research on discourse or text comprehension has shown that comprehension is determined by the rhetorical organization of a text as well as by the local effects of sentences or paragraphs (Carrell, 1984a). Carrell's study investigates the effects of story structure or narrative rhetorical organization on reading recall in ESL. According to Carrell, a story schema may be considered as the rhetorical structure or the grammar of a story. In this study, Carrell divides stories into two types: standard and interleaved. In the standard version, three simple two-episode stories were constructed. Each standard story was then rearranged to create an interleaved version. In the interleaved version, following the Setting, the five basic nodes of each episode were presented in interleaved fashion: two Beginnings, two Reactions, two Attempts, two Outcomes, and two Endings. Carrell notes that "It has even been characterized as a grammar which generates a tree structure consisting of labeled nodes, the constituents of a story" (p. 90). The results indicate that a greater number of nodes were remembered for the standard stories than for the interleaved stories. According to Carrell, whereas native speaking adults do not have to devote more effort to encoding, nonnative readers must dedicate more effort to linguistic encoding, and, therefore, have less effort to dedicate to the sorting of interleaved input into ideal schematic form. Carrell concludes that in schema theory, reading comprehension is a role of the readers' processing and activation of the appropriate formal and content schemata in interaction with a text (along with the linguistic cues provided in the text by the author). She suggests that L2 reading can be regarded partly as

the process of acquiring appropriate new formal and content schemata and of learning to activate the appropriate schemata during comprehension.

Carrell (1984a) pointed out that empirical research has shown the effects of story schema in L1 comprehension, but that no comparable research has been conducted to investigate the role of story schema in L2 comprehension. The reason for this lack of studies might be because literary text is culturally embedded. Frequently, L2 learners have problems related to the absence of appropriate generalized information assumed by the writer and possessed by a reader sharing that writer's cultural background (Carrell & Eisterhold, 1988).

Research on training with expository text structure shows that reading comprehension can be significantly facilitated by explicitly teaching readers about expository text structure and by teaching diverse strategies for identifying and employing that structure during the reading process. Carrell's (1985) study found that training on the top-level rhetorical organization of expository texts significantly increased the amount of information that ESL students could recall. In the area of narrative prose, Carrell (1984a) has demonstrated the effects of a simple narrative schema in ESL. In a study comparing L1 and L2 reading comprehension of literary texts, Fecteau (1999) found that for all students, literal comprehension was superior in the L1, but amount of recall may also have been affected by factors such as successful activation of appropriate schema and processing of key details.

Relationship between proficiency and text adjuncts. Previous research also shows that low and high proficiency learners benefit from different types of text adjuncts. Specifically, decoding is more frequently used among low-proficiency learners. This is

due, perhaps, to the fact that for them, word-by-word decoding is not automatic, and that is why their reading is not fast. Therefore, for these learners, linguistic knowledge, e.g., syntactic knowledge, may be more important because they have not reached the threshold level of competence in L2. Laufer and Sim (1985) observe that “L2 reading is a function of both reading strategies and foreign language competence, since below a certain proficiency level the strategies are not likely to be applied” (p. 406). Even if they do transfer their L1 reading strategies, low-proficiency learners may not use them due to factors such as inadequate knowledge of syntactic features of the L2. On the other hand, for high-proficiency learners, construction of meaning is more frequently used than decoding. These learners can decode automatically because of their L2 proficiency levels.

Learners’ Proficiency in L2 Reading

In ESL reading studies, learners’ English proficiency levels, their strategy use, and their reading comprehension have been shown to be interconnected. As noted by Clarke (1980), the role of language proficiency is greater than had previously been assumed. Kern (1989) concurs, noting that language proficiency factors are certainly an important element in determining L2 reading comprehension. More importantly, a relationship between learners’ overall L2 proficiency has been shown to relate to their reading comprehension (e.g., Block, 1986; Carrell, 1991; Clark, 1979, 1980; Kern, 1989; Taillefer, 1996). In a study by Carrell (1991), L2 proficiency level was found to be more important than L1 reading skills on L2 reading comprehension. Also, Clarke’s (1979) ‘short circuit hypothesis’ emphasizes L2 proficiency. In his hypothesis, Clarke argues that learners cannot transfer their L1 reading strategies until they reach a certain proficiency level of L2. He explains that learner’s low proficiency short-circuits L2 reading comprehension. One of the major claims of the present study is that it is

necessary to measure L2 learners' proficiency before generalizing any results to the ESL population as a whole. The techniques for assessing L2 proficiency in L2 reading research are discussed in the next section.

Problems with assessing L2 proficiency. Thomas (1994) reviews advantages and disadvantages of the four major techniques for assessing the proficiency of L2 learners: impressionistic judgments, institutional status, use of in-house assessment instruments, and standardized tests. Additionally, he addresses the question of why target language proficiency is sometimes a poorly controlled factor in research on SLA. First, when researchers use impressionistic judgments for assessing the proficiency of L2 learners, they typically measure how long a learner has lived in an L2-speaking environment. However, this information may not be revealing, because having residency in an L2-speaking environment does not necessarily mean that the learner will attain any particular level of proficiency. Wolf (1993) also points out that the problem with many subject pools is the inconsistent manner in which subjects are categorized into L2 experience levels. As Wolf notes, L2 learners' proficiency cannot always be categorized by amount of classroom instruction since learners are often placed into intermediate and advanced courses according to their scores on L2 entrance and proficiency exams. Naiman, Frohlich, and Todesco (1975) did not give a proficiency test to students; they explained that they either knew the students personally or depended on trusted recommendations. However, personal impressions about students may not provide an accurate measure of learners' proficiency. In light of this, this study has a lack of generalizability.

A second traditional way of determining L2 proficiency is to rely on learner's institutional status. An example of L2 proficiency defined by institutional status is

provided by Lee and Riley (1990): “[All participants] were enrolled in the third semester of the French language program at the University of Illinois” (p. 28). However, as pointed out by Thomas (1994), “[i]nstitutions differ greatly in the standards by which they assign a given status to individuals, and in the rigidity with which those standards are maintained” (p. 317). Such practice, thus, threatens the external validity (generalizability) of the research results.

A third method used to determine learners’ proficiency in L2 research is by relying on locally developed and administered tests. Thomas (1994) commented on this method that researchers rarely provided clear information about the form of either in-house placement tests or in-house research-internal tests. He also criticized the fact that in many instances, researchers did not report the content of their tests with enough detail for readers to understand.

A fourth method is the use of standardized tests. The advantage of this method is that it enhances the generalizability of the research results. For example, Thomas (1994) observes that “a score of 90 on the Michigan test or 500 on the TOEFL serves as a recognizable benchmark, enhancing the generalizability of the research results” (p. 324). However, according to Thomas (1994), some researchers reported only the minimum or maximum scores achieved by the total sample.

Additionally, it has been noted that “the content of standardized tests is available for public scrutiny, and their validity is subject to ongoing investigation” (Thomas, 1994, p. 324). However, a researcher needs to be cautious when he/she chooses subsections of a standardized test. For L2 proficiency, Yano, Long, and Ross (1994) chose the Structure Subtest Form A of the CELT (Comprehensive English Language Test). It consists of

items that assess grammatical knowledge and that deal with choice of verbs and verb forms. Moreover, the reason for the use of the CELT Structure Test in their study was to provide a covariate for the reading comprehension measures. However, the CELT subtests that were used in this study may not be appropriate for measuring students' L2 overall proficiency. Indeed, many researchers use L2 proficiency tests in their SLA research, but sometimes they underestimate the importance of those tests. For this reason, their results may not be generalizable or accurate.

Reading Strategy Studies

Research on metacognition has shown that readers' metacognitive awareness of strategies is related to their reading proficiency (Barnett, 1988; Carrell, 1989; Carrell, Pharis & Liberto, 1989). Carrell (1989) investigated the relationship between L1 and L2 readers' metacognitive awareness and reading ability. The results showed that the "global," top-down types of reading strategies (e.g., text-gist, background knowledge, and text organization) were not significantly related to L1 reading performance for either the Spanish L1 group or the English L1 group. Interestingly, "local" reading strategies (e.g., focusing on grammar structures, sound-letter, word-meaning, and text details) tended to be negatively correlated with L1 reading performance. The ESL group of more advanced proficiency levels tended to use more "global" or top-down strategies in their perceptions of effective and difficulty-causing reading strategies (Carrell, 1989).

Several researchers have identified apparent relationships between certain types of reading strategies and successful or unsuccessful foreign or second language reading. Young (1993) investigated foreign language readers' cognitive processes (strategy use, i.e., top-down and bottom-up) when they read authentic and edited texts. Young pointed out that much research on strategy use in L2 reading explores the basis for successful and

unsuccessful reading comprehension. Most L1 and L2 strategy research suggests that readers who focus on reading as a decoding process rather than as a meaning-construction process tend to be less successful readers. The results of Clarke's (1980) study also showed that successful readers focused on the meaning of the text. Anderson (1991), on the other hand, investigated individual differences in strategy use in second language reading and testing. In this study, relating sentences from one part of the text to another and monitoring affective feelings about the text are strategies that participants reported frequently. Anderson suggested that strategic reading is not only a matter of knowing what strategy to use, but also knowing how to use a strategy successfully and how to orchestrate it with other strategies. In the next section, research methodologies used for examining reading strategy use are discussed.

Ways to examine reading strategies. There are several methods used for examining reading strategy use. First, researchers can interview students directly about their use of strategies. An advantage of this method is that a researcher can ask students directly about the strategies and techniques that they might have used in learning an L2. However, there are several disadvantages to simply conducting interviews. Interviews between the language learners and their teachers as well as observation of overt learning behavior may lead to the identification of only the conscious aspects of learning, although the language learning process involves both conscious and unconscious components. Also, as noted by Naiman, Frohlich and Todesco (1975), "there are inherent difficulties involved in asking people about their language learning experiences and techniques when they are not directly involved in the process of language learning at the time" (p. 69).

Questionnaires are easy and convenient to administer and do not require students to verbalize the strategies that they use. Furthermore, the questionnaire such as the one employed in Padron and Waxman's (1988) study can help students develop greater awareness of the strategies they employ during reading. However, there are disadvantages and limitations to this method. Since students answers are based on the questionnaire, we really do not know about other techniques. Additionally, as Carrell (1989) notes, Barnett's (1988) questionnaire was developed and scored in terms of predetermined "correct" responses. That is to say, the predetermined opinions by the researcher about the effectiveness of different reading strategies affected the students' responses. The questionnaire used in Rusciolelli's (1995) study, however, also includes "good" and "bad" reading techniques.

Verbal reports, another method for generating student feedback, are used to examine the strategies that learners use when reading and when completing comprehension tests. An advantage of verbal reports is that verbal reports provide a detailed description of the comprehension strategies used by students (Block, 1986). However, the verbal reports' item type can affect how learners interact with a text, "in that to answer some items, test-takers had to reread portions of the passage, while for others, test-takers only had to match surface features from the question to the item" (Wolf, 1993, p. 474). For these reasons, verbal reports can produce misleading, or inaccurate information.

Foreign Language Reading Anxiety

There has been much research on FL reading anxiety. Connected with FL anxiety, reading anxiety is worth investigating due to the relationship between ESL learners' language anxiety and multiple factors, such as their proficiency level and their reading

comprehension ability. It is also meaningful to examine the relationship between their anxiety and their background. This section starts with subtypes of anxiety in the L2 literature. It is followed by a discussion of the effect of anxiety on L2 reading. Then, the ways in which anxiety affects the L2 reading process are discussed. Specifically, the effect of anxiety on different reading processes, such as input, processing, and output is discussed. Finally, this section ends with anxiety measurements.

Types of Anxiety

There are two broad perspectives on the nature of anxiety, which can be categorized as trait and situation-specific anxiety (MacIntyre, 1999; MacIntyre & Gardner, 1989, 1991c). Trait anxiety is “a feature of an individual’s personality and therefore is both stable over time and applicable to a wide range of situations” (MacIntyre, 1999, p. 28). Trait anxiety is a permanent predisposition to be anxious. For example, if a student feels anxious generally, he has trait anxiety. Situation-specific anxiety is similar to trait anxiety, except that it applies only to specific types of situations. According to MacIntyre (1999), examples of situation-specific anxieties are stage fright, test anxiety, math anxiety, and language anxiety. Each situation is different, so a person may be nervous in a test, but not on a stage, or while learning math or a language. Language anxiety is a type of situation-specific anxiety and includes the categories of oral, written, and reading anxiety.

Speaking in an L2 has been cited as the most anxiety-provoking experience for language learners (Horwitz, Horwitz & Cope, 1986; Koch & Terrell, 1991; Price, 1991). Specifically, in Koch and Terrell (1991), students reported oral presentations, skits, role-playing, defining words in Spanish, dealing with situations, and charades to be the most anxiety-producing activities. The research on language anxiety suggests the existence of a

relationship between anxiety and language learning performance. In a study investigating the relationship between L2 classroom anxiety and L2 writing anxiety, Cheng, Horwitz and Schallert (1999) found that L2 writing anxiety is a language-skill-specific anxiety, whereas classroom anxiety is a more general type of anxiety about learning an L2 in general. Additionally, Saito, Garza, and Horwitz (1999) found that reading in an L2 can also be anxiety-provoking to some students.

The interpretation of anxiety (i.e., trait and situation-specific anxiety) has to be conducted using an appropriate measure for the appropriate type of anxiety. For example, to measure language anxiety, we must use a scale that measures situation-specific language anxiety rather than one measuring trait anxiety. Using an inappropriate measurement can lead to contradictory results. Scovel's (1978) review of anxiety research showed contradictory results, both within and across studies. Young (1991) also pointed out that the relationship between anxiety and L2 performance is not consistent (p. 426). However, among the sixteen studies described by Young, only three used a scale just for language anxiety. MacIntyre (1999) argues that the results of Young's survey are inconsistent because she mixed all the different types of anxiety together. In other words, the inconsistency may be due to the fact that only three of the studies she produced had distinguished language anxiety as a separate type of anxiety. In order to be understood as a variable in this study, it is important to define language anxiety separately from other types of anxiety before we can describe its effects (i.e., its relationships to performance). For example, Horwitz (1986) focused her research only on classroom anxiety and used the FLCAS (Foreign Language Classroom Anxiety Scale) and a Test Anxiety scale to measure the effects of such anxiety on students' test-taking performance.

As MacIntyre (1999) notes, language anxiety is a type of situation-specific anxiety, and, therefore, research on language anxiety should utilize measures of anxiety experienced in L2 contexts (p. 29). MacIntyre and Gardner (1991c) argue that L2 anxiety is best studied with situation-specific measures. Using the situation-specific approach, the process through which a given situation produces anxiety can be investigated. These researchers suggest that more meaningful and consistent results have emerged from situation-specific measures (MacIntyre & Gardner, 1991c). MacIntyre and Gardner (1994b) define language anxiety as “the feeling of tension and apprehension specifically associated with second language contexts, including speaking, listening, and learning” (p. 284). Horwitz et al. (1986) add that L2 anxiety is not simply the combination of fears such as communication apprehension, test anxiety, and fear of negative evaluation transferred to L2 learning. According to Horwitz et al., L2 anxiety is unique because it involves learners’ self-concepts of being able to communicate competently and to present themselves genuinely. They define anxiety as “a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process” (Horwitz, Horwitz & Cope, 1986, p. 128).

Several studies support the claim that L2 anxiety does indeed exist and is prevalent (MacIntyre and Gardner, 1989, 1991b). MacIntyre and Gardner (1989) found in a study of 104 native English-speaking students that they reported significantly more anxiety in their French class than in math or English class. MacIntyre and Gardner (1991b) used factor analysis to investigate the relationships among various anxiety scales. There were three scales of anxiety. The first factor was general anxiety. This general anxiety was found to include most of the anxiety scales, such as trait anxiety, communication

apprehension, interpersonal anxiety, and others. The second factor was state anxiety. The third factor was language anxiety. The results suggest that language anxiety can be distinguished from other kinds of anxiety, and these results are consistent with studies by Horwitz (1986) and MacIntyre and Gardner (1989). Notably, in these studies, general anxiety had no correlation with learning. Therefore, MacIntyre and Gardner (1989, 1991b) claimed that language anxiety was distinct from more general types of anxiety and that performance in the L2 was negatively correlated with language anxiety but not with more general types of anxiety. According to MacIntyre (1999) and Saito et al. (1999), language anxiety develops from negative experiences, particularly early in language learning.

General Discussion of L2 Reading Anxiety versus General L2 Anxiety

General L2 anxiety has also been shown to be different from L2 reading anxiety. Specifically, whereas general L2 anxiety has been found to be independent of target language, levels of reading anxiety were found to be different according to target language and were related to the specific writing systems. Sellers (2000) argued that the Reading Anxiety Scale (RAS) in her study measured reading anxiety validly and reliably. She claimed that the RAS identifies reading anxiety as a distinct variable in L2 learning which correlates positively with the scores on the FLCAS for her subjects. This suggests that learners with higher levels of L2 anxiety also tended to have higher levels of L2 reading anxiety and vice versa. However, in her study, the positive correlation between RAS and FLCAS does not mean that RAS affects FLCAS.

Reading anxiety has a correlation with lower reading scores. One finding in the correlational study by Saito et al. (1999) indicated that students with higher levels of L2 anxiety tended to also have higher levels of L2 reading anxiety and vice versa. In their

study, students with higher levels of reading anxiety received significantly lower grades than students with lower anxiety levels. This relationship was also obtained for general L2 anxiety. Saito et al. (1999), thus, suggested that L2 reading anxiety, like other types of L2 anxiety, has a negative correlation to final grades. Students who perceived reading their target language as relatively difficult had significantly higher levels of reading anxiety than those who perceived it as somewhat difficult, followed by those who perceived reading as relatively easy. However, one criticism of final grade measurement is that the final grade may not be the best measure of a student's performance because it is a student's total score in a class; therefore, it would be better to use multiple measurements, as Sellers (2000) did. Although each measure of comprehension (e.g., multiple-choice questions or written recall) has disadvantages, using two different comprehension assessment measures may allow for a more accurate assessment of students' comprehension. Sellers also used two different proficiency levels in her study. This is useful for looking at the differences between proficiency levels in terms of anxiety levels.

There are several classroom situations where reading anxiety might be present, and affect L2 reading performance. For example, reading aloud may also cause anxiety. A substantial number of students feel particularly anxious when asked to read aloud.

Several researchers argue that language anxiety takes up processing capacity (e.g., Lee, 1999; MacIntyre & Gardner, 1994a, 1994b; Sellers, 2000; Tobias, 1986); for example, Lee (1999) states that "[l]anguage anxiety takes up processing capacity, thereby diminishing language learners' reading performance" (p. 50). According to Lee (1999),

when less processing capacity is available, reading processes will not take place automatically, and, hence, reading is slowed down. As a result, comprehension suffers.

MacIntyre and Gardner (1994a, 1994b) investigated the effects of anxiety on cognitive processing and found that such effects may be quite far-reaching. For example, highly anxious readers may expend part of their mental energy thinking about things that are completely irrelevant to the reading activity. As a result, the reading process cannot take place automatically or efficiently. In contrast, a less anxious reader does not expend energy on these task-irrelevant thoughts, and therefore, has more mental energy to contribute to the reading process itself (Sellers, 2000).

Tobias (1986) claims that anxiety in general may affect learning in all three stages. At the input stage, anxiety can take away from attending to new information and encoding it. At the processing stage, it can interfere with the organization and assimilation of this new information. Finally, at the output stage, anxiety can interfere with the retrieval and production of previously learned material.

MacIntyre and Gardner (1994b) developed three different language anxiety measures: input anxiety, processing anxiety, and output anxiety. Specifically, the input stage is meant to illustrate the learner's first experiences with a given stimulus at a given time. The processing stage involves the cognitive operations performed on the subject matter: organization, storage, and assimilation of the material. Output involves the production of previously learned material. Their findings showed that anxious students seem to have difficulty holding distinct verbal items in short-term memory. This may explain why anxious students have trouble comprehending long sentences (Horwitz et al., 1986). These students may also recall less information on a reading comprehension test.

MacIntyre and Gardner's (1994b) findings also suggest that, with anxious students, only a small number of verbal statements enter the processing stage. For example, in MacIntyre and Gardner's (1994b) study, the Paragraph Translation test score in the processing stage demonstrated that anxious students were not able to translate a passage as well as their more relaxed counterparts did. In fact, the poetic nature of the passage used in this study required students to guess at the meanings of some terms, and it appears that the more anxious students did not guess as often as the more relaxed ones. This may reflect anxious students' unwillingness to risk an incorrect or incomplete translation; that is, they may avoid responding in order to avoid guessing. The result of this study clearly showed that anxiety affects language learning at each of the three stages, and that the effects appear cumulative. In particular, anxious students tended to take more time for processing. Therefore, when time was limited, performance was hindered at the output stage. Consequently, anxiety occurring at an earlier stage in the reading process may limit the learner's ability to store relevant information in his/her memory. Thus, he/she may recall less information on a reading comprehension test.

An additional aspect of anxiety that has been studied in terms of the reader's "affective state" has to do with the reader's L2 cultural knowledge. In the interactive reading process advocated by Rudell and Speaker (1985), a reader's affective state (including the reader's interests, attitudes, and values that decide goals for the reading of a passage) may be altered by text variables such as content and form. These variables might influence the affective state of the reader. Additionally, in his affective model of reading, Mathewson (1985) argues, that if content is culturally unfamiliar, rather than neutral or familiar, reading materials take longer to read, are more difficult to recall, and

the readers' comprehension decreased. He further observes that "[c]ulturally compatible reading materials resulted in greater amounts and accuracy of recall than did culturally incompatible materials" (Mathewson, 1985, p. 851). This observation is supported by a study by Saito et al. (1999), which found that students were nervous when they had to read about cultural topics with which they were unfamiliar. According to the study, students felt that the cultural topics should be explained before being presented in the target language. These results imply that students are less anxious if they have cultural background knowledge about what they are reading.

Concerning comprehension, reading anxiety correlates to the amount of information that readers recall as well as to specific information they recall. Sellers (2000), for example, found that more highly anxious students tended to recall less passage content than did participants who experienced minimal anxiety. Not only did highly anxious learners recall less passage content, they also recalled fewer 'high' pausal units. In her study, a pausal unit is one that has a pause at each end, during normally paced oral reading. High-level units represent central ideas, and contribute significantly to the main idea of the passage. Sellers argues that remembering important information is more demanding and requires more mental capacity, because in the processing of important information, readers must organize, interpret, and interrelate the information.

Connected with comprehension, anxiety affects readers' ability to focus on a reading task. Sellers (2000) used an instrument called the Cognitive Interference Questionnaire to assess the number of off-task thoughts of each student while reading. Results from the Cognitive Interference Questionnaire indicated that highly anxious students tended to experience more off-task, interfering thoughts than their less-anxious

counterparts. In other words, highly anxious readers were more distracted by interfering thoughts and were less able to concentrate on the task at hand, which affected their comprehension of the reading passage.

Students' beliefs about reading are also related to reading anxiety. For example, if a student believes that reading is a linear process, he believes that every word has the same importance and feels that he must look up every new word. Approaching a text linearly is not helpful to comprehension, and therefore, his reading is not efficient (fluent). This lack of efficiency and comprehension may lead him to be anxious (Lee, 1999). Additionally, in the area of L2 learning, Young (1991) claims that learner beliefs about language learning are one major source of foreign language anxiety. She states that unrealistic beliefs and expectations can lead to frustration and anxiety. Horwitz et al. (1986) mention examples of learners' beliefs concerning the importance of correctness and the unacceptability of guessing, which may also tend to lead to anxiety. Consequently, anxiety affects fluency in terms of speed and particular types of information that readers recall and comprehend.

Text factors may also affect anxiety levels in reading. For example, inappropriate level of text difficulty may increase students' reading anxiety level. Teachers should pay careful attention to the selection of texts, and should choose authentic materials that have an appropriate level of difficulty; if they choose materials that are too difficult, the anxiety level of some students may increase and they may avoid reading. Consideration of the reading passage's level is important, because if the level of the passage is too high for readers, a researcher cannot measure readers' comprehension accurately. In other

words, anxiety levels of readers may change according to the level of a reading passage or the topic of a text.

Readers' motivation and purpose also affect anxiety levels in reading. Anxieties about language learning may be related to students' previous language learning experiences, their motivations, and their self-concepts about language learning. Experience in language learning is especially helpful in developing realistic expectations for and approaches to reading in a second language. Therefore, Saito et al. (1999) argue that teachers should pay particular attention to reading strategy instruction with beginners. The knowledge that anxiety and difficulties are possible is often reassuring for many students who feel alone in their reactions.

Anxiety Measures

Types of measures and limits of these measures

There have been several methods used to measure anxiety (e.g., diary, interview, essay, observation, and questionnaire). Since affective variables are usually not directly observable, data are often based on "inferences made by an observer concerning how the person really feels or thinks or would behave under certain circumstances" (Oller, 1979, p. 11). Bailey (1983), in a study investigating the relationship between competitiveness and anxiety in adult L2 learning, discusses some advantages of the diary studies. First, he states that a diary study may reveal hidden affective variables. For example, in a diary of a student in his study, the student saw her inability to compete with her more proficient classmates as causing her a great deal of anxiety. Second, the diary studies can provide developmental data. Third, diaries can give researchers insights on many students even within a uniform classroom. Finally, he states that "the diary studies allow us to see the classroom experience as a dynamic and complex process through the eyes of the

language learner” (p. 98). However, the major criticism of Bailey’s study is that diaries are subjective. The researcher interprets anxiety based only on what students wrote.

Price (1991) used student interviews to examine the question of L2 anxiety from the perspective of the anxious learner. This method has several disadvantages. For example, if the interview is conducted in the L2 and an interviewee has low language proficiency, he/she may not understand exactly what the researcher’s questions are. Also, the questions asked are usually specific questions of interest to the researcher, and, therefore, the students’ responses are limited to these types of questions. Because of this, an interview measure can be biased. However, this method has some advantages. The interaction between the researcher and interviewee can possibly elicit more detailed information about the learner’s feelings and thoughts than is available from a diary or essay.

MacIntyre and Gardner (1991a) used an essay, along with other instruments, to measure anxiety. Each student was asked to recall an experience that required the use of their French skills, in which they felt either very relaxed and confident or very nervous and apprehensive. However, this essay method can also be biased, because judges’ subjective opinions are involved in the analysis of the essays. According to Patten (2000), human judgments are subject to biases and other sources of errors. This is especially true of qualitative measures like those described above.

Zbornik and Wallbrown (1991) conducted research with children reading in their L1. Zbornik and Wallbrown used the Reading Anxiety Scale (RAS) questionnaire to measure three domains of reading anxiety: the fears of curiosity, aggression, and independence. However, as Oller (1979) pointed out, questionnaires have much built-in

bias. Bias can also include not giving all possible ideas, causes, or outcomes equal chance of being examined or realized. The questionnaire is biased because it limits the number of possible responses a subject can provide. In addition, items on the questionnaire can influence subjects' choice, due to how an item is worded. For example, if the items are only positively worded, the subjects may positively respond to the items automatically. Therefore, a researcher should be very careful with positive and negative wordings in his/her design of questions to avoid subjects choosing all one scale. Furthermore, respondents may be trying to say what they think a questioner or interviewer wants them to say, so that the questioner or interviewer does not get true responses (Oller, 1979). Specifically, Oller (1979) argues that high proficiency learners may anticipate how the researcher wants them to respond and thus respond in that way. Oller suggests that students' proficiency might also bias the results of the questionnaire. According to Oller, students' responses may be more closely related to the ability to determine intelligently what the "correct" answer is than with their actual behavior and feelings. For example, high proficiency learners may have low anxiety scores because they know what an investigator wants (Oller, 1979; Oller & Perkins, 1978). In other words, high achievers tend to acquire positive affective tendencies as a result of doing well, whereas low achievers might acquire negative attitudes. Additionally, questionnaires generally use a Likert scale. One of the disadvantages of using a Likert scale is that the steps on the scale may not be equal and may miss options that subjects want. However, as Oller (1979) notes, the necessary reliance of affective measures on self-reports is an entirely inevitable weakness: "With affective variables the measurement problem is considerably more complex and is *necessarily inferential and indirect*" (p. 18). Oller states that while many

sorts of behaviors can be directly observed, attitudes can only be inferred from behaviors and statements of the person in question.

Despite the above-mentioned weaknesses, questionnaires are commonly used in correlational studies. The use of correlational studies to measure reading anxiety is subject to many limitations and problems. Correlational studies cannot demonstrate a causal relationship, and therefore, lack internal validity. However, correlational studies are used to measure anxiety because it is very difficult to quantify something as abstract as anxiety. Kleinmann's (1977) study emphasized that anxiety itself is not a simple, unitary construct that can be comfortably quantified into either "high" or "low" amounts.

There are some suggestions for partially compensating for the disadvantages of correlational studies. As suggested by Bailey (1983), one way of minimizing the problems of inference in research on affective variables is to ask readers directly how they feel or think, either in carefully worded questionnaires or interviews, instead of relying only on observation. By doing so, researchers can better get data on students' attitudes and feelings. Additionally, Scovel (1978) explained the advantage of questionnaires and self-reports in that they are much more precise in focusing in on anxiety than physical measures like perspiration, heart rate etc.

Foreign Language Classroom Anxiety Scale (FLCAS)/Foreign Language Reading Anxiety Scale (FLRAS)

In L2 research, the FLRAS, a questionnaire, is the central instrument that has been used for measuring reading anxiety. The FLRAS was developed to measure anxiety related to L2 reading. It contains 20 Likert scale items scored on a 5-point scale. The theoretical range of the FLRAS scale is from 20 to 100. The FLRAS items include various aspects of reading, students' perceptions of reading difficulties in their target

language, and their perceptions of the relative difficulty of reading as compared to the difficulty of other language skills (Saito et al., 1999). In this sense, the FLRAS is valid because the items are the ones which reading anxiety is supposed to be measured.

Additionally, the FLCAS, another questionnaire commonly used in correlational studies, also holds some value as a measurement of classroom anxiety. It contains 33 Likert scale items also scored on a 5-point scale. The items reflect communication apprehension, test-anxiety, and fear of negative evaluation in the L2 classroom (Horwitz et al., 1986). Horwitz (1986) reported that internal consistency using Cronbach's alpha was 0.93, based on a sample of 108 subjects. Test-retest reliability over a period of eight weeks was $r = 0.83$ ($p = 0.001$), for 78 subjects. In addition, higher scores on the FLCAS were associated with lower expected grades in the foreign language class ($r = -0.52$, $p = 0.001$), and lower actual final grades ($r = -0.49$, $p = 0.003$ in Spanish class; $r = -0.54$, $p = 0.001$ in French class).

Although Sellers (2000) attempted to investigate the relationship between students' L2 reading anxiety and their reading comprehension, and the relationship between the students' reading anxiety and the reading process itself, there are several criticisms and limitations to her study. First, her level division was based on semester or course levels, rather than a standardized test. Consequently, results of Sellers' study lacks generalizability. Another criticism centers on the author's selection of text material. Sellers did not consider the level of text although she mentioned this as a limitation of her study. The consideration of the reading passage's level might be important because if the level of the passage is too high for students, a researcher cannot measure their comprehension accurately. Even though trained native speakers of Spanish divided the

reading passage into pausal units, the selection of text based only on general and familiar topics to university students is not sufficient. In other words, anxiety levels of participants may vary according to the level of reading passages or the topic of the text. The limitation of this study is also related to the limitation of correlational studies in general. In other words, since correlational studies cannot identify a causal factor, she cannot interpret her findings that the RAS (Reading Anxiety Scale) affects the FLCAS and her study therefore also lacks internal validity.

Summary

In summary, previous research has shown that L2 learners differing in their degree of proficiency may employ different modes of processing while reading. L2 learners with relatively lower levels of proficiency tend to use a bottom-up mode of processing, while high proficiency L2 learners prefer a top-down mode of processing. Moreover, results of previous research on the effect of text adjuncts on L2 reading comprehension suggest that the facilitative effect of a text adjunct varies as a function of readers' proficiency level, as well as of text type. Recent studies also showed that anxiety level may affect L2 reading comprehension. That is, highly anxious students tend to recall less passage content than do participants who experience minimal anxiety.

Significance of Current Study

Lee and Riley (1990) examined the effect of text adjuncts for the comprehension of expository prose. They found that the expanded framework helped improve novice foreign language readers' comprehension of a loosely-structured type of passage (collection of descriptions), but not of a tightly-structured type (problem-solution). One of the purposes of the present study is to replicate the results of Lee and Riley (1990). Specifically, the present study examines whether the use of an expanded framework helps

improve ESL learners' comprehension of a loosely-structured text more than that of a tightly-structured text. The present study employs three texts that have different structures in order to compare the effects of text adjuncts according to text structure. There have been contradictory results on the effects of text adjuncts depending on ESL learners' proficiency levels. Therefore, the present study also investigates the effects on L2 reading comprehension of two different types of text adjuncts (i.e., definition lists and frameworks) in different proficiency levels (Low and High). By measuring the participants' English proficiency reliably, a relationship between proficiency levels and reading anxiety levels can be examined.

Statement of Purpose

The main purpose of the present study is to investigate the effects of differing types of text adjuncts on L2 reading comprehension. Specifically, this research seeks to answer the question of whether L2 learners from various proficiency levels benefit from the provision of vocabulary and framework text adjuncts. The interaction between anxiety level and degree of proficiency level is explored. Moreover, the difference in reading strategies used by low and high proficiency L2 learners is also examined.

Research Questions and Hypotheses

Research Questions

The following research questions guided this study:

1. Do high and low proficiency ESL learners benefit from different types of text adjuncts (definition list, framework)?
2. Is there an interaction between text type and text adjunct within each proficiency level?
3. Is there any relationship between ESL learners' anxiety levels and their proficiency levels?

4. Is there any relationship between ESL learners' reading strategies at each proficiency level and their reading comprehension ability?

Hypotheses

1. It is hypothesized that the 'expanded framework' sub-group will have lower recall scores than the 'vocabulary' sub-group in the Low proficiency (L) group, because the expanded framework sub-group will lack the vocabulary from the passage they need to understand the passage.
2. It is also hypothesized that the 'expanded framework' sub-group that receives information on the text types will do better than the 'vocabulary' sub-group that receives a vocabulary list in the High proficiency (H) group. Because of their proficiency level, they will not need passage vocabulary, but they will need information about the rhetorical structure of an expository text to fully understand the passage like a native speaker would.

CHAPTER 3 METHODOLOGY

Participants

The subjects who participated in my study consisted of a heterogeneous group of 61 University of Florida ESL (English as a Second Language) students, representing 15 different languages (Table 3-2). They were recruited from the English Language Institute (ELI), the Academic Spoken English (ASE) program and the Scholarly Writing (SW) program at the University of Florida in the spring semester of 2003. Students at the ELI are international students with various language backgrounds, and their English proficiency level is generally lower than the students in the ASE and SW programs. In addition, students at the ELI are divided into several levels based on a standardized placement test, which is administered at the beginning of the semester. Most of the students at the ELI have lived in the U.S. for only a short time, and have not taken the TOEFL or the GRE prior to their admission to this program.

Students in the ASE program, however, are international students who are attending graduate school at the University of Florida. Typically, they are older, and have stayed in the United States for a longer period of time, and are taking ASE classes because their graduate student assistantships depend on successful completion ASE examinations. ASE classes are divided into three levels (I, II, and III), based on proficiency. English proficiency levels of students in the ASE program are generally higher than ELI students and Unlike ELI students, all of the ASE students have taken the TOEFL and GRE before they matriculated into the University of Florida. Like ASE

students, students in the Scholarly Writing Program are international graduate students who need to take English writing classes as a result of scoring the written component of their entrance examination.

For the purposes of my study I recruited students from high intermediate and advanced classes at the ELI as well as all ASE and Scholarly Writing Program competency levels. Students who volunteered from the ASE and Scholarly Writing Program were instructed to individually come to my office. In the case of the ELI students, I was granted permission by their instructors to use their class time to collect data.

Due to variations in proficiency, the participants were divided into two groups Higher, and Lower where all of the participants in the Lower group were part of the ELI. The average length of residence in the U.S. for the Higher group was 2 years, 2 months; and that for the Lower group was only 4 months (Table 3-1). The length of residency has a strong correlation to proficiency, and is, therefore, a key variable in this study.

Table 3-1. Participants' average length of residence in the U.S. and average age

Group	Av. length of residence in the U.S. (m)	Av. age (y)
High (N = 31)	26.55	29
Low (N = 30)	4.67	25

English Proficiency Test

In order to divide students into higher and lower proficiency levels, I used the Test of Adolescent and Adult Language (TOAL). For measuring overall proficiency, it is beneficial to use a test that includes the four language skills (listening, speaking, reading, and writing). As Alderson, Krahnke and Stansfield state, "Proficiency tests measure the test taker's overall ability in English along a broad scale" (1987, p. iv). A standardized test is a more reliable assessment of L2 proficiency than more subjective assessments,

such as impressionistic judgments, in-house tests, or institutional status. It was assumed that the students in the ELI were Lower proficiency students and that those in the ASE and Scholarly Writing programs were Higher proficiency students. I originally based the placement of students into Higher and Lower groups based on their program affiliation. To ensure that these groupings matched actual student proficiency I measured the

Table 3-2. Characteristics of participants

Characteristic		Number of participants
Language background	Arabic	1
	Chinese	9
	Chinese/Taiwanese	1
	Farsi	1
	Hebrew	1
	Japanese	5
	Korean	24
	Mandarin	1
	Punjabi/Hindi	1
	Russian	1
	Spanish	9
	Thai	3
	Tigrinya	1
	Turkish	2
Vietnamese	1	
Gender	Male	36
	Female	25
Age range	19 to 42 years	

Materials

students' overall English proficiency in a reliable way using the TOAL to ensure the accuracy of this assumption.

The TOAL-3 (Test of Adolescent and Adult Language-Third Edition) is a standardized test that measures a student's overall English proficiency level. The test has an internal consistency, test-retest, and inter-rater reliability, and the reliability coefficients exceeded 0.80 indicating that test error was minimal. The TOAL-3 is not biased with regard to race or gender and is designed for students between the ages of 18 to

24 (Hammill, Brown, Larsen & Wiederholt, 1994). This standardized test has been created to test language skills of both native speakers of English and ESL students, making it one of the most difficult standardized exams for ESL students. The TOAL is extremely thorough, in that it includes ten different subsections: listening, speaking, reading, writing, spoken language, written language, vocabulary, grammar, receptive language, and expressive language in this study. For this study, four subtests of the TOAL-3 were used: listening/vocabulary, reading/vocabulary, reading/grammar, and writing/grammar. I administered these subtests of the TOAL-3 to all participants. I included only the students who finished all four subsections of the TOAL and the three reading sections.

For my study, I chose the TOAL-3 over the TOEFL exam. Even though the TOEFL exam is a rigorous and reliable instrument for testing student proficiency, there are several reasons why I did not choose the TOEFL as a proficiency test. First, many ESL students have taken a TOEFL-type test before they entered the U.S. Even though a test itself may be known to be reliable, it may not be reliable enough because many students are accustomed to merely memorizing the test format, and, as a result, the test score may not correlate to a student's English proficiency. To avoid this problem, a researcher could use the student's past TOEFL score. This, however, may not be indicative of the student's English proficiency at the time of the experiment. Therefore, for the reason of consistency and immediacy, the TOAL was chosen as a test of the ESL students' overall English proficiency.

Background Questionnaire

In addition to the standardized test, a background questionnaire, which consisted of the following parts: (1) participants' L1 and L2 backgrounds, as well as their English

learning experiences; (2) some items on reading anxiety when reading English; and (3) some items on reading strategies that they employ when reading English (Appendix A) was administered to all participants. The purpose of part I (participants' L1 and L2 background) was to create a correlation between the participants' backgrounds with factors, such as proficiency levels, anxiety levels, and reading ability. In order to accurately evaluate a subject's 'reading anxiety' items, I employed the Foreign Language Reading Anxiety Scales (FLRAS), which is developed by Saito, Garza, and Horwitz (1999). Likewise for the purpose of identifying a subject's 'reading strategies' items, I used the Reading Strategy Questionnaire (RSQ) (Carrell, 1989; Pritchard, 1990; Rusciollelli, 1995). The FLRAS reveals the subject's preferred reading strategies within a field of three categories: top-down reading strategies, bottom-up reading strategies, and one reading belief (Table 3-3). Item 9 on the RSQ was "Rate your reading skill in your native language," and was scored on a five-point Likert scale, ranging from (1) very good, to (2) fairly good, (3) average, (4) below average, and (5) bad. This kind of questioning provides a useful function of determining the reader's L1 proficiency, which registers as a key factor in this study.

Since FLRAS was designed for native speaker-participants, it has to be modified for ESL participants for use in this study. The FLRAS consisted of six items and the RSQ consisted of nine items. The two questionnaires were scored on a five-point Likert scale, ranging from (1) 'strongly disagree' to (5) 'strongly agree.' To insure the clarity and comprehensiveness of the FLRAS, the items on the questionnaire were pilot-tested with 18 ESL students at the English Language Institute at the University of Florida (Park, 2001). For the five items (items 1-5) in the FLRAS, a higher score signifies a higher

degree of anxiety. Through the evaluation of anxiety, I am able to examine the relationship between learners' proficiency levels and their anxiety levels. I can also investigate possible relationships between learners' anxiety level and their reading comprehension ability. Through the RSQ, I am able to identify which reading strategies are used by fluent readers and which reading strategies are employed by non-fluent readers.

Table 3-3. Types of FLRAS and specific questions asked

Types of FLRAS	Item
Reading anxiety (Items 1-5)	1. When reading English, I often understand the words but I don't always understand what the author is saying. 2. When I'm reading, I am nervous if I don't know the topic. 3. I get upset when I don't understand the grammar in a sentence when reading English. 4. When reading English, if I don't understand every word, I get nervous and confused. 5. I feel very uncomfortable when a teacher asks me to read aloud in class.
Classroom activity (Item 6)	6. I like to do group work in English class.

Table 3-4. Types of reading strategies and specific questions asked

Types of reading strategies	Item
Top-down reading strategies (Items 1, 2, 3, 7)	1. When reading in English, I skip the words I don't know and continue reading. 2. I read the title and imagine what the article might be about. 3. I start reading and try to figure out the meaning as I go along. 7. I think it's helpful if a teacher gives me information about a text <i>before I read</i> .
Bottom-up reading strategies (Items 4, 5, 6)	4. I usually translate into my native language when I read an English passage. 5. I read every word and look up the ones I don't know. 6. I usually pronounce words silently, and when I don't know how to pronounce a word, I think I won't get the right meaning.
Reading belief (Item 8)	8. I think reading out loud to myself is helpful.

Reading Texts

For the main experiment, all participants were asked to read three ‘expository’ texts written by native speakers of English that were not simplified or edited in any way. In general, an expository text does not contain as much culturally embedded background knowledge as a literary text. Therefore, it is easier to control for the text effect with an expository text than with a narrative text.

The texts used by previous researchers were used in this present study (Carrell, 1985, 1992; Connor, 1984; Meyer, Brandt & Bluth, 1980; Oh, 1990). First, by using the same texts, results of this study can be directly compared with previous results. As such, I am able to interpret the reading results according to students’ proficiency levels.

All participants from both groups were asked to read a loosely-structured text, titled “The Olympic Games” (a collection of descriptions). Since both groups read the passage, I could compare the effect of text adjuncts in each group for this type of passage. Next, I selected a set of texts specific to the participants’ proficiency level. I chose the texts “Supertankers” and “Closing down nuclear power plants for the group with the higher proficiency. These readings employ tightly-structured heuristics, consisting of problem and solution, and comparison/contrast formats, respectively. For the lower proficiency group, I chose “On being fat in America” and “Nuclear energy versus solar energy.” These texts also are written with tightly-structured heuristic organization, problem and solution, and comparison, respectively (Appendix B). Therefore, each student read a total of three passages, two of which were proficiency specific.

Procedure

At the outset of this study, I divided each proficiency level into three sub-groups: two treatment groups and a control group. I pilot-tested the texts with 6 students (3 ELI

students and 3 international graduate students) in March 2003. The purpose of the pilot study was to test the feasibility of my procedure, as well as to check the difficulty of the texts. The pilot study did not reveal any major flaws in the overall methodology; therefore, all students who participated underwent the same procedure.

The testing of the participants took place over four meetings. As I mentioned before, the ELI instructors allowed me to use their classrooms to conduct the study for the Lower group. Members of the Higher group met with me four times individually in my office. On the first day of treatment, I gave the participants informed consent forms and the background questionnaire. On the second day of treatment, I administered the TOAL-3.

Due to the unique conditions of the ELI classroom modifications had to be made to the TOAL-3 testing. For example, ELI reading/writing classes are scheduled in two-hour blocks, and it is difficult to continue the test for more than two hours. Additionally, the speaking subtest is supposed to be measured with each student, so it is not best to administer the test with a group of participants. Therefore, for feasibility and methodological reasons, I chose four subtests of which included writing.

On the third day, I gave the students the “The Olympic Games” passage. Students were asked to read and reread the passage for 20 minutes. After all the participants finished with their reading, they were allowed to write the recall protocol for 20 minutes. Accordingly, they had 40 minutes total. The ‘vocabulary’ groups received a definition list before they read the passage. I selected vocabulary words that I considered essential to comprehending the reading. Participants in the ‘expanded framework’ sub-groups received written information on the text types (collection of descriptions, problem and

solution, and comparison/contrast) before they read the passage (Appendix C). For example, if the rhetorical structure of the text employed a problem/solution heuristic, the expanded framework explained that the text presented a problem and suggested a solution for the problem at the end. I modeled the expanded framework in this study after Lee and Riley (1990); i.e., information about the rhetorical structure of an expository text was used as a text adjunct. After the participants finished reading the passage, for the recall protocol I read the instructions, explaining that they should write down as much as they could remember from the passage without referring back to the passage. The participants were encouraged to use complete sentences and to use the words in the passage or their own words (Appendix D).

On the fourth day, I tested the Lower group using the passage “On being fat in American” and the Higher group using the passage “Nuclear energy versus solar energy.” The procedure was repeated exactly the same as that used on the third day.

The students were asked to write in English for all recall protocols, which is an important factor in my study. Lee (1986a, 1986b) found that reporting of recall in the native language produced a more accurate assessment of subjects’ true understanding than did recall reported in the foreign language. His suggestion, however, works only for a homogeneous group when I understand the L1. In the present study, learners had many different language backgrounds, and, therefore, were asked to recall in English, which would have had an effect on their performance.

Another important factor in my procedure was that before the participants began reading, they were told that they would be asked to immediately recall the text after they were finished. By using the immediate recall protocol, I was able to control for memory

effects. Some concern may be raised with regard to the short-term memory issue when students recall. However, if a student does not comprehend a text, it is likely that he/she will have difficulty remembering its content. Therefore, the recall protocol is not greatly affected by short-term memory (Smith, 1994). (Note that the memory effect was not tested in this study.)

Scoring

All questions in the subtests of the TOAL that were used in the present study were scored as 0 or 1. The listening/vocabulary, reading/vocabulary, and reading/grammar are multiple-choice question-type tests. There are two correct answers for each item in all of the three tests, and to receive a score of 1, both answers had to be correct. Because of this fact, it is not easy to answer correctly if a subject simply guesses. Also, if a subject has one right answer and one wrong answer for a question, he or she receives a score of 0. For example, in the listening/vocabulary test, participants were asked to choose two pictures which were representative of two meanings of a homophone (i.e., palm) that was produced (Table 3-5). In the listening/vocabulary test, students were supposed to choose two pictures which were most representative of the word spoken. This section could be difficult if the students knew only one meaning of the word. In the reading/vocabulary test, they were supposed to choose two answers which were most like the words in the example. In the reading/grammar test, they were supposed to choose two sentences that had the most similar meaning. Unlike the first three sections, the fourth section focused on writing/grammar where participants were asked to combine a set of sentences into one sentence. Guidelines for the writing/grammar section included examples of permissible and impermissible answers for each item. For instance, item 5 consisted of the sentences, “The girl looked frightened” and “She wasn’t frightened.” Permissible answers included

“The girl (She) looked scared (frightened) but she wasn’t,” or “Even though she looked frightened, she wasn’t.” An example of an impermissible answer is: “She was frightened but didn’t look it.” Each student’s overall English proficiency score was the sum of the four subtests’ raw score.

Table 3-5. Examples of subtests

Subtest	Example
1 (Listening/Vocabulary)	[palm]
5 (Reading/Vocabulary)	[red, green, blue] A. yellow B. circle C. orange D. light
6 (Reading/Grammar)	A. Sam plays. B. Sam will not play. C. Sam has played. D. Sam is playing. E. Sam is going to play.
8 (Writing/Grammar)	We ate lunch. It was an hour ago.

Since the writing/grammar subtest was an open-ended question, the answers were varied. For the scoring of this subtest, I discussed students’ answers with a native speaker of English to ensure that they would be scored fairly. The native speaker was 24 years old at the time of the study and had worked as a teaching assistant in the Academic Spoken English program at the University of Florida for 2.5 years. After I listed all of the students’ answers that were not in the guidelines, the native speaker and I went over the responses item by item. A student’s score represents the sum of correct answers on these four subtests.

For scoring of the recalls, I followed Carrell’s (1992) study by dividing the text into “idea units,” because it is important to have a small idea unit in this study. Having small idea units prevents cases of participants producing half-correct and half-incorrect

responses in one idea unit. I did not weigh the idea units by level of importance, because the purpose of the reading comprehension test was to observe total number of idea units recalled, not type of idea units recalled. Basically, each idea unit consisted of a single clause (main or subordinate, including adverbial and relative clauses). Each infinitive, gerund, and conjunction was considered a separate idea unit. Moreover, prepositional phrases were identified as separate idea units. If an idea was complex, it was broken into smaller idea units. Students' scores consisted of the total number of idea units that they successfully recalled. The following are the number of idea units for each of the five texts: "The Olympic Games" (100); "Supertankers" (104); "Closing down nuclear power plants" (98); "On being fat in America" (142); "Nuclear energy versus solar energy" (91).

For my study I did not choose to employ Meyer's (1985) recall protocol scoring system, which has been used frequently in previous research. Meyer's system identifies the structural characteristics as well as the lexical units of a passage, and for this reason is important for researchers. Moreover, the procedure helps to measure the relationship between passage type and level of performance. Because the system arranges the idea units hierarchically, its use provides a demonstration of not only which lexical and relational units are recalled, but also from which portion of the structure those units are remembered. However, there are disadvantages to the Meyer recall protocol system. First, the Meyer recall protocol requires a considerable amount of time, and hence is not efficient. Also, it requires sufficient expertise to develop instruments (Bernhardt, 1991, pp. 201-203). For these reasons, Carrell's system had better applications to my study.

After the scoring templates were finalized for each text, I graded a total of 183 recall protocols. The scoring template of each reading passage was determined based on

the same rules. Generally, I chose flexible scoring. If a subject paraphrased and the meaning of the idea unit was the same as in the original idea unit, it was considered correct. More importantly I was concerned with ideas, not grammar. Hence, a different usage of an auxiliary verb or unimportant grammatical mistakes were considered correct idea units. I decided that rephrasing of an idea unit was acceptable response before grading, because the central concern is having a subject and a verb together in an idea unit. I checked with a native speaker in order to obtain native speaker intuition on the accuracy of the participants' responses. When there was a conflict, we discussed the issue and came to an agreement on an analysis.

Statistical Analyses

A one-way analysis of variance (ANOVA) was performed to determine statistical significance of the two proficiency groups, (Higher and Lower), in terms of the TOAL. An ANOVA was also performed to determine statistical significance of the subgroups, ("control", "vocabulary" and "expanded framework") in each proficiency group. In order to examine the relationship between students' anxiety levels and recall scores, TOAL scores and recall, and LOR and recall, a Pearson product-moment correlation coefficient was performed. Descriptive statistics were used to describe each subgroup's responses on the FLRAS and the RSQ.

CHAPTER 4 RESULTS

This chapter includes the results of the TOAL-3, the recall protocols, and the participants' background information. For the TOAL-3, descriptive statistics and the results of a one-way analysis of variance (ANOVA) of the results are presented. The relationship between the students' English proficiency, as measured by the TOAL-3 and their reading ability, as measured by the recall is examined. Also, the relationship between the students' reading proficiency in English, as measured by the subtest 6 (Reading/Grammar) and their reading ability, as measured by the recall is examined. Finally, this chapter includes the results of the questionnaires, i.e., the FLRAS, the Reading Strategy Questionnaire (RSQ), and the relationship between the results of these questionnaires and other factors. Information concerning the students' length of residence is also discussed.

Results of Test of Adolescent and Adult Language (TOAL-3)

The purpose of administering the TOAL-3 was to systematically measure the students' proficiency levels. Four subtests were administered in the study: Subtest 1 (Listening/Vocabulary), subtest 5 (Reading/Vocabulary), subtest 6 (Reading/Grammar) and subtest 8 (Writing/Grammar). A total raw score (120) is the sum of the four subtests' raw scores. The mean percentage of accurate responses of the Higher (H) group was 65.65% and that of the Lower (L) group was 48.25%.

In order to determine if there is a statistically significant difference between the H and the L groups in terms of the TOAL-3 raw score, a one-way analysis of variance

(ANOVA) was performed. As expected, the results were statistically significant ($[F(1, 59) = 47.473, p = 0.000]$). This result confirmed that participants in the H group are significantly more proficient than those in the L group.

Standard Score for TOAL-3

The TOAL-3 standard scores provide an indication of a person's subtest performance. The mean of the TOAL-3 subtest standard scores is always 10 and the standard deviation is 3. A significant aspect of this system is that a standard score on one subtest may be compared with a standard score on any other subtest (Hammill et al, 1994, p. 36). Table 4-1 gives the guidelines for describing standard scores and the guidelines apply to each subtest.

Table 4-1. Guidelines for describing standard score

Standard score	Description
17-20	Very superior
15-16	Superior
13-14	Above average
8-12	Average
6-7	Below average
4-5	Poor
1-3	Very poor

Table 4-2. Total standard score and Mean standard score

Group	Total standard score (61)	Mean standard score	Mean percentage
High (N = 31)	1096/1891	35.35	57.96
Low (N = 30)	762/1830	25.40	41.64

Table 4-3. TOAL-3 total standard score by subtest for H group

Subtest (# of total standard score)	Lowest	Highest	Mean	SD
1 (16)	3	12	7.52	1.75
5 (15)	4	12	7.71	1.62
6 (14)	7	14	10.65	1.87
8 (16)	6	12	9.48	1.61

Table 4-4. TOAL-3 total standard score by subtest for L group

Subtest (# of total standard score)	Lowest	Highest	Mean	SD
1 (16)	1	9	5.07	2.20
5 (15)	3	10	5.77	1.59
6 (14)	3	12	7.70	2.32
8 (16)	2	11	6.87	2.62

The total standard score (61) is the sum of the four subtests' standard scores. The total maximum score is 16 for subtest 1, 15 for subtest 5, 14 for subtest 6, and 16 for subtest 8. As shown in Table 4-2, the mean percentage for the standard score of the H group was 57.96% and 41.64% for the L group. An ANOVA showed that there was no significant difference among the subgroups (control, vocabulary, and expanded framework group) on the total standard score in either the H or the L group. However, there was a significant difference between the two proficiency groups, on the total standard score ($[F(1, 59) = 47.559, p = 0.000]$). For example, an ANOVA showed that there was a significant difference between the proficiency groups on subtest 1's standard score ($[F(1, 59) = 23.302, p = 0.000]$), on subtest 5's standard score ($[F(1, 59) = 22.378, p = 0.000]$), on subtest 6's standard score ($[F(1, 59) = 28.849, p = 0.000]$), and on subtest 8's standard score ($[F(1, 59) = 22.227, p = 0.000]$).

The lowest score for the TOAL-3 total standard score for the H group was 27 and the highest score was 46 out of 61. The lowest score for the TOAL-3 total score for the L group was 9 and the highest score was 36 out of 61 (H group, M: 35.35, SD: 4.52; L group, M: 25.40, SD: 6.59).

The TOAL-3 presented normative tables for subtests for scoring based on the standard scores and percentiles. Both H and L groups had the highest mean standard score of 10.65 and 7.70, respectively, for subtest 6 (reading/grammar). Also, both groups had the lowest mean standard score of 7.52 and 5.07, respectively, for subtest 1

(listening/vocabulary). The H group had a much higher mean score (9.48) than the L group (6.87) in subtest 8 writing/grammar (Tables 4-3 and 4-4). The results show the average standard scores for both groups. For the H group, the mean standard score was 8.84 (SD: 1.13), which is in the range of 8–12 ‘average’ according to Table 4-1. For the L group, the mean standard score was 6.35 (SD: 1.65), which is in the range of 6–7 ‘below average’.

Standard Scores for TOAL-3 by Subgroups

Within each group, the mean and standard deviation of each subgroup was evaluated based on standard scores. Of the H subgroups, the control group had the highest score, followed by the expanded framework group, which in turn was followed by the vocabulary group (Table 4-5). The mean and standard deviation of subgroups in the L proficiency group were also calculated in Table 4-6. The expanded framework group had the highest score, followed by the vocabulary group, and the control group had the lowest score. In order to investigate statistical significance among the subgroups at each proficiency level, a one-way ANOVA was performed. There was no statistically significant difference among the subgroups in either the H or L proficiency group ($p = 0.282$ and $p = 0.082$, respectively). Therefore, I assume that the subgroups’ proficiency levels are the same. I discuss the interrelationship of students’ proficiency level and text adjuncts in detail in the discussion chapter.

Tables 4-7 and 4-8 give the ANOVAs for the H and L subgroups on each of the TOAL-3’s subtests. There were no statistically significant differences among the subgroups for each subtest in the H group. In the L group, there were no statistically significant differences among the subgroups for any subtest except for subtest 6 (Reading/Grammar) ($F(2, 27) = 5.145, p = 0.013$). A post-hoc Bonferroni test revealed

that both the vocabulary group and the expanded framework group performed significantly better than the control group ($p = 0.018$ and $p = 0.046$, respectively).

Table 4-5. Mean and SD of total standard score in H group

Subgroup	Mean	SD
Control	36.55	5.07
Expanded framework	35.90	4.31
Vocabulary	33.50	3.89

Table 4-6. Mean and SD of total standard score in L group

Subgroup	Mean	SD
Expanded framework	27.27	6.34
Vocabulary	27.00	6.20
Control	21.33	6.12

Table 4-7. Standard score in H group (ANOVA)

Subtest		<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
1	Between groups	2	2.62	0.85	0.439
	Within groups	28	3.09		
	Total	30			
5	Between groups	2	4.73	1.92	0.165
	Within groups	28	2.46		
	Total	30			
6	Between groups	2	0.99	0.27	0.765
	Within groups	28	3.68		
	Total	30			
8	Between groups	2	6.40	2.76	0.080
	Within groups	28	2.32		
	Total	30			

Table 4-8. Standard score in L group (ANOVA)

Subtest		<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
1	Between groups	2	2.12	0.42	0.660
	Within groups	27	5.02		
	Total	29			
5	Between groups	2	2.00	0.78	0.469
	Within groups	27	2.57		
	Total	29			
6	Between groups	2	21.57	5.15	0.013
	Within groups	27	4.19		
	Total	29			
8	Between groups	2	11.47	1.75	0.192
	Within groups	27	6.54		
	Total	29			

Recall Protocols

This section examines raw scores and mean percentages of recalls for all texts, which are listed in Table 4-9 along with the number of idea units in each. The first text, “The Olympic Games,” read by both proficiency groups, yields crucial comparable results. Table 4-10 presents mean percentage of subgroups for the H group and Table 4-11 presents mean percentage of subgroups for the L group. An ANOVA showed that there was a statistically significant difference in recall scores between the two proficiency groups for this passage ($[F(1, 59) = 58.857, p = 0.000]$), suggesting that the reading ability of the H group is significantly higher than the reading ability of the L group. For this loosely-structured text, the expanded framework subgroups for both H and L groups benefited most from the text adjunct. The expanded framework group for H had the highest score, while the other treatment group, the vocabulary group, had the lowest score. However, an ANOVA showed that there was no significant difference among the three groups in the H group ($[F(2, 28) = 3.126, p = 0.060]$). In contrast, the two treatment groups for the L group had a better score than the control group (Table 4-11). An ANOVA showed that there was a significant difference among the three groups in the L group ($[F(2, 27) = 6.040, p = 0.007]$). A post-hoc Bonferroni test revealed that the vocabulary group recalled significantly more than the control group ($p = 0.024$), and that the expanded framework group also recalled significantly better than the control group ($p = 0.010$). Therefore, for the loosely-structured text, both the expanded framework text adjunct and the vocabulary list text adjunct were helpful for the L group students.

For the ‘problem and solution’ passage, each proficiency group read a text chosen to match students’ proficiency level. The higher proficiency students read “Supertankers”

Table 4-9. Reading text and number of idea units

Group	Reading text	Text type	Number of idea units
Both groups	The Olympic games	Collection of descriptions	100
High	Supertankers	Problem/solution	104
	Closing down nuclear power plants	Comparison/contrast	98
Low	On being fat in America	Problem/solution	142
	Nuclear versus solar energy	Comparison/contrast	91

Table 4-10. Mean (%) of subgroups for “tightly-structured” passages and for “all passages” (H group)

Group	Subgroup	P/S	C/C	Mean of tightly-structured passages	C/D	Mean of all passages
H	C	41.52	28.57	35.05	43.36	37.82
	V	47.21	33.98	40.60	37.80	39.66
	E	63.08	54.39	58.74	59.90	59.12

P/S: problem/solution text, C/C: comparison/contrast text, C/D: collection of descriptions text; C: control group, V: vocabulary group, E: expanded framework group

Table 4-11. Mean (%) of subgroups for “tightly-structured” passages and for “all passages” (L group)

Group	Subgroup	P/S	C/C	Mean of tightly-structured passages	C/D	Mean of all passages
L	C	11.03	10.26	10.65	6.56	9.28
	V	16.76	20.44	18.60	16.40	17.87
	E	20.49	17.08	18.79	17.36	18.31

and the lower proficiency students read “On being fat in America.” For the tightly-structured text read by the H group, “Supertankers,” the expanded framework group again had the highest reading score, followed by the vocabulary group, and the control group with the lowest score. However, there was no significant difference among the three groups. For the tightly-structured text read by the L group, “On being fat in America,” the expanded framework group also had the highest reading score, followed by

the vocabulary group, and the control group had the lower score. However, again, there was no significant difference among the three groups.

For the “comparison/contrast” passage, each group of students again read a text chosen according to their proficiency levels. The H group students read ‘Closing down nuclear power plants’ and the L group students read “Nuclear versus solar energy.” For the tightly-structured text, “Closing down nuclear power plants,” the expanded framework group once again had the highest reading score, followed by the vocabulary group, followed by the control group. In this case, there was a significant difference among the three groups ($[F(2, 28) = 5.662, p = 0.009]$). A post-hoc Bonferroni test revealed that the expanded framework group recalled significantly more than the control group ($p = 0.010$), but not more than the vocabulary group.

For the tightly-structured text, “Nuclear versus solar energy,” the vocabulary group had the highest recall score, followed by the expanded framework group, followed by the control group. There was a significant difference among the three groups ($[F(2, 27) = 4.207, p = 0.026]$). A post-hoc Bonferroni test revealed that the vocabulary group recalled significantly more than the control group ($p = 0.024$).

For the H group, the expanded framework group scored the highest average in both tightly-structured passages: the problem/solution and comparison/contrast passages. For the L group, the expanded framework group benefited most for the problem/solution passage but the vocabulary group benefited most for the comparison/contrast passage. In the H group, an ANOVA showed that there was a significant difference among the subgroups ($[F(2, 59) = 7.185, p = 0.002]$). A post-hoc Bonferroni test revealed that the expanded framework group did better than the control group ($p = 0.002$), and the

vocabulary group ($p = 0.025$). In other words, for the tightly-structured passages, the expanded framework text adjunct was more helpful than the vocabulary list text adjunct in the H group. In the L group, an ANOVA showed that there was also a significant difference among the subgroups on the tightly-structured texts ($[F(2, 57) = 4.038, p = 0.023]$). A post-hoc Bonferroni test revealed that the expanded framework group did better than the control group ($p = 0.031$), but not better than the vocabulary group.

Within the H group, the expanded framework group achieved the highest percentage score for all passages. For the tightly-structured texts, the expanded framework group scored the highest with the vocabulary group placing second. However, for the loosely-structured text, the control group recalled more than the vocabulary group. When all texts are considered together, the expanded framework groups showed the highest mean percentage score among three groups. In the H group, an ANOVA showed that there was significance between the subgroups on all texts together ($[F(2, 90) = 10.005, p = 0.000]$). A post-hoc Bonferroni test revealed that the expanded framework group did better than the control group ($p = 0.000$), and better than the vocabulary group ($p = 0.001$).

Within the L group, the expanded framework groups showed the highest percentage score for both the collection of descriptions passage and the problem/solution passage. For the comparison/contrast text, however, the vocabulary group achieved the highest percentage score. When all texts are considered together, the expanded framework groups showed the highest percentage score, although there was not a significant difference between the vocabulary group and the expanded framework group. An ANOVA showed that there was a significant difference among the subgroups on all

texts together ($[F(2, 87) = 7.856, p = 0.001]$). A post-hoc Bonferroni test revealed that the expanded framework group did better than the control group ($p = 0.001$), and that the vocabulary group also did better than the control group ($p = 0.005$).

Effects of Text Structures according to Proficiency Level

Table 4-12 presents the mean recall percentage of all passages for the H group and Table 4-13 presents the mean recall percentage of all passages for the L group. The students in both groups recalled the most for the problem/solution text.

Table 4-12. Mean (%) for “tightly-structured” passages and for “all passages” (H group)

Group	P/S	C/C	Mean percentage of tightly-structured passages	C/D	Mean percentage of all passages
H	50.60	38.98	44.79	47.02	45.53

Table 4-13. Mean (%) for “tightly-structured” passages and for “all passages” (L group)

Group	P/S	C/C	Mean percentage of tightly-structured passages	C/D	Mean percentage of all passages
L	16.09	15.93	16.01	13.44	15.15

In order to determine a statistically significant difference among the three text types, the collections of descriptions, problem/solution, or comparison/contrast in each proficiency group, a one-way ANOVA was performed. There was a statistically significant difference among the text types in the H group ($[F(2, 90) = 3.376, p = 0.039]$). A post-hoc Bonferroni test revealed that the mean recall score of problem/solution text was significantly higher than that of the comparison/contrast text (Mean: 52.32, 37.87, respectively) ($p = 0.035$). Moreover, there was also a statistically significant difference among the text types in the L group ($[F(2, 87) = 7.215, p =$

0.001]). A post-hoc Bonferroni test revealed that the mean recall of problem/solution text was significantly higher than that of the collection of descriptions text (Mean: 23.30, 13.80, respectively) ($p = 0.003$), and that the mean recall of problem/solution text was significantly higher than that of the comparison/contrast text (Mean: 23.30, 14.70, respectively) ($p = 0.007$).

The overall results reveal that there was no difference between the loosely-structured text and the tightly-structured texts in the H group. However, participants in the Lower proficiency group recalled significantly more idea units from the tightly-structured text than from the loosely-structured text type (Mean: 13.80, 19.00, respectively) ($[F(1, 88) = 4.303, p = 0.041]$).

Relationship between Proficiency and Recall Scores

In order to examine a relationship between the students' proficiency levels and their recall scores, a Pearson product-moment correlation coefficient was performed. Table 4-14 gives the summary of the correlations between the TOAL-3 and all readings. Overall, a moderate correlation was found between participants' raw TOAL-3 scores and the number of ideas units they recalled from the collection of description passage. However, this correlation was significant only among participants in the higher proficiency group ($r = 0.443, p = 0.013$) but not among those in the lower proficiency group ($r = 0.618, p = 0.000$). There was no relationship between the students' English proficiency, as shown by the TOAL-3, and the recall scores of the problem/solution passages for either group. However, there were correlations for the comparison/contrast passages for both groups ($r = 0.398, p = 0.027$ for the H group, and $r = 0.472, p = 0.009$ for the L group). Since there were significant correlations between the TOAL-3 scores and only some of the reading

scores, as shown in Table 4-14, a student's English proficiency does not always affect reading in a second language.

Table 4-14. Correlations between TOAL-3 and readings

Group	C/D (%)	P/S (%)	C/C (%)
H	44	22	40
	$p = 0.013$		$p = 0.027$
L	13	29	47
			$p = 0.009$
Both groups	62		
	$p = 0.000$		

Tables 4-15 and Table 4-16 are summary tables of the mean number and percentage of idea units recalled per passage and per treatment type. Standard deviations are given in parentheses. Since there were no statistically significant differences among subgroups for either H or L group, the mean percentage of each subgroup per passage in the following tables informs the text adjunct effect.

Table 4-15. Mean number and percentage of idea units recalled correctly per passage and per text adjunct in H group

	Control		Vocabulary		Expanded framework		Row mean	
	#	%	#	%	#	%	#	%
C/D (N = 100)	43.36 (22.92)	43.36	37.80 (15.01)	37.80	59.90 (22.64)	59.90	47.02 (22.02)	47.02
P/S (N = 104)	43.18 (22.35)	41.52	49.10 (15.91)	47.21	65.60 (27.35)	63.08	52.63 (23.66)	50.60
C/C (N = 98)	28.00 (14.16)	28.57	33.30 (13.75)	33.98	53.30 (24.37)	54.39	38.2 (20.59)	38.98
Column mean	38.18 (19.81)	37.82	40.07 (14.89)	39.66	59.6 (24.79)	59.12		

Varying Effects of Text Adjuncts according to Text Structure

In the H group, an ANOVA showed that there was a statistically significant difference among the subgroups for the comparison/contrast text ($p = 0.009$). For the collections of descriptions text, the difference among the subgroups was not significant

Table 4-16. Mean number and percentage of idea units recalled correctly per passage and per text adjunct in L group

	Control		Vocabulary		Expanded framework		Row mean	
	#	%	#	%	#	%	#	%
C/D (N = 100)	6.56 (2.35)	6.56	16.40 (8.04)	16.40	17.36 (9.45)	17.36	13.44 (8.71)	13.44
P/S (N = 142)	15.67 (11.80)	11.03	23.80 (11.67)	16.76	29.09 (16.59)	20.49	22.85 (14.37)	16.09
C/C (N = 91)	9.33 (3.87)	10.26	18.60 (9.96)	20.44	15.55 (5.77)	17.08	14.49 (7.80)	15.93
Column mean	10.52 (6.01)	9.28	19.6 (9.89)	17.87	20.67 (10.60)	18.31		

but neared significance ($p = 0.060$). For the problem/solution text, the difference of the subgroups was not significant but again neared significance ($p = 0.079$). In the L group, an ANOVA showed that there was a statistically significant difference between the subgroups for the collections of descriptions and the comparison/contrast texts, $p = 0.007$ and $p = 0.026$, respectively. However, there was no significant difference between the subgroups for the 'problem/solution' text ($p = 0.112$). These results suggest that the text adjuncts help the lower-level proficiency ESL students to read in an L2 more than the higher-level proficiency ESL students.

In the H group, the expanded framework group recalled the highest mean percentage of idea units per text adjunct for all texts together (Table 4-15). An ANOVA showed that the expanded framework group recalled significantly more than both the vocabulary and the control groups for all texts together. Therefore, the expanded framework text adjunct was more helpful than the vocabulary text adjunct. The mean difference between the vocabulary group and the control group was not significant. Individually, the text adjunct effect was only significant for the comparison/contrast text.

For this text, there was a significant mean difference between the expanded framework group and the control group (Means: 53.30, 28.00, respectively).

In the L group, although the expanded framework group recalled the highest mean percentage of idea units per text adjunct for all texts together, the mean difference between the expanded framework group and the vocabulary group was not significant (Table 4-16). An ANOVA showed that the expanded framework group recalled significantly more than did the control group, as did the vocabulary group, for all texts together. Therefore, I claim that both text adjuncts provide a benefit for the lower proficiency ESL students. The mean difference between the expanded framework group and the vocabulary group was not significant. Furthermore, in the L group, the text adjunct effect was significant for the ‘collections of descriptions’ and the ‘comparison/contrast’ texts. For the ‘collections of descriptions’ text, there was a significant mean difference between the vocabulary group and the control group (Means: 16.40, 6.56, respectively), and between the expanded framework group and the control group (Means: 17.36, 6.56, respectively). For the ‘comparison/contrast’ text, there was a significant mean difference between the vocabulary group and the control group (Mean: 18.60, 9.33, respectively). Tables 4-17 and 4-18 are ANOVA tables on the readings in each proficiency group.

This section was intended to examine whether there is a relationship between reading proficiency, as determined by the TOAL-3, and L2 reading ability, as measured by recalls. For the reading proficiency, the scores of subtest 6 scores of the TOAL-3 were used.

Table 4-17. ANOVAs on the readings in H group

		<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
C/D	Between groups	2	1327.83	3.13	0.060
	Within groups	28	424.75		
	Total	30			
P/S	Between groups	2	1392.92	2.79	0.079
	Within groups	28	500.11		
	Total	30			
C/C	Between groups	2	1830.64	5.66	0.009
	Within groups	28	323.29		
	Total	30			

Table 4-18. ANOVA on the readings in L group

		<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
C/D	Between groups	2	339.82	6.04	0.007
	Within groups	27	56.27		
	Total	29			
P/S	Between groups	2	447.90	2.38	0.112
	Within groups	27	188.54		
	Total	29			
C/C	Between groups	2	209.59	4.21	0.026
	Within groups	27	49.82		
	Total	29			

Relationship between Reading Proficiency and Reading Ability

There was a moderately strong correlation between the reading proficiency and the recall score for “The Olympic games” passage that was given to all participants ($r = 0.590, p = 0.000$). In other words, if a student had a high reading proficiency score on the TOAL-3, s/he also recalled more of this passage than a student with a low reading proficiency score, and vice versa. Looking at the groups individually, a significant correlation was found between the reading proficiency and the recall score in the H group ($r = 0.497, p = 0.004$). However, there was no such correlation between the reading proficiency and the recall score in the L group.

Summary

There were no statistically significant differences in scores on the TOAL-3 among the subgroups in each proficiency group. Therefore, we are able to claim that the subgroups in the H group all have the same higher English proficiency and those in the L group all have the same lower English proficiency. The H group's expanded framework subgroup performed at the highest level of proficiency for all passages, receiving the highest mean percentage across all passages. For the L group, the expanded framework group performed at the highest level of proficiency only for the collection of descriptions and the problem/solution texts. However, if we look at the column mean in Table 4-16, the expanded framework group received the highest mean percentage across all passages. For the tightly-structured texts, the two types of text adjuncts, (i.e., expanded framework and vocabulary) both worked well. For example, in the H group, the expanded framework groups received the best score, followed by the vocabulary groups. In the L group, the expanded framework group received the best score for the problem/solution passage, while the vocabulary group received the best score for the comparison/contrast passage. For the loosely-structured text, the control group in H recalled more idea units than the vocabulary group. If we look at the column mean closely, only the expanded framework text adjunct was very helpful for the higher proficiency ESL students, since there was a significant difference between the mean percentage of the vocabulary group and the expanded framework group (39.66% and 59.12%, respectively). However, both expanded framework and vocabulary text adjuncts were helpful for the lower proficiency ESL students, and there was not a significant difference between the mean percentage of the vocabulary group and the expanded framework group (17.87% and 18.31%, respectively). Because of this correlation, I will discuss the effect of text adjuncts

thoroughly in the discussion chapter. Additionally, students at both proficiency levels received the best recall score for the problem/solution passage.

In terms of the relationship between the TOAL-3 scores and recall scores, we do not have consistent results. In other words, there were correlations for the collection of descriptions text and the comparison/contrast text. However, there was no relationship between the problem/solution passages and the TOAL-3 for either proficiency group. This would imply that students' English proficiency did not always correlate with their reading ability.

Background Information Questionnaire

Relationship between FLRAS and Other Factors

Some second language researchers have examined the notion that ESL students' background information plays a role in L2 (second language) reading. In this section, I examine three factors from the background questionnaire employed in the study: the foreign language reading anxiety scale (FLRAS), the Reading strategy questionnaire (RSQ), and Length of Residence (LOR). The FLRAS was administered to determine whether there is a relationship between a student's anxiety level and proficiency level, as measured by the TOAL-3, and a student's anxiety level and reading ability, as measured by the recalls. Tables 4-19 and 4-20 give the average score by item of the FLRAS. A Likert scale was used in the FLRAS questionnaire with 1 being 'strongly disagree' and 5 being 'strongly agree'.

Table 4-19. Average score by item in the FLRAS for H group

	1	2	3	4	5	6
E	2.9	2.1	2.8	2.1	3.3	3.6
V	2.8	2.9	2.2	2.1	3	4
C	2.82	2.64	2.18	2.73	2.64	3.27
Av.	2.84	2.55	2.39	2.31	2.98	3.62

E: Expanded framework group, V: Vocabulary group, C: Control group

Table 4-20. Average score by item in the FLRAS for L group

	1	2	3	4	5	6
E	2.91	2.91	2.82	3.45	2.27	3.36
V	3.5	3.1	2.4	3.3	1.9	3.1
C	3.56	3	2.78	3.22	2.89	3.56
Av.	3.32	3.00	2.67	3.32	2.35	3.34

For items 1 to 5, a higher score signifies that a student has more anxiety in foreign language reading. The results showed that the H group students were less anxious than the L group on these five items. The average score of all subgroups in the H group was around 2 ‘strongly disagree’ on items 1 to 5. However, the subgroups in the L group answered 2 ‘strongly disagree’ only on item 3, “I get upset when I don’t understand the grammar in a sentence when reading English,” and item 5, “I feel very uncomfortable when a teacher asks me to read aloud in class.” A moderate negative correlation between the TOAL-3 raw score and the average score of FLRAS items 1-5 for both groups was found ($r = -0.402, p = 0.001$). This means that if a student is highly anxious, her/his English proficiency is low, and vice versa. A moderate negative correlation between the FLRAS score and the collection of descriptions passage for both groups was found ($r = -0.351, p = 0.006$). This suggests that if a student is highly anxious, his reading score for this passage will be low, and vice versa.

Pearson product correlations indicate that there were relationships between the students’ anxiety levels and their reading scores for the H group. Specifically, there was a moderate negative correlation between FLRAS and the ‘problem/solution’ passage in the H group ($r = -0.423, p = 0.018$) as well as for the ‘comparison/contrast’ passage ($r = -0.444, p = 0.012$).

Unlike the H group, there were no significant relationships between FLRAS and the recall scores on the ‘problem/solution’ passage and the ‘comparison/contrast’ passages in the L group.

Relationship between Reading Strategy Questionnaire (RSQ) and Proficiency Level

It is meaningful to compare the reading strategy tendencies between the two groups. Within the H group, the average score on the top-down reading strategies was 4.03 (agree) and on the bottom-up reading strategies was 2.52 (disagree). Therefore, top-down reading strategies were used more by the higher proficiency students than bottom-up reading strategies. By contrast, within the L group, the average score on the top-down reading strategies was 3.83 (neither agree nor disagree) and on the bottom-up reading strategies and it was 3.08 (neither agree nor disagree). Two ANOVAs showed that the difference between the top-down reading strategies and the bottom-up reading strategies in the H group was significant ($p = 0.000$), and that the difference between the two strategies in the L group was also significant ($p = 0.000$). Additionally, separate ANOVAs revealed that the difference between H group and the L group on the bottom-up reading strategies was significant ($p = 0.005$) as well as the difference between the H group and the L group on the top-down reading strategies was not significant ($p = 0.135$).

The reading strategies that were queried ranged from the student’s translation practice to focused reading exercises. For example, on item 4, “I usually translate into my native language when I read an English passage,” the H group showed a lower average score than the L group, which means that the H group students admit to translating less into their native languages when they read an English passage than the L group students. An ANOVA showed that the difference between the H group and the L group on item 4 was significant ($[F(1, 59) = 4.113, p = 0.047]$). There was a significant difference

between the two groups on item 6, “I usually pronounce words silently, and when I don’t know how to pronounce a word, I think I won’t get the right meaning.” ($F(1, 59) = 7.841, p = 0.007$). The average score for this question by the H group was 2.13 and for the L group, it was 2.91. On item 7 “I think it’s helpful if a teacher gives me information about a text *before I read*,” both groups answered 4 ‘agree.’ On item 8 “I think reading out loud to myself is helpful,” the average scores for both groups showed they thought reading out loud was helpful (Tables 4-21 and 4-22).

Table 4-21. Average score by item in the RSQ for H group

Item	E	V	C	Av.
1	4.2	4	4.18	4.13
2	4	4.2	3.73	3.98
3	3.9	4	4	3.97
4	2.3	3.1	2.73	2.71
5	2.8	2.4	2.91	2.70
6	2	2.3	2.09	2.13
7	4	4.2	4	4.07
8	3.4	3.8	3.55	3.58

Table 4-22. Average score by item in the RSQ for L group

Item	E	V	C	Av.
1	3.91	3.6	3.78	3.76
2	4.09	3.8	3.89	3.93
3	4.18	3.9	3.22	3.77
4	3.36	3.4	3.22	3.33
5	2.82	3.6	2.56	2.99
6	2.82	2.7	3.22	2.91
7	3.91	3.9	3.67	3.83
8	4.36	3.5	3.56	3.81

Item 9, “Rate your reading skill in your native language,” was intended to compare the students’ reading ability in the L2 with their self-rated reading ability in their native languages. Table 4-23 gives the average scores of item 9 on the RSQ.

Correlation between L1 reading ability and L2 reading score on TOAL-3

To test for correlations between students' self-rated L1 reading ability and their reading score on the TOAL-3, item 9 on part III of the background information questionnaire and subtest 6 (reading/grammar) of the TOAL-3 were employed. The results showed that there was no relationship between the students' self-rated first language reading skill and L2 reading proficiency for all groups together. Also, while there was no relationship between the students' self-rated first language reading skill and reading proficiency for the L group, there was a moderate relationship between these two factors for the H group ($r = 0.356$, $p = 0.049$).

Table 4-23. Average score of item 9 on the RSQ for both groups

Group	Subgroup	
H	E	1.7
	V	2
	C	2.36
	Av.	2.02
L	E	2
	V	2.3
	C	2.78
	Av.	2.36

Correlation between L1 reading ability and L2 recall score

To further examine the correlations between students' self-rated L1 reading ability and their L2 reading ability, I examined item 9 on part III of the background information questionnaire, and the students' recall scores. The results suggested that there was a relationship between L1 reading ability and the recall score on "The Olympic games" passage for neither all participants nor the participants in the H group alone. Furthermore, there were no relationships between L1 reading ability and the recall scores on other passages for the H group. However, there was a relationship between L1 reading ability and the recall score on "The Olympic games" passage for participants in the L group ($r =$

-0.424, $p = 0.020$) and between L1 reading ability and the recall score on the “On being fat in America” passage ($r = -0.366$, $p = 0.046$).

Correlation between Length of Residence (LOR) and Other Factors

Overall, it was found that there was no relationship between the students’ anxiety level and LOR. This was true for both the higher and lower proficiency groups. On the other hand, there was a strong relationship between the TOAL-3 score and LOR ($r = 0.625$, $p = 0.000$). However, further analysis revealed that this relationship was significant only among participants in the higher proficiency group ($r = 0.582$, $p = 0.001$).

CHAPTER 5 DISCUSSION

The results of this study indicate several key connections between the role of proficiency, the effects of text adjuncts, and the interrelationship between L2 learners' proficiency and reading in an L2. To understand the importance of the findings, I will first recapitulate the main results from the previous chapter as a foundation for the following discussion. To begin with, there was a significant difference between the H group and the L group in terms of the TOAL score. Second, there was no significant difference among the subgroups within each proficiency group on the TOAL score. Third, the expanded framework group's recall score for the H group was significantly higher than either the vocabulary or the control group for all texts considered together. In the L group, for all texts considered together, the vocabulary group's and the expanded framework group's recall score were both significantly higher than the control group. However, there was no significant difference between the expanded framework group and the vocabulary group in the L group. Fourth, there was a strong correlation between the students' English proficiency and the 'collection of descriptions' passage. Fifth, there was a moderate negative correlation between the TOAL raw score and the average score of the five FL reading anxiety items (anxiety score). Finally, there was a moderate negative correlation between the anxiety score and the 'collection of descriptions' passage for all participants.

The most important conclusion that I will draw in this discussion is the effects of text adjuncts, the relationship between English proficiency and second language reading

ability, the relationship between FL reading anxiety and reading in an L2, and the relationship between students' reading strategies and reading ability. It also discusses this study's contribution to previous research in L2 reading.

Interrelationship between L2 Proficiency and Text Adjunct

Since there was no significant difference on the TOAL score among the subgroups in each proficiency group, it was assumed that those subgroups had a similar if not the same proficiency level. However, the two types of text adjuncts provided differential benefits according to proficiency level. Although the expanded framework proved most beneficial for the H group, both the expanded framework and the vocabulary list benefited the L group equally. As expected, the L group students did not have enough vocabulary knowledge for reading a passage. As such, the vocabulary text adjunct was helpful to the lower level proficiency students. By contrast, the data indicates that it is possible that the H group students did not need additional vocabulary knowledge to read the texts, suggesting that the expanded framework is a much more important textual aid.

The results of the present study support the theory that inefficient readers tend to use low-level text processing skills. As mentioned previously, supplemental vocabulary information was helpful for low-level students. Although high proficiency students can use information from outside the text to understand the text when they meet unknown words, low proficiency students may not be able to use other information if they do not have sufficient vocabulary knowledge.

The interrelationship between a student's proficiency and the effect of text adjuncts provides an interesting correlation, but it cannot be used to predict successful reading. Within the H group, the control group received the highest proficiency score in terms of mean percentage on the TOAL but did not receive the highest recall score.

Instead, the expanded framework group received the highest recall score for all texts. Within the L group, the vocabulary group received the highest proficiency score in terms of mean percentage on the TOAL but received the highest recall score only for the comparison/contrast text. This finding suggests that L2 proficiency may help the students understand a text but it does not always guarantee successful L2 reading.

Recall that the subgroups' differences were only statistically significant for the comparison/contrast text for the H group and were statistically significant for the collection of descriptions and the comparison/contrast texts in the L group. In other words, although the expanded framework group in the H group benefited most for each text, the results were only meaningful for the comparison/contrast passage. For this text, the expanded framework group benefited most from text adjuncts, followed by the vocabulary group. These results suggest that text adjuncts facilitate L2 reading depending on the text. For the comparison/contrast text for the H group and for the collection of descriptions and the comparison/contrast texts for the L group, the control groups at each proficiency level received the lowest scores. Hence, students who receive supplemental text adjuncts can possibly improve their reading performance.

Interaction between Text Type and Text Adjunct within Each Proficiency Level

This study supports the claim that a text adjunct enhances reading comprehension. In the H group, the text adjunct effect was significant only for the comparison/contrast text. It is noted that the text adjunct effect neared significance for the collections of descriptions passage. In the L group, the text adjunct effect was significant for the 'collections of descriptions' and the 'comparison/contrast' texts. Since the text adjunct effect was significant for two texts in the L group, unlike the H group, these results

suggest that the text adjuncts help the low-level proficiency ESL students to read in an L2 more than they help the high-level proficiency ESL students.

Although the expanded framework group students recalled significantly more than either the control group students or the vocabulary group students for all three texts together in the H group, the difference between the expanded framework group and the vocabulary group was not significant for all three texts together in the L group. The general explanation that I posit is that both text adjuncts benefited the lower proficiency ESL students.

I argue that the expanded framework text adjunct was the most helpful to the higher proficiency ESL students when they read the comparison/contrast text. Although the expanded framework text adjunct was the most helpful when the lower proficiency ESL students read the collections of descriptions (loosely-structured type) and the problem/solution (tightly-structured type) passages, the vocabulary text adjunct was also very helpful. These results are different from Lee and Riley's (1990) study. They concluded that an expanded framework helped improve their novice readers' comprehension of a loosely-structured type of passage (description collection), but not of a tightly-structured type (problem-solution). Since Lee and Riley's results were different from the present study's results, I discuss several possible reasons of the differences. For, example, in Lee and Riley's study, the participants were inexperienced native speakers of English learning French. Since they used class enrollment in order to determine their participants as novice foreign language readers, we really do not know the proficiency of the students, or the effect of their proficiency. In my study, the proficiency of students in the L group is significantly lower than that of students in the H group. However, this does

not mean that the students in the L group are really low-proficiency students. Similarly, the proficiency of students in the H group is significantly higher than that of students in the L group but this does not mean that the students in the H group are really high-proficiency students. Therefore, when the “lower” level students were given the expanded framework text adjunct before they read a text in my study, they may not really be real novice ESL learners.

The results from the present study provide many suggestions for researchers/teachers of a second language. First, giving information about a text structure to ESL students was very helpful for both levels of the ESL students in comprehending the text. Second, vocabulary knowledge was as important as the information about a text structure for the lower-proficiency students. ESL teachers should be aware of this characteristic in particular when they teach L2 reading to low-proficiency students. As several previous researchers have noted, teaching vocabulary items related to the passage is much more important than teaching vocabulary items randomly. In other words, building vocabulary without considering a reading passage is almost not useful to a student’s reading ability. This can explain the limitations of short-term memory when an ESL student tries to recall a reading passage without understanding what was read.

Since there was no main difference between the vocabulary subgroup and the expanded framework subgroup for all texts, I claim that both text adjuncts were helpful for the lower proficiency students in reading L2 texts. It is known that low proficiency students tend to use bottom-up reading strategies when reading an L2 text. Hence, it is assumed that the low proficiency students need a vocabulary text adjunct to comprehend an L2 text. However, as the results of the present study showed, both the vocabulary list

text adjunct and the expanded framework text adjunct were helpful for the lower-proficiency ESL students when they read some texts. Yet, when the lower-proficiency students read the comparison/contrast text, only the vocabulary group among the subgroups recalled significantly more than the control subgroup. This suggests that the vocabulary list text adjunct was helpful for the low-proficiency students to read a tightly-organized L2 text.

The purpose of giving a text adjunct before the students read the L2 text is to activate the students' background knowledge, and, therefore, the text adjunct helps the students' L2 reading comprehension. As I discussed before, it is not necessary that the vocabulary list text adjunct activate the bottom-up reading process and that the expanded framework text adjunct activate the top-down reading process. As most recent reading researchers agree, the most successful L2 reading comprehension depends on an interactive process (Fender, 2001; Nassaji, 2002). It is assumed that low proficiency students do not have enough vocabulary knowledge to read fluently. It is also assumed that the low proficiency students tend to use bottom-up reading strategies. The present study results suggest that both text adjuncts helped the lower proficiency students activate their background knowledge, and, thereby, helped them comprehend an L2 text.

On the other hand, high-level ESL students or native speakers might use other textual or extra-textual information when they are not quite sure of the meaning of unknown words. This is related to Hudson's (1982) notion of 'behind the eyeball' knowledge of efficient readers. Therefore, efficient readers keep using an interaction between bottom-up and top-down reading processes.

Among the three passages, the students in both groups recalled most for the ‘problem/solution’ passage. This suggests that a passage which has a tight structure is easier for ESL students to read than a passage which has a loose structure. If we compare the recall scores of the loosely-structured text with those of the two tightly-structured texts together, students in the H group recalled more of the loosely-structured text than of the tightly-structured texts, 47.02% and 44.79%, respectively. This suggests that a well-organized text structure may not be important for the high-proficiency students. However, the L group students recalled more of the tightly-structured texts than the loosely-structured text, 16.01% and 13.44%, respectively. Because of their relatively low proficiency level, the low-proficiency students find a tightly-structured L2 text easier to comprehend. The results imply that a well-organized text structure is more important to low level ESL students.

Role of English Proficiency in L2 Reading

Another important factor which has been discussed in L2 reading is L2 proficiency. Taillefer (1996) found that as the reading task became more cognitively difficult, the role of linguistic ability became more important. Also, several researchers, such as Clarke (1980) and Kern (1989), claimed that a learner’s L2 proficiency level is an important factor in determining L2 reading comprehension. Clarke (1980) argued that if a student did not achieve some minimal level of proficiency in the L2, (i.e., a threshold), he/she could not comprehend a text successfully or read the way native speakers read. It is noted that one can determine whether there is a correlation between English proficiency and reading ability, but one cannot determine causation. However in accord with previous research, I claim that my study shows that higher proficiency ESL students’ reading

ability was better than the lower proficiency ESL students' reading ability when they read the same text.

The results of the relationships between the students' proficiency and their reading scores from the present study were not consistent. Recall that all students read a loosely-structured text, the 'collections of descriptions' passage. There was a statistically significant relationship between L2 proficiency, as measured by the TOAL-3, and recall of the 'collection of descriptions' passage for all participants. Each proficiency group read two tightly-structured texts, which differed to match their proficiency level. In the H group, there was no significant relationship between students' proficiency and the "Supertankers" passage. However, there was a relationship between their proficiency and the "Closing down the nuclear power plants" passage. In the L group, there was no significant relationship between their proficiency and the "On being fat in America" passage. However, there was a relationship between their proficiency and the "Nuclear versus solar energy" passage. These results might be related to the role of the text. Both texts which did not have a correlation with students' proficiency in both the H and the L groups were problem/solution passages. This is probably because the text difficulty level was too high for the students, or the students did not have enough background knowledge about the text. These inconsistent results could be interpreted as showing that an L2 learners' English proficiency itself is not sufficient for successful reading in an L2.

Relationship between ESL Learners' Anxiety Levels and their Proficiency Levels

Individual differences such as anxiety have played a role in L2 reading. Reading in an L2 requires many factors such as topic knowledge, vocabulary knowledge, and L2 proficiency. Other than these factors, anxiety might be another important aspect which

some highly anxious L2 learners must cope with when reading in an L2. Reading anxiety could prevent ESL readers from reading successfully.

The results show that there was a negative correlation between the TOAL raw score and the average score of the 'reading anxiety' items. The negative correlation suggests that ESL students' anxiety impedes their L2 proficiency. While this was only a moderate relationship, it was statistically significant. Since we used a standardized test, we can generalize the results from the present study to the ESL population.

Relationship between Students' Anxiety Level and Reading Ability

Several researchers have attempted to examine whether there is a relationship between ESL students' anxiety levels and their reading ability (Saito et al. 1999; Sellers, 2000). The results of this study show that there was a negative relationship between reading anxiety and the collection of descriptions passage for all participants. The results confirmed that ESL students' reading anxiety played a role in their reading comprehension. As previous studies have shown, anxious students had a difficult time recalling information from a text. In the H group, there was a relationship between reading anxiety and both the problem/solution passage and the comparison/contrast passage. The results imply that highly anxious students tend to have low recall scores in the H group. However, there were no such relationships between reading anxiety and the reading passages in the L group. This result contradicts previous research, in the sense that lower proficiency students' reading anxiety level did not really correlate with their reading ability. The L group students might have a topic knowledge on the passages, which explains that there was no correlation between their reading anxiety and the recall scores. It is noted that I measured the ESL students' reading comprehension ability by using recall protocols, making the results generalizable.

Relationship between ESL Learners' Reading Strategies and their Reading Comprehension Ability

It has been claimed that there is a relationship between reading process, (i.e., bottom-up, top-down or interactive) and reading ability. Many researchers have attempted to show that successful readers use specific types of reading strategies and unsuccessful readers use other types of reading strategies. In the present study, the reading strategies on the RSQ were intended to represent students' preferred reading processes. For example, the item on the reading strategy questionnaire (RSQ), "When reading in English, I skip the words I don't know and continue reading," was intended to show evidence of a top-down reading process. On the RSQ, items 1, 2, 3 and 7 were top-down reading strategies; items 4, 5 and 6 were bottom-up reading strategies; and item 8 was a reading belief.

Results of this study indicated that top-down reading strategies were employed more frequently by all students. Within the H group, the average score on the top-down reading strategies was 4.03 (agree) and on the bottom-up reading strategies was 2.52 (disagree). Therefore, top-down reading strategies were preferred more by the higher proficiency students than bottom-up reading strategies. By contrast, within the L group, the average score on the top-down reading strategies was 3.83 (neither agree nor disagree) and on the bottom-up reading strategies, it was 3.08 (neither agree nor disagree). Separate ANOVAs showed that the difference between the two strategies in the L group was significant, and that the difference between the H group and the L group on the bottom-up reading strategies was significant. However, the difference between the H group and the L group on the top-down reading strategies was not significant. Although the average difference between the top-down and bottom-up reading strategies

in the L group was not as big as the H group, I claim that the lower proficiency students also used more top-down strategies than bottom-up strategies when they read in an L2, which challenges the notion that unsuccessful ESL readers tend to use bottom-up reading strategies more when they read an L2 text. Another implication of my study is that the data permits an investigation to determine the relationship between self-rated reading skills in students' native languages and their L2 reading ability. The averages of item 9 on the RSQ, "Rate your reading skill in your native language," for the H group and for the L group were 2.02 and 2.36, respectively, with '2' meaning 'fairly good.' The correlation between the self-rated reading skill and the "Olympic games" passage was significant only for the L group. This means that L1 literacy transfers to L2 literacy especially for low-proficiency students. Since the correlation was significant only for the L group, second language researchers should pay attention to the low-proficiency students' assessment of their L1 reading skill for better L2 reading.

Relationship between Reading Strategies and Proficiency

To understand the relationship between reading strategies and proficiency it is necessary to look at the average score by item. For the H group, Item 1 had the highest average score, followed by Item 7. In other words, the higher-proficiency ESL students employed these top-down reading strategies most when they read in an L2. Item 6 had the lowest average score. For the L group, Item 2 had the highest average score, followed by Item 7. The result of my study suggested that even the low-proficiency students used top-down reading strategies more than bottom-up reading strategies. ESL researchers and teachers should be aware of this and try not to focus only on bottom-up reading strategies when they instruct reading strategies to low-proficiency students. As for the L group, Item 6 had the lowest average score.

Students in both groups thought that receiving information about a text before they read would be helpful. Since Item 6 had the lowest average score for both groups, the students in this study thought there would be no relationship between knowing the pronunciation of a word and getting the right meaning. For Item 8, there was an average score of 3.58 and 3.31 for the H group and the L group, respectively. Hence, the students neither agreed nor disagreed about the benefits of reading out loud. These results suggest that the tendency between the high proficiency students and the low proficiency students on the reading strategies is similar, which contradicts many of the previous studies. Such a contradiction suggests that further research needs to investigate how reading strategies and proficiency relate.

Correlation between LOR and Other Factors

Relationship between LOR and Students' Anxiety Level

Several researchers in anxiety studies have been interested in the fact that ESL students' backgrounds, including their native languages and the length of residency in a target country, play a role in the students' anxiety levels. In the present study, there was no relationship between the students' anxiety level, as measured by the 'reading anxiety,' and the LOR, for both proficiency groups considered together or for each proficiency group individually. The small number of items on L2 reading anxiety might be the reason for the lack of a clear relationship between these items.

Relationship between LOR and Students' Proficiency Level

There was a strong relationship between the students' TOAL score and LOR for both groups together. Furthermore, there was a relationship between the students' TOAL scores and LOR in the H group. This would imply that ESL students' L2 proficiency depends on how long they have lived in the target language country.

In contrast, there was no relationship between LOR and the students' TOAL score in the L group. In terms of LOR, there were some important differences between the proficiency levels. First, the average LOR for the H group was 26.55 months and that for the L group was 4.67 months. Second, while the lengths of residency varied for the H group, such as 2, 3, or 4 years, one student in the L group who had lived in the U.S. for more than a year. In other words, it is hard to examine the relationship between the students' proficiency and LOR among those who have lived in the target country for such a short time.

Relationship between LOR and Reading Ability

LOR was an important factor, among many, in determining a student's reading ability. There was a significant relationship between the students' LOR and all participants' recall scores on the 'Olympic games' passage. Since successful L2 reading mostly depends on students' background knowledge on a text, experience in a target culture is helpful to L2 reading.

Interviews with Participants

After I finished the experiment with the higher proficiency students, I interviewed them. Regarding the reading comprehension test, many students said that the recall test was much more difficult than traditional methods of measuring reading comprehension, such as multiple choice questions or fill-in-the-blank type questions. On the question I asked the participants, "Do you think short term memory would affect your recall?" to which they answered that short term memory was not very helpful if they did not understand the passage and tried to recall from the passage.

As Nassaji (2003) notes, when L2 readers have prior knowledge about a passage they read, they should recall that passage better than when they do not have as much prior

knowledge about that passage (p. 460). Several students mentioned the importance of topic familiarity. They said if they were not familiar with the topic of a passage before they read the text, comprehending the text would be difficult for them. In fact, there were many graduate students whose majors were engineering. They told me that the topics such as “Supertankers” or “Nuclear power plants” were quite familiar to them, suggesting that the scientific topics gave an advantage to engineering students.

CHAPTER 6 CONCLUSION

In this section I will summarize the principal findings from the present study and provide an analysis of the pedagogical and research implications. Additionally, I will discuss the limitations of the present study.

Principal Findings

To determine a statistical significance between the H and the L groups in terms of the TOAL-3 score, a one-way analysis of variance (ANOVA) was performed. As expected, the results were significant. This means that we can claim that the students in the H group are significantly more proficient than those in the L group. In addition, a correlation between the TOAL raw score and the groups (Higher and Lower) was found. This means that the Higher group students achieved a higher English proficiency score than the Lower group students and the relationship is statistically significant.

To look for statistical significance among the subgroups of each proficiency level, a one-way ANOVA was performed. There was no statistical significance among the subgroups in the H group. Likewise, there was no statistical significance among the subgroups in the L group. Therefore, we assume that subgroups' proficiency levels within each group are same.

For the data generated from the loosely structured “The Olympic games” passage that was used for both groups an ANOVA showed that there was a statistically significant difference between the groups, (Higher and Lower). This suggests that the

reading ability of the H group is significantly higher than the reading ability of the L group.

In the H group, an ANOVA showed that there was a statistically significant difference between the subgroups, control, vocabulary and expanded framework groups, for the comparison/contrast text. For the collections of descriptions text, the difference of the subgroups was not significant but neared significant. Furthermore, for the problem/solution text, the difference of the subgroups was not significant.

In the L group, an ANOVA showed that there was a statistically significant difference between the subgroups, control, vocabulary and expanded framework groups, for the collections of descriptions and the comparison/contrast texts. However, there was no significant difference between the subgroups for the problem/solution text.

In order to determine a statistical significance of the text types, (the collections of descriptions, problem/solution, or comparison/contrast) in each proficiency group, a one-way ANOVA was performed. There was a statistically significant difference on the three different text types in the H group. Yet, there was a statistical significance between the three different text types in the L group.

According to the results, there was no significant difference on the two text types, the loosely-structured text and the tightly-structured texts in the H group. However, there was a significant difference between the two text types, the loosely-structured text and the tightly-structured texts in the L group.

There was a statistically significant relationship between the TOAL and the loosely-structured text for H. Since both groups read the same passage, e.g., a collection of descriptions passage, a correlation test for all participants for the passage was

performed and the correlation was significant. There were no relationships between the students' English proficiency, as shown by the TOAL, and the problem/solution passages for both groups. However, there were correlations for the comparison/contrast passages for both groups. In addition, a correlation between the 'collection of descriptions' passage raw score and the groups (Higher and Lower) was found. This means that there is a very high negative relationship between the two groups and their reading scores.

In the H group, an ANOVA showed that there was a statistically significant difference between the subgroups for 'all texts together.' This result suggests that the expanded framework group recalled significantly more than the others for all texts. Moreover, in the L group, an ANOVA showed that there was a statistically significant difference between the subgroups for 'all texts together,' with both the expanded framework group and the vocabulary group recalling significantly more than the control group.

The higher proficiency students recalled significantly more of the problem/solution passage than for the comparison/contrast passage. On the other hand, the lower proficiency students recalled significantly more of the problem/solution passage than both the comparison/contrast passage and the collection of descriptions passage. This suggests that a passage which has a structure that is easier for lower proficiency ESL students to read than a passage which has a loose structure.

There was a correlation between the reading proficiency as determined by subtest 6 (reading/grammar) of the TOAL, and the recall score for "The Olympic games" passage among all participants. In other words, if a student has a high reading proficiency score, s/he is better at reading in a second language than a student with low reading proficiency

score, and vice versa. A significant correlation was found between the reading proficiency and the reading score in the H group.

The results showed that the H group students were less anxious than the L group on the 'reading anxiety' items. A correlation between the TOAL raw score and the average reading anxiety items for both groups was found. This means that ESL students' anxiety level might affect their English proficiency. A correlation between the reading anxiety score and the 'collection of descriptions' passage for both groups was found. If a student is highly anxious, her/his reading score for this passage is lower, and vice versa.

Pearson product correlations found that there were relationships between the students' anxiety levels and their reading scores for the H group. Specifically, there was a correlation between the reading anxiety score and the problem/solution passage in the H group. Also, there was a correlation between the reading anxiety score and the comparison/contrast passage in the H group.

Within the H group, the average score on the top-down reading strategies was 4.03 (agree) and on the bottom-up reading strategies was 2.52 (disagree). Therefore, top-down reading strategies were preferred more by the higher proficiency students than bottom-up reading strategies. As a contrast, within the L group, the average score on the top-down reading strategies was 3.83 (neither agree nor disagree) and on the bottom-up reading strategies and it was 3.08 (neither agree nor disagree).

The results show that there was no relationship between the students' self-rated L1 reading skill and reading proficiency, as measured by subtest 6 (reading/grammar) for groups together. There was a relationship between the students' self-rated L1 reading skill and reading proficiency for the H group.

For the correlation tests, item 9 on part III of the background information questionnaire and the students' reading scores on "The Olympic Games" passage were employed. There was a relationship between L1 reading skill and the reading scores for the L group.

There was a strong relationship between the students' TOAL score and LOR for both groups. The relationship between the students' TOAL scores and the LOR was most significant within the H group.

Pedagogical Implications

The results of this study provide SL teachers and researchers with insight into some possible practical applications for the classroom. Generally, for the higher proficiency students, giving expanded framework information was helpful and for the lower proficient students, giving both expanded framework and vocabulary information was helpful. Of these text adjuncts that assist in L2 reading, the most important for language instructors who mostly deal with lower level students is providing accurate vocabulary information.

It goes without saying that vocabulary is an essential factor for L2 learners, not only in reading but also in other areas, such as speaking and listening. In many cases, not knowing a word causes L2 learners to lose track of the main idea in spoken or written communication. Also, in order to use a word in speech or in writing, they must know what it means. Therefore, vocabulary is an essential component to all aspects of L2 performance.

Regarding vocabulary teaching, the researcher has some suggestions for L2 classroom teachers. First, when they instruct lower level ESL students, the teachers should teach vocabulary important to understanding a passage but unknown to the

students, *before* they read the passage. After reading, it might be useful to tell them to make sentences using the words as a test. Second, the teachers could group all the vocabulary words related to the passage for the students so that they build their vocabulary according to a topic. Furthermore, the lower proficiency students recalled significantly more in the problem/solution passage, which has a tight structure than in the collection of descriptions passage, which has a loose structure. Therefore, ESL teachers should examine the rhetorical structure of their reading materials, and instruct lower level ESL students with tightly-structured texts in a reading class.

The lower proficiency students' reading anxiety level was higher than that of the higher proficiency students. However, the difference was not significant. Recall that for the five items on the FLRAS, a higher score signifies higher anxiety. L2 teachers should pay attention especially to lower level ESL students, because their relatively high anxiety level could hinder their learning in classroom.

Research Implications

There are several strengths in the present study. First, I measured the participants' English proficiency using a standardized test, the TOAL-3. I did not measure only the students' reading proficiency, for example, as evidence of their overall English proficiency. Since there was a significant difference between the proficiency groups, Higher and Lower, the results from the present study can be generalized to the ESL population. Second, I chose three different types of reading texts to examine the interrelationship between the text types and the effects of text adjuncts. Third, I used a single scoring template to grade the participants' recall protocols. This makes the present study's results easier to generalize.

The study revealed that there was a correlation between students' L2 proficiency and their reading ability. Moreover, there was a correlation between their reading proficiency in the L2, as measured by the subtest 6 (reading/grammar) of the TOAL and their reading comprehension of these texts, as measured by recall protocols. This provides evidence that ESL students' proficiency should not be neglected in L2 reading. Prior to this study there was almost no research on ESL learners' L2 proficiency and their reading ability, so this factor should be explored more in future

There was a negative correlation between the TOAL raw score and the reading anxiety score in the L group. However, there was no correlation between the TOAL raw score and the 'reading anxiety' score in the H group. This implies that reading anxiety and lower proficiency ESL students' proficiency are linked. The results show that there was a negative relationship between the reading anxiety score and the collection of descriptions passage for all participants. In the H group, there were relationships between the reading anxiety score and the problem/solution passage and between the reading anxiety score and the comparison/contrast passage. The results imply that highly anxious students tend to have low recall scores in the H group. However, there were no relationships between the reading anxiety score and the reading passages in the L group.

In addition, reading in a classroom for a test is different from reading for pleasure. If a student has test anxiety it is possible for him/her to receive a low score on a reading test because of test anxiety. In order to distinguish foreign language reading anxiety from test anxiety, future researchers should administer both scales to ESL students.

Limitations of Current Study

Sixty-one students participated in the present study and there were two proficiency groups. Since the study had a relatively small sample, it was hard to divide the

participants into high, intermediate, and low proficiency groups. Including an intermediate proficiency group, could have resulted in having all students from the same language background in any one group, because the heterogeneous sample of ESL students contained many Chinese and Korean students. It is recommended that researchers in the future use a larger sample size so that they study the results that include an intermediate proficiency group also. To compare students' language backgrounds and other factors, such as their proficiency scores, in each area, it is ideal to have sufficient numbers of other language backgrounds as well. Also, the present study used a 'balanced random' sample where I divided the students into subgroups. This was to avoid the situation of having students from the same language background in one group. If researchers have enough different language backgrounds, it would be better to divide students randomly into subgroups.

Another challenge to this study is evaluating the degree of proficiency. Although I measured the students' English proficiency level systematically, it is difficult to ascertain the extent of the H group's high proficiency, and, likewise, the extent of the L group's low proficiency students. Since I did not have an intermediate group, some of the students in the present study could be considered as an intermediate threshold between the two groups.

The texts that I chose might have an effect on the participants' performance. I chose the texts according to general matches between the students' proficiency and the text level; however, the text level might be too high for some students or too low for other students. Furthermore, I did not measure the students' background knowledge on the texts they read, which could potentially affect anxiety, and proficiency.

The study employed a six-item FLRAS. The purpose of administering the FLRAS was to pilot test how the students felt when they read in an L2. Since we only had five 'reading anxiety' items, it is recommended that future researchers add more reading anxiety items and examine any relationship between ESL students' reading and their anxiety. Also, the correlation we found was based only on the students' answers on the FLRAS.

As a part of researching the correlations in this study, I have only limited information that would sufficiently explain how one factor affects the other. In other words, I can not claim that the students' proficiency affected their reading ability even though there was a relationship between the proficiency and the reading score. However, I still claim that ESL learners' proficiency cannot be overlooked because it has a relationship with other factors in SL areas. In that sense, it is important to measure ESL students' proficiency reliably. Also, when measuring overall proficiency, comprehensiveness should matter. Hence, SL researchers should consider including adequate areas to measure students' proficiency, over and above simply judging proficiency through separate reading and grammar tests.

APPENDIX A
BACKGROUND QUESTIONNAIRE

Part I Language Background

The questions below are for research purposes only, and your answers will not be made available to anyone. Please answer the following questions or check the appropriate answers.

1. Name: _____

First

Last

2. DOB: _____

3. Sex: _____ Male _____ Female

4. Native language(s): _____

5. Do you speak any language(s) other than your native language and English?

6. How long ago did you come to the U.S?

7. How old were you when you first came to the U.S.?

8. What percentage do you speak *English* in these situations? *Your native language?*

English

Native languages other than English

Please specify: _____

_____ % at school? _____ %

_____ % at home? _____ %

_____ % with friends? _____ %

_____ % other? _____ %

9. Places you have lived for more than 6 months:

_____	from _____ to _____

Part II

Directions: Statements 1 through 6 refer to how you feel about learning English. For each statement, please tell me whether you (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, or (5) strongly agree, by circling the appropriate number on the line following each statement. Please give your first reaction to each statement and circle an answer for every statement.

1. When reading English, I often understand the words but I don't always understand what the author is saying.

1 2 3 4 5

2. When I'm reading, I am nervous if I don't know the topic.

1 2 3 4 5

3. I get upset when I don't understand the grammar in a sentence when reading English.

1 2 3 4 5

4. When reading English, if I don't understand every word, I get nervous and confused.

1 2 3 4 5

5. I feel very uncomfortable when a teacher asks me to read aloud in class.

1 2 3 4 5

6. I like to do group work in English class.

1 2 3 4 5

Part III

Directions: Statements 1 through 8 are about reading in English. For each statement, please tell me whether you (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, or (5) strongly agree, by circling the appropriate number on the line following each statement. Please choose the number that best describes your actions to each statement when reading in a foreign language and circle an answer for every statement. For item 9, please use this scale (1-very good, 2-fairly good, 3-average, 4-below average, 5-bad).

1. When reading in English, I skip the words I don't know and continue reading.

1 2 3 4 5

2. I read the title and imagine what the article might be about.

1 2 3 4 5

3. I start reading and try to figure out the meaning as I go along.

1 2 3 4 5

4. I usually translate into my native language when I read an English passage.

1 2 3 4 5

5. I read every word and look up the ones I don't know.

1 2 3 4 5

6. I usually pronounce words silently, and when I don't know how to pronounce a word, I think I won't get the right meaning.

1 2 3 4 5

7. I think it's helpful if a teacher gives me information about a text *before I read*.

1 2 3 4 5

8. I think reading out loud to myself is helpful.

1 2 3 4 5

9. Rate your reading skill in your native language.

very good fairly good average below average bad

APPENDIX B
SUMMARY OF TEXTS

For High and Low levels:

The Olympic Games (268 words)

-source: Oh, J. (1990). Diss. University of Texas at Austin.

-a collection of descriptions

For High level:

Supertankers (240 words)

-source: Meyer, Brandt, and Bluth (1980). Reading Research Quarterly, 16

-problem and solution

Closing down nuclear power plants (265 words)

-source: Carrell (1992). Language Learning, 42.

-comparison/contrast

For Low level:

On being fat in America (325 words)

-source: Connor (1984). TESOL Quarterly, 18.

-problem and solution

Nuclear energy versus solar energy (254 words)

-source: Carrell (1985). TESOL Quarterly, 19.

-comparison

The Olympic Games

In ancient Greece, athletic festivals were very important, and strongly related to religion. The Olympian athletic festival was held every four years in honor of Zeus. The festival lost its local character, and became first a national event. Then, after the rules against foreign competitors had been removed, it became international. No one knows exactly when the Olympic Games began, but some records date from as early as 776 B.C.

The Olympic Games took place in August on the field by the mountain called Olympus. Thousands of people gathered from all parts of Greece. The exact order of events is not certain, but the Olympic Games included events such as gymnastics, horse-racing, javelin throwing, and foot races.

On the sixth and last day, all the winners were crowned with holy garlands of wild olive. Olympic winners received no prize money. However, they were in fact richly rewarded by their provincial authorities. The public honor also made worthwhile the ten-month training the athletes went through. How their results would compare with modern standards, we have no means of telling.

After an uninterrupted history of almost 1,200 years, the Olympic Games were abolished in A.D. 394. The reason was that the Games were held in honor of Zeus, not the Christian God. It was over 1,500 years before there was another such international athletics gathering. The Olympic Games were revived in 1896, and the first small meeting took place in Athens, Greece. After the 1908 London Olympics, success was re-established, and nations sent their best representatives. In times of peace ever since, the Olympic Games have taken place every four years.

On Being Fat in America

Fat people in American society are often discriminated against in their jobs and forced to degrade themselves publicly, sociologists find. Two sociologists, Dr. Ardyth Stimson of New Jersey's Kean College and Dr. Jack Kamerman, are currently studying fat people and their role in society.

According to Dr. Stimson, "We treat people who are fat as handicapped people but we don't give them the sympathy that we give to other handicapped people. Instead, they're completely rejected and blamed for their handicap. In addition, they're expected to participate in what we sociologists call degradation ceremonies. In other words, you're supposed to stand there and say, "Hee, hee, hee, don't I look awful? Hee, hee, hee, isn't it funny I can't move around?"

"Some cities," Kamerman said, "set overweight limits for teachers, and if you exceed that limit-25 percent above what the insurance tables define as healthy-you are fired." He also said that there have been other studies that found fat people do not get promoted as easily and do not advance in a company.

Stimson recently completed a study of 40 women, and while none was even remotely medically overweight, she said 39 felt they were fat, and it caused some of them trouble in their everyday relationships.

"America has become so weight conscious," she said, "that 40 percent of all Americans are now considered overweight." She said there is something wrong in a society when that percentage of people are considered to be abnormal. "The problem is so great," she said, "if you are overweight, people no longer think of you as a doctor, a lawyer, or a teacher but as that fat person."

In some instances, the mental pain of fat people is so severe that the effect it has on their lives far surpasses the medical complications that could arise as a result of being fat. If fat men and women were treated as equals, their self-esteem would rise and they would probably lose weight.

Supertankers

A problem of vital concern is the prevention of oil spills from supertankers. A typical supertanker carries a half-million tons of oil and is the size of five football fields. A wrecked supertanker spills oil in the ocean; this oil kills animals, birds, and microscopic plant life. For example, when a tanker crashed off the coast of England, more than 200,000 dead seabirds washed ashore. Oil spills also kill microscopic plant life which provides food for sea life and produces 70 percent of the world's oxygen supply. Most wrecks result from the lack of power and steering equipment to handle emergency situations, such as storms. Supertankers have only one boiler to provide power and one propeller to drive the ship.

The solution to the problem is not to immediately halt the use of tankers on the ocean since about 80 percent of the world's oil supply is carried by supertankers. Instead, the solution lies in the training of officers of supertankers, better building of tankers, and installing ground control stations to guide tankers near shore. First, officers of supertankers must get top training in how to run and maneuver their ships. Second, tankers should be built with several propellers for extra control and backup boilers for emergency power. Third, ground control stations should be installed at places where supertankers come close to shore. These stations would act like airplane control towers, guiding tankers along busy shipping lanes and through dangerous channels.

Closing Down Nuclear Power Plants

There are two different views on the best approach to shutting down nuclear power plants once their usefulness has been served. The first approach is immediate dismantlement. Shortly after a plant shutdown, workers would take out highly radioactive fuel parts, clean the internal machinery and then take away all remains of the plant to special nuclear dumps. The second approach to the problem of dismantlement is mothballing. This contrasting approach also calls for the removal of fuel parts and decontamination, but then the plant shell would simply wait behind a fence for thirty to a hundred years while its radiation decays, after which final dismantlement would presumably take place. There are advantages and disadvantages involved with each of the two approaches to the problem of nuclear dismantlement.

According to many experts immediate dismantlement is the most effective and least expensive of the approaches. The high cost of maintenance and security as well as the possibility of radioactive leaks are concerns that weigh against mothballing. Supporters of the mothball approach to dismantlement cite immediate dismantlement as the most dangerous option to undertake. They suggest that immediate dismantlement could release the deadliest amounts of radioactivity onto workers and the public. Extreme precautions would have to be taken and workers would still be exposed to at least four times as much radiation as they would be if dismantlement were delayed thirty years. Another problem with immediate dismantlement is that at this time there is an absence of permanent disposal sites. Plans have been made to create adequate disposal sites, but it will be years before they are completed.

Nuclear Energy versus Solar Energy

Two of the most promising sources of energy for the future are nuclear power and solar power. Both sources of energy have numerous advantages and disadvantages which must be considered in the development of energy programs.

For several decades, many governments have attached great hopes to nuclear energy as a less expensive alternative to oil and other fossil fuels. However, opposition to nuclear energy has increased in recent years. One of the main concerns of the critics of nuclear energy is the damage that the release of radioactive materials could inflict upon communities surrounding nuclear power stations. Harmful materials could cause serious health problems for individuals and could have disastrous effects on the environment. Another issue concerning nuclear energy involves using nuclear plants for the manufacture of nuclear weapons. This is especially a point of concern about countries with unstable governments, where nuclear materials could easily be used for nonpeaceful ends by terrorist groups. Solar power is the other energy source over which there are differing opinions. One of the main advantages of solar energy is that the primary required resource—the sun—is abundantly available over most parts of the earth. Also, if a country's main source of energy were to come from solar power, it would not have to depend upon other countries in order to maintain its energy supply. The main negative feature of solar power is that the technology is still being developed in this field and is not yet sufficiently reliable or cheap enough to compete with other sources of energy.

APPENDIX C
TEXT ADJUNCTS

The Olympic Games (High and Low)

Vocabulary Group

javelin (noun): a long stick with a pointed end, thrown as a sport

garland (noun): a ring of flowers or leaves, worn for decoration or in special ceremonies

provincial (adj.): relating to a province

the authorities: the people or organizations that are in charge of a particular place

abolish (verb): to officially end a law, system etc.

revive (verb): to come back into use or existence, or bring something back into use or
existence

Expanded Framework Group

This passage presents a collection of descriptions of the Olympic Games. It explains their origin and details their history.

On Being Fat in America (Low)

Vocabulary Group

discriminate (verb): to treat a person or group differently from another in an unfair way

degrade (verb): to treat someone without respect or to make people lose their respect for
someone

sociology (noun): the scientific study of societies and the behavior of people in groups

look awful (verb): to look bad

exceed (verb): to go beyond an official or legal limit

promote (verb): to give someone a better, more responsible position at work

advance (verb): to move forward to a new position

surpass (verb): to be better or greater than someone or something else

self-esteem (noun): the feeling that you are someone who deserves to be liked, respected,
and admired

Expanded Framework Group

This passage presents a problem and solution of being fat in America. It demonstrates various problems or disadvantages of being fat in American society and gives a solution.

Supertankers (High)

Vocabulary Group

wrecked (adj.): destroyed, ruined or damaged

microscopic (adj.): extremely small

crash (verb): to have an accident in which a car, plane etc. hits something and is badly
damaged

halt (verb): to stop or make something stop

backup (noun): someone or something that provides help or support when it is needed

Expanded Framework Group

This passage presents the problem of oil spills from supertankers and several solutions to the problem.

Closing Down Nuclear Power Plants (High)

Vocabulary Group

dismantle (verb): to gradually get rid of a system or organization

mothball (verb): to close a factory or operation, and keep all its equipment or plans for a
long time without using them

decay (verb): to be slowly destroyed by natural chemical processes

disposal (noun): the act of getting rid of something

Expanded Framework Group

This passage presents a comparison and contrast of two different approaches to shutting down nuclear power plants. Then, it presents advantages and disadvantages of each of the two approaches to the concern of nuclear dismantlement.

Nuclear Energy versus Solar Energy (Low)

Vocabulary Group

alternative (noun): something you can choose to do or use instead of something else

fossil fuel (noun): a fuel such as gas or oil that has been formed from plants and animals that lived millions of years ago

release (verb): to stop holding something

inflict (verb): to make someone suffer something unpleasant

disastrous (adj.): very bad or ending in failure

manufacture (noun): the process of making goods usually in large numbers

Expanded Framework Group

This passage presents a comparison of nuclear energy and solar energy. Then, it discusses each energy respectively.

APPENDIX D
RECALL

- When you have finished reading the passage, turn the page and write in English **everything that you remember**, despite whether or not you understand the material or concepts. Do not refer to the passage during this activity.
- If you have any questions about procedures or if you are unclear on any matter, please ask now.
- Please try to write as much as you can.
- Please try to use complete sentences. If you can't, you can use the words in the passage or your own words.

APPENDIX E
SCORING TEMPLATE

The Olympic Games (Idea Units: 100)

In ancient Greece,
athletic festivals were ... important,
very
and
strongly
related
to religion

The Olympian athletic festival was held
every four years
in honor
of Zeus

The festival lost
its local character,
and
became... a national event
first

Then,
after
the rules...had been removed
against foreign competitors
it became international

No one knows
exactly
when
the Olympic Games began,
but
some records date
from...776 B.C.
as early as

The Olympic Games took place
in August
on the field

by the mountain
called Olympus

Thousands of people gathered
from all parts
of Greece

The exact order...is not certain,
of events
but
the Olympic Games included
events
such as gymnastics,
horse-racing,
javelin throwing,
and
foot races

On the sixth (and)
last day,
all the winners were crowned
with holy garlands
of wild olive

Olympic winners received
no prize money

However,
they were ...rewarded
in fact
richly
by their provincial authorities

The public honor...made worthwhile
also
the ten-month training
the athletes went through

How
their results would compare
with modern standards,
we have
no means
of telling

After an uninterrupted history
of ... 1,200 years,
almost
the Olympic Games were abolished
in A.D. 394

The reason was
that the Games were held
in honor
of Zeus,
not the Christian God

It was over 1,500 years
before
there was
another such international
athletics gathering

The Olympic Games were revived
in 1896,
and
the first small meeting took place
in Athens,
Greece

After the 1908 London Olympics,
success was re-established,
and
nations sent
their best representatives

In times
of peace
ever since,
the Olympic Games have taken place
every four years

On Being Fat in America (Idea Units: 142)

Fat people ...are ...discriminated against
in American society
often
in their jobs
and
forced
to degrade
themselves

publicly,
sociologists find

Two sociologists,...are...studying
Dr. Ardyth Stimson
of New Jersey's Kean College
and
Dr. Jack Kamerman
currently
fat people
and
their role
in society

According to Dr. Stimson,
We treat
people
who are fat
as handicapped people
but
we don't give
them
the sympathy
that we give
to other handicapped people

Instead,
they 're... rejected
completely
and
blamed
for their handicap

In addition,
they 're expected
to participate
in...degradation ceremonies
what
we sociologists call

In other words,
you're supposed
to stand there
and
say
Hee, hee, hee,

don't I look awful
Hee, hee, hee,
isn't it funny
I can't move around

Some cities...set
Kammerman said
overweight limits
for teachers
and
if
you exceed
that limit
25 percent above
what
the insurance tables define
as healthy
you are fired

He ... said
also
(that) there have been other studies
that found
fat people do not get promoted
as easily
and
do not advance
in a company

Stimson...completed
recently
a study
of 40 women
and
while
none was...overweight
even
remotely
medically
she said
39 felt
they were fat,
and
it caused
some of them

trouble
in their everyday relationships.

America has become...weight conscious
so
she said
(that) 40 percent...are...considered
of all Americans
now
overweight

She said
there is something wrong
in a society
when
that percentage...are considered
of people
to be abnormal

The problem is ...great
so
she said
if
you are overweight
people no longer think
of you
as a doctor
a lawyer
or
a teacher
but
as that fat person

In some instances
the mental pain...is...severe
of fat people
so
that the effect...surpasses
it has
on their lives
far
the medical complications
that could arise
as a result
of being fat

If
fat men...were treated
and
women
as equals
their self-esteem would rise
and
they would ... lose
probably
weight

Supertankers (Idea Units: 104)

A problem...is the prevention
of vital concern
of oil spills
from supertankers

A typical supertanker carries
a half-million tons
of oil
and
is the size
of five football fields

A wrecked supertanker spills
oil
in the ocean
this oil kills
animals
birds
and
microscopic plant life

For example,
when
a tanker crashed
off the coast
of England
more than 200,000
dead seabirds
washed
ashore

Oil spills...kill
also
microscopic plant life

which provides
food
for sea life
and
produces
70 percent
of the world's oxygen supply

Most wrecks result
from the lack
of power
and
steering equipment
to handle
emergency situations,
such as storms

Supertankers have
only
one boiler
to provide
power
and
one propeller
to drive
the ship

The solution...is not to...halt
to the problem
immediately
the use
of tankers
on the ocean
since
about 80 percent... is carried
of the world's oil supply
by supertankers

Instead,
the solution lies
in the training
of officers
of supertankers,
better building
of tankers,
and

installing
ground control stations
to guide
tankers
near shore

First,
Officers... must get
of supertankers
top training
in how to run
and
maneuver
their ships

Second,
tankers should be built
with several propellers
for extra control
and
backup boilers
for emergency power

Third,
ground control stations should be installed
at places and/or where
supertankers come close
to shore

These stations would act
like airplane control towers,
guiding
tankers
along busy shipping lanes
and
through dangerous channels

Closing Down Nuclear Power Plants (Idea Units: 98)

There are two different views
on the best approach
to shutting down
nuclear power plants
once
their usefulness has been served

The first approach is immediate dismantlement

Shortly
after a plant shutdown,
workers would take out
highly
radioactive fuel parts,
clean
the internal machinery
and
then
take away
all remains
of the plant
to special nuclear dumps

The second approach...is mothballing
to the problem
of dismantlement

This contrasting approach...calls
also
for the removal
of fuel parts
and
decontamination,
but
then
the plant shell would ... wait
simply
behind a fence
for thirty
to a hundred years
while
its radiation decays,
after which
final dismantlement would ...take place
presumably

There are advantages
and
disadvantages
involved
with each
of the two approaches

to the problem
of nuclear dismantlement

According to many experts
immediate dismantlement is the most effective
and
least expensive
of the approaches

The high cost...are concerns
of maintenance
and
security
as well as the possibility
of radioactive leaks
that weigh
against mothballing

Supporters...cite
of the mothball approach
to dismantlement
immediate dismantlement
as the most dangerous option
to undertake

They suggest
(that) immediate dismantlement could release
the deadliest amounts
of radioactivity
onto workers
and
the public

Extreme precautions would have to be taken
and
workers would ... be exposed
still
to ... four times
at least
as much radiation
as they would be
if
dismantlement were delayed
thirty years

Another problem
with immediate dismantlement is
(that)... there is an absence
at this time
of permanent disposal sites

Plans have been made
to create
adequate disposal sites
but
it will be years
before
they are completed

Nuclear Energy versus Solar Energy (Idea Units: 91)

Two...are nuclear power
of the most promising sources
of energy
for the future
and
solar power

Both sources...have
of energy
numerous advantages
and
disadvantages
which must be considered
in the development
of energy programs

For several decades
many governments have attached
great hopes
to nuclear energy
as a less expensive alternative
to oil
and
other fossil fuels

However,
Opposition...has increased
to nuclear energy
in recent years

One...is the damage
of the main concerns
of the critics
of nuclear energy
that the release...could inflict
of radioactive materials
upon communities
surrounding nuclear power stations

Harmful materials could cause
serious health problems
for individuals
and
could have
disastrous effects
on the environment

Another issue...involves
concerning nuclear energy
using
nuclear plants
for the manufacture
of nuclear weapons

This is...a point
especially
of concern
about countries
with unstable governments,
where
nuclear materials could ... be used
easily
for nonpeaceful ends
by terrorist groups

Solar power is the other energy source
over which
there are differing opinions

One...is
of the main advantages
of solar energy
(that) the primary required resource...is...available
the sun
abundantly

over most parts
of the earth

Also,
if
a country's main source...were to come
of energy
from solar power
it would not have to depend
upon other countries
(in order) to maintain
its energy supply

The main negative feature...is
of solar power
(that) the technology is ... being developed
still
in this field
and
is not...reliable
yet
sufficiently
or
cheap enough
to compete
with other sources
of energy

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BIOGRAPHICAL SKETCH

Heenam Park began her university education at the Semyung University in Korea as a student of English Language and Literature. She completed her BA in Spring 1995, and was admitted to the master's program at the Sungkyunkwan University in Korea. She completed her MA in English Language and Literature with a concentration in linguistics in Spring 1997. After her master's degree, she taught English classes at universities in Korea for 2 years. She was admitted to the doctoral program in linguistics at the University of Florida in Fall 1999. During her term as a doctoral candidate, she served as a teaching assistant for Introduction to Linguistics. Her primary research interests are in the areas of second-language reading, foreign-language anxiety, second language-acquisition, and Teaching English to Speakers of Other Languages (TESOL). She was awarded a PhD in linguistics in August 2005.