The Effect of Text Structure on ESL Students' Recall of Information

by

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ABSTRACT

Previous studies suggested that organizational differences in English expository texts influence recall performance of native English speaking readers. The same effect has been shown for ESL readers from different linguistic backgrounds.

This study re-examines the relationship between recall and text structures for five types of texts: collection of description, causation, problem/solution, comparison, and an additional 'oriental' text structure, ki-shoo-ten-ketsu.

The participants were 20 Japanese, 16 Chinese, and 13 Korean ESL students with intermediate or above English proficiency attending an intensive English language program at a university. They were randomly assigned to read a passage in one of 5 text types with equivalent content. Their recall was analyzed for 1) the quantity of information recalled immediately after reading a passage and 48 hours later, and 2) the organization of their written recall protocols.

Results showed that, unlike previous studies, rhetorical differences in text did not have significant effect on recall, but that first language was a factor in recall performance. However, the fact that the Korean group recalled significantly more than the other groups may be explained by the higher percentage of the more tightly
organized passages being read by this group. It was also found that when the organization of the recall protocols written by the participants corresponded to the structure of the text that they read, the amount of recall was significantly greater.
# Table of Contents

Title Page iv  
Abstract ii  
Table of Contents iv  
List of Tables vii  
List of Figures viii  
Acknowledgements ix  
Dedication x  

**Chapter 1  Introduction**  
1.1 Background of The Study 1  
1.2 Purpose of The Study 6  
1.3 Hypothesis 7  
1.4 Definition of Terms 8  
1.5 Limitations of The Study 11  
1.6 Assumptions 12  
1.7 Overview 12  

**Chapter 2  Literature Review**  
2.1 Introduction 14  
2.2 Reader-Text Interaction 15  
   2.2.1 Prior Knowledge and Schema Theory 15  
   2.2.2 Formal Schemata and Text Structure 16  
2.3 Contrastive Rhetoric as a Factor in Reading Comprehension 19  
   2.3.1 English Expository Prose (The Top-Level Structure) 19  
   2.3.2 Oriental Rhetorical Organization 22  
2.4 Text Structure and Comprehension 24  
   2.4.1 The Effect of Formal Schema on Reading Recall Among Native Speakers of English 24  
   2.4.2 The Effect of Formal Schema on Reading Recall Among Learners of English as a Second Language 27  
2.5 Second Language Proficiency 30
### Chapter 3 Method

#### 3.1 General Research Design

#### 3.2 Participants

#### 3.3 Instrumentation

- **3.3.1 Free Written Recall**
- **3.3.2 Multiple-Choice Question**

#### 3.4 Data Collection

- **3.4.1 Procedure and Testing Conditions**
- **3.4.2 First Session / Immediate Recall and Multiple-Choice Question**
- **3.4.3 Second Session / Delayed Recall and Multiple-Choice Question**

#### 3.5 Free Written Recall

- **3.5.1 Meyer's Scoring System**
- **3.5.2 Scoring System of This Study**

#### 3.6 Multiple Choice Questions

#### 3.7 Protocol Organization

#### 3.8 Raters

#### 3.9 Summary

### Chapter 4 Analysis of The Test Results

#### 4.1 Written Recall and Multiple Choice Questions

#### 4.2 The Effect of Recall Condition

#### 4.3 The Effect of Language, Proficiency Level, Passage type, and Their Double and Triple Interaction on Recall

#### 4.4 The Effect of Passage Type

#### 4.5 The Effect of Language

#### 4.6 The Effect of Language X Passage type

#### 4.7 The Effect of Protocol Organization on Recall

#### 4.8 Summary

### Chapter 5 Instructional Implication and Further Research Suggestions

#### 5.1 Introduction

#### 5.2 The Findings of This Study
List of Tables

1. Multiple Comparisons Between Means on Discourse Types Within Language Group 29
2. The Number of Participants in Independent Variables 38
3. Means and Standard Deviations of Recall and Multiple Choice Questions 61
4. Recall Condition X Language Group 63
5. Recall Condition X Language Group X English Proficiency X Passage Type: General Linear Models Statement and F-Values 65
6. Percentages of 'Advanced Level' in Each Language Group and Percentages of 'tightly' and 'loosely' organized text as well as ki-shoo-ten-ketsu read 68
7. Immediate and Delayed Recall by Language Group and Passage Type 69
8. Combined Means of Immediate and Delayed Recall by Passage Type 71
9. Relationship Between the Passage Type of the Original text and That used to Organize Protocols Written 72
10. Relationship Between the Proficiency Level and the Utilization of Original Passage Types used to Organize Protocols 74
List of Figures

1. Top-Level Structure of a Text 18
2. Collection 19
3. Description 20
4. Collection of Description 20
5. Causation 21
6. Problem/Solution 21
7. Comparison 21
8. Type and Number of Specified Organizational Components Required for the Different Discourse Types 25
9. Four Versions of the Text: "The Loss of Body Water" 40
11. Analysis of Identical Information into 21 Common Idea Units 48
12. Frequency Distribution: Immediate and Delayed Multiple Choice Questions 62
13. Effects of Five Passage Types on immediate and Delayed Recall 67
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Dedication

To my father, Toshio Hayashi, for his positive spirit, great sense of humour and wise advice.

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Chapter 1 Introduction

1.1 Background of This Study

There are three key areas of research that form the background of this study: 1) reader-text interaction, 2) Contrastive Rhetoric, and 3) text structure and comprehension.

In the field of reading in a second language, a cognitively based view such as schema theory (Alderson & Urquhart, 1988; Barnitz, 1986; Bensoussan, 1998; Carrell, 1984b; Floyd & Carrell, 1987) has been the prominent model most often referred to for the purpose of explaining such reader-text interaction. This model emphasizes the role of prior knowledge that readers bring to a text.

In the field of writing, a concept that added a new dimension to the understanding of comprehension mechanism first appeared in Kaplan’s work in 1966 as Contrastive Rhetoric. Contrastive Rhetoric, a study of rhetorical structure across cultures, caught many researchers’ and practitioners’ attention as an insightful theory for second language education (Conner, 1996) because it provided a way of accounting for why English-as-a-Second-Language (ESL) students with relatively high grammatical proficiency (intermediate and above) produce unconventional text styles in English compositions. Since the emergence of a theory of Contrastive Rhetoric, there have been numerous studies performed in order to gather evidence to prove that each language has a culturally preferred way of organizing text.

One of the most widely researched areas of Contrastive Rhetoric has been English-Japanese rhetoric. The most familiar studies on English-Japanese rhetoric were reported by Hinds (1980, 1982, 1987, 1990) and Kobayashi (1984). More recent work has been conducted by Kubota (1998a, 1998b) and Spyridakis and Fukuoka (2002).

The earlier and more recent studies have reported that academic texts in English are often structured deductively while Japanese text is structured inductively. In addition, Connor (1996) reports research by Cai (1993), Eggington (1987) and Hinds (1980) that Japanese, Chinese and Korean commonly employ an inductively organized four-unit writing pattern, and that ki-shoo-ten-ketsu in Japanese, qi-dheng-jun-he in Chinese, and ki-sung-chon-kyul in Korean correspond to one another, referring to the same four-unit writing pattern.

The difference between inductive and deductive prose is that deductive prose first provides general information or a statement then imparts specific information whereas the reversal happens in inductive prose. In other words, inductive organization moves from specific to general.

While deduction and induction characterize general organizational flow of a text, there is another system which categorizes a text. Meyer (1975) identified this
categorization system as top-level structure for expository prose. According to Meyer, top-level structure organizes an expository prose in a style of comparison, causation, problem/solution, collection or description as an overall framework (the characteristics of each structure are described in Chapter 2). Although these rhetorical patterns have been identified and are commonly referred to in composition texts, Meyer's unique contribution to textual analysis was to label these rhetorical patterns as top-level structure which serves as a feature of cognition and to explore the relationship of top-level structure on text comprehension.

Between late 1970s and the beginning of 1980s, Meyer had extensively investigated how top-level structure of a text affects recall performance among developmentally different groups of native English speakers (Meyer, 1975, 1977, 1979; Meyer, Brandt & Bluth, 1980; Meyer, Haring, Brandt, Walker, 1980; Meyer & Freedle, 1984). Each of these studies has shown that certain types of expository text resulted in recall better than the other types. Moreover, Meyer (1977, 1979) and Meyer, Brandt and Bluth (1980) have suggested that identifying and utilizing the text structure of a read passage to organize incoming information is highly efficient with the aim of discovering the main idea of a passage and retaining content information as much as possible.
Carrell (1984a, 1984b, 1985, 1987, 1992) is the most prominent researcher who rigorously attempted to examine such relationship between top-level text structure and recall performance in second language (L2) comprehension. Carrell’s (1984a) work is a partial replication of Meyer and Freedle (1984), and these two studies form the foundation of the current study.

The task for the ESL participants used in Carrell (1984a) was to read a passage and write down everything that they could recall in two sessions--first, right after the reading of the passage and second, 48 hours later. Carrell’s (1984a) replication of Meyer and Freedle (1984) included a few adaptations which need to be brought to attention. These adaptations were made in order to compensate for the English proficiency of ESL students so that they could perform the task that was originally created for Native English speakers. Briefly, the modifications made by Carrell concerned sentence structure (passive vs. active voice), medium of delivering (listening vs. reading), time interval between first and second recall sessions (1 week vs. 48 hours), and the number of maximum scores for the written recall task (58 vs. 21). The details of these modifications are discussed in Chapter 3.

With these modifications, Carrell’s (1984a) partial replication of the study of Meyer and Freedle (1984) confirmed that certain text structures indeed resulted in better recall than others amongst second language learners.
The most important finding of Carrell (1984a) was the differing effects of the text structures on different linguistic groups. Recall of information was better for a particular text structure, but which text structure resulted in the best recall depended on the first language (L1). She ascribed this phenomenon to a possible effect of preferred text structure (top-level structure) of each linguistic group.

Meyer and Freedle (1984) had found differences in L1 recall depending on the top-level structure of the text but could only account for the observed differences in terms of "individual differences". Carrell (1984a) confirmed the influence of top-level structure in L2 readers and proposed that the source of the difference was in the language background of the reader. The evidence for top-level structure influencing recall is well attested, accounting for these differences remains an area for research.

Three elements that require further consideration arise from the investigation performed by Carrell (1984a). First, as Carrell identified, what is it about the L1 that influences the effect of top-level structure? The Korean and Chinese participants in Carrell's study were categorized together as an oriental group and were not investigated separately. Although these languages can be loosely associated as "oriental" they are at the same time vastly different in linguistic structure, history and even orthography. A closer look at the particular influence of
each language background could contribute to the development of a better model of the relationship of top-level structure to comprehension.

Second, while Hinds (1980, 1982, 1990) and others have identified inductively organized text as characteristic of 'oriental' languages, neither Meyer and Freedle (1984) nor Carrell (1984a) considered the inductive and deductive nature of a text as a variable. The passages used in their studies are all deductively organized expository prose of English.

Third, since the appearance of Contrastive Rhetoric, the common classical rhetoric of Orient called ki-shoo-ten-ketsu in Japanese culture has been examined thoroughly by researchers such as Hinds (1980, 1982, 1987, 1990), Kubota (1997, 1998b) Kobayashi (1984), and Rinnert and Kobayashi (2001). These investigations examined the influence of the knowledge of ki-shoo-ten-ketsu on English composition. The results of these empirical studies confirm as well as question the legitimacy of the notion of Contrastive Rhetoric. However, to my knowledge, the effect of ki-shoo-ten-ketsu, or a culturally preferred rhetorical organization in terms of reading comprehension has not been studied.

1.2 The Purpose of The Study

The current study attempts to re-examine the effect of top-level structure of deductively organized expository text (English rhetoric) previously investigated by Meyer and
Freedle (1984) and Carrell (1984a) by adding an inductively organized text, *ki-shoo-ten-ketsu*, which is claimed to be used commonly for oriental expository prose. In addition this study will formally distinguish each language and not collapse the heterogeneous languages, Japanese, Chinese and Korean into a single category.

This study will serve practitioners and English-as-a-Second Language students by providing better understanding of their reading performance, and it is intended to contribute insights towards Contrastive Rhetoric Theory, thus towards English as a Second Language education.

1.3 **Hypotheses**

Based on previous research of Carrell (1984a), Meyer and Freedle (1984) as well as on study of Contrastive Rhetoric, the following five hypotheses are proposed.

1. **There is a relationship between recall conditions** (immediate and delayed recall) and recall performance of English as a Second Language (ESL) students with intermediate or above English proficiency attending a university English language program.

2. **There is a significant difference in recall among the five types of rhetorical organization of the expository prose** (collection of descriptions, causation, problem/solution, comparison and *ki-shoo-ten-ketsu*) in the reading recalls of ESL readers.
3. There is a relationship between the recall performance and the utilization of the same rhetorical structure as the read text upon organizing written recall protocols.

4. There is a difference between Japanese, Chinese and Korean language groups' recall which is related to difference in the rhetorical organization of texts.

5. There is a positive relationship between the use of ki-shoo-ten-ketsu passage and recall of information for 'Oriental' ESL students compared to the use of the other four types of rhetorical organization namely collection of description, causation, problem/solution and comparison.

1.4 Definition of Terms

Contrastive rhetoric is a study of rhetorical/text structure across cultures, and it was pioneered by Robert Kaplan (1966).

Text structure "refers to how the ideas in a text are interrelated to convey a message to a reader" (Meyer & Rice, 1984, p.319). It should be noted that the term rhetorical structure and text structure are used interchangeably in this report.

Formal Schemata refers to reader's knowledge relative to the text structure or rhetorical structure (Carrell 1987).

Language proficiency refers to the level of ability of a second language learner in the second language (Carrell,
In this study proficiency is determined by the criteria of the program in which the participants are enrolled.

Memorability is the characteristic of a text in which the information is more or less easily remembered. For example, highly organized information is more memorable than poorly organized information; thus, highly organized text possesses more memorability (Meyer and Freedle 1984). Memorability is determined in two ways in this study, multiple choice comprehension and free written recall.

Micropropositions are the lowest level of relationship between 'idea units' of a text. This level of text structure is concerned with coherence between individual propositions or sentences. Cohesive ties such as reference, substitution, ellipsis, conjunction, and lexical cohesion are elements of micropropositions identified by Meyer & Rice (1984).

Macropropositions are the second level of structural characteristic of a text. This level is concerned with relationship amongst logical organization and argumentation of ideas presented in paragraphs. A number of structural classifications of a text such as collection of description, causation, problem/solution and comparison are macropropositions identified at this level (Meyer & Rice, 1984).

Top-level structure is the highest of the three levels of structure of a text. This level is concerned with
overall organizing structure of a text as a whole. At this level, text structure (e.g., Causation) as well as genres (e.g., stories and scientific articles) of a text can be identified (Meyer & Rice, 1984).

Collection of description refers to a English expository text structure that groups information by association in which one element of the association is subordinate to another (the topic), and a collection of attributes, specifics, or settings are given about a topic (Meyer & Freedle, 1984).

Causation refers to an English expository text structure that chronologically groups ideas that are causally related (Meyer & Freedle, 1984).

Problem/solution refers to an English expository text structure that chronologically groups causally related ideas, and one or more propositional elements of the solution can neutralize a causal antecedent of the problem (Meyer & Freedle, 1984).

Comparison refers to an English expository text structure that organizes information by similarities and differences (Meyer & Freedle, 1984).

Ki-shoo-ten-ketsu is a Japanese term for a four-part text structure commonly used in Japan (Hinds, 1980). Qi-dheng-jun-he in Chinese and ki-sung-chon-kyul in Korean corresponds to Ki-shoo-ten-ketsu (Connor, 1996).

Idea unit is the minimal unit of analysis in Meyer's (1975) prose analysis system. In Meyer's system, the idea
unit includes actual content units in the text and relationship units. In the content units, correct content word(s) from a text (e.g., athletic coaches, physical performance) need to be recalled to be scored.

**Relationship unit** is an aspect of an idea unit that requires the correct relationship amongst information in a text to be present in order to be scored. For example, the information "3% of body water" must be related with its correct information "impairs physical performance".

1.5 Limitations of the Study

The data used for this study were collected from ESL students who were enrolled in an English Language Centre (ELC) at the University of Victoria. This study involved a relatively small number of participants who were not randomly selected. Therefore, the data may not be generalizable to all ESL learners.

Secondly, the study will be limited to ESL learners whose language proficiency is at or above intermediate level. The finding may not be applicable to students with lower language proficiency. Also, the participants' prior knowledge about what they read on the text would affect their recall performance.

Thirdly, the analysis is limited to a small domain of issues, specifically the effect of rhetorical structure on recall. Other important elements on recall performance such
as individual memory capacity and prior knowledge are deliberately excluded from the analysis.

In brief, all variables, conditions, or populations not so specified in this study will be considered beyond the scope of this investigation.

1.6 Assumptions
1. The participants were expected to be honest with their responses.
2. The participants were expected to accurately carry out the instructions provided by the researcher.

1.7 Overview

In Chapter 1, general overview of previous research in reading and writing is outlined, and two prominent studies which provide background knowledge on a proposed research are discussed. The focus of the literature review in Chapter 2 is to provide the detail of studies of Meyer and Freedle (1984) and Carrell (1984a). It also presents the explanation of English text structures and Japanese text structure in terms of their mechanisms. In Chapter 3, the general research design is described. The method of analysis is described in details based on Carrell (1984a). In Chapter 4, the results are presented and analyzed to investigate the effect of five text structures on recall performance of ESL students with intermediate and above proficiency. In Chapter 5, the results of this study are
discussed through a comparison between the findings of Carrell's (1984a) study and the current study. Theories in Contrastive Rhetoric are reviewed, and instructional implications for ESL education are presented. Lastly, directions for future research are suggested.
Chapter 2 Literature Review

2.1 Introduction

In chapter 2, the studies and theoretical works that have critical bearing on the proposed research project are discussed.

Section 2.2 deals with reader-text interaction based on schema theory which is discussed in order to provide basic understanding of how readers' prior knowledge is related to recall performance. Also, two types of schemata defined by Carrell (1987), namely content schema and formal schema, are distinguished, and further the explanation for the mechanism of formal schemata in reading comprehension is provided in light of text structure. In this section, text structure is described at three levels of structural characteristic of a text: micropropositions, macropropositions and top-level structure (Meyer & Rice, 1984).

In section 2.3, top-level structure is further explained in detail in relation to the specific English expository prose employed in the current study: collection of description, causation, problem/solution, and comparison. In this section, an 'oriental' rhetoric or four-unit pattern, Ki-shoo-ten-ketsu, is discussed in terms of its mechanism and the differences from English expository prose based on a theory of Contrastive Rhetoric.

Section 2.4 reviews empirical studies that were conducted to examine the effect of formal schema on reading
recall among native speakers of English as well as among
learners of English as a Second Language.

Section 2.5 examines studies of the effects of second
language proficiency on comprehension. The effect of second
language proficiency on recall will not be closely
investigated in this study since the range of proficiency
has been deliberately limited in the selection of the
participants; however, English proficiency is an element for
the understanding of L2 reading comprehension. Thus, the
basic knowledge of this element affecting L2 reading
comprehension will be provided.

2.2 Reader-Text Interaction

2.2.1 Prior knowledge and schema theory

Anderson and Person (1984) define comprehension as the
process of relating new or incoming information to
information already stored in one’s memory. In other words,
a cognitively based view of reading comprehension emphasized
the interaction between a reader and a text. This
interaction is central to a theoretical model called schema

According to Lally (1998) and other proponents of
schema theory such as Carrell and Eisterhold (1988), a text
does not have any meaning itself, but rather a text gives
direction to readers with regard to how to retrieve and
construct meaning from their own background knowledge.
According to Carrell (1987), schema theory possesses two types of schemata: content schema and formal schema. The content schema refers to the reader's knowledge in relation to content of texts. Although research literatures of schema theory acknowledge the importance of content schema, content schema is intuitive, hard to measure and highly variable; thus, the more tangible formal schema is more often the focus. For this reason, the current study emphasizes the effect of formal schema.

The definition of formal schemata is given by Carrell (1984b) as "background knowledge of the rhetorical structures of different types of texts" (p. 89). This notion becomes critical in this study since it examines how the rhetorical organizations of text affect recall performance.

2.2.2 Formal schemata and text structure

Meyer and Rice (1984) offer detailed explanation of the mechanism of formal schemata by referring to text structure. It should be remembered that the terms "rhetorical structures" and "text structure" are used interchangeably. According to Meyer and Rice, text structure refers to "how the ideas in a text are interrelated to convey a message to a reader" (p.319). In particular, text structure concerns the relationship between central ideas and subordinate ideas according to a hierarchy of relationships between ideas in the message. In order to analyze structure of a text, Meyer
and Rice (1984) identify three levels of structural characteristics: micropropositions, macropropositions and top-level structure.

The lowest level, micropropositions, refers to the way each individual concept or sentence is related one to another, that is, syntactic relations between concepts. One of the major organizing features of coherent microstructures is cohesive ties. Meyer and Rice (1984) refer to Halliday and Hasan (1976) and explain that these include reference, substitution, ellipsis, conjunction and lexical cohesion.

The second level, macropropositions, is concerned with the way gist or ideas are presented in paragraphs, that is, rhetorical relations. In other words, whereas micropropositions deal with coherence between sentences, macropropositions deal with logical organization amongst paragraphs. At this paragraph level, five basic types of rhetorical relations have been identified: collection, description, causation, problem/solution, comparison (Meyer and Rice, 1984). It should be noted that these patterns are not a unique discovery of Meyer and Rice and are commonly referred to in composition text often without citation.

The highest level concerns with overall organization of a text, and this overall organization is called the top-level structure of a text. One of the 5 rhetorical organizations could be identified as the top-level structure of text as well. Usually a single text employs more than one rhetorical organization; for example a text with a top-
level structure of problem/solution could include causation and collection of description. All these macrostructures are organized into an overall top level structure with the functional purpose of problem/solution (Figure 1). Top-level structure is the overall or prominent structure of the text.

Although three levels of structural characteristics -- top-level structure, macrostructures, microstructures -- always exist simultaneously in a text, the present study is concerned with the rhetorical relation serving as a top-level structure, organizing a text as a whole.

![Figure 1. Top-Level structure of a text (causation and collection of description are embedded in problem/solution)](image_url)
2.3 Contrastive Rhetoric as a Factor in Reading Comprehension

2.3.1 English expository prose (Top-level text structure)

Meyer (1975, 1979, 1981) recognizes five basic groups of rhetorical relations in macropropositions (paragraph level) and found five basic expository text structures that impacted on reading comprehension among native speakers of English. Those structures are collection, description, causation, problem/solution, and comparison. Meyer and Freedle (1984) investigated the effect of those text structures on reading recall among teachers who were all native speakers of English enrolled in a class of educational research methodology.

According to Meyer and Freedle (1984), the collection type is least organized; it is simply a list of associated ideas. In order to increase the degree of organization, sequencing of the associated ideas is required (e.g., a historical chronology). Sentence examples of collection, description, and collection of description are created by the researcher following the definition. Figure 2 shows a collection type.

```
My friends and I had lunch at pizza parlor. We played volleyball in a park and went for a movie.
```

*Figure 2. Collection*

Description is a specific type of grouping by association. It is characterized by the association between
a topic and subordinate information about the topic. These subordinate ideas provide more information by presenting an attribute, specific or setting (e.g., Topic = Birthday party; Specific = lunch).

I had a birthday party yesterday. All my friends and I went to a pizza parlor for lunch to celebrate my birthday.  

*Figure 3. Description*

When the number of attributes, specifics, or settings is increased to give more information about a topic, collection and description are combined to form another type of rhetorical organization, that is, collection of descriptions (e.g. Topic=Birthday party; specifics=lunch, volleyball, movie). A sentence example of this type is shown in Figure 4.

I had a birthday party yesterday. All my friends and I went to a pizza parlor for lunch to celebrate my birthday, played volleyball in a park, and went to a cinema to see a movie.  

*Figure 4. Collection of description*

Carrell (1984) offers sentence examples of causation, problem/solution and comparison (see Figure 5, 6, and 7). The causation chronologically groups ideas that are causally related (e.g., if/then or antecedent/consequent statements). Therefore, it is more organized than collection of descriptions.
"Sally wasn’t eating well, exercising, or resting enough. As a result, she felt weak and run-down and never wanted to do anything" (Carrell, 1984a, p.444)

Figure 5. Causation

Problem/Solution is more explicitly organized and has all the components of causation with the additional element; propositions in the problem and the solution need to match in content, and an antecedent of the problem is stopped by one or more propositions of the solution.

"Pollution is a problem; polluted rivers are health hazards and eyesores. One solution is to bar the dumping of industrial wastes" (Carrell, 1984, p. 444)

Figure 6. Problem/Solution

Comparison is not on a same scale with causation and problem/solution because it is organized by similarities/differences instead of time or causality.

"Despite evidence that smoking is harmful, many people claim this is not so. Although smoking has been related to lung and heart disease, for some people smoking may relieve tension" (Carrell, 1984a, p.444)

Figure 7. Comparison
2.3.2 Oriental rhetorical organization

Ki-shoo-ten-ketsu is a common four-part text structure in Japanese writing which corresponds to qui-chen-jun-he in Chinese and ki-sung-chon-kyul in Korean. It consists of beginning (ki), development (shoo), sub theme (ten), and main theme (ketsu). Since the topic sentence is placed at the end, it is often characterized as inductive style as opposed to the conventional deductive style of English. (Hinds, 1980, 1982, 1987, 1990).

Hinds (1982) referred to Takemata (1976) who defined the relevant meaning of each four elements in ki-shoo-ten-ketsu.

ki First, begin one's argument
shoo Next, develop that.
ten At the point where this development is finished, turn the idea to a sub theme where there is a connection, but not a directly connected association (to the major theme)
ketsu Last, bring all of this together and read a conclusion.


An example of a ki-shoo-ten-ketsu composition written in English is shown in Appendix A.

What is really unique about this ki-shoo-ten-ketsu structure is the third point, ten. According to Hinds (1982), this ten part does not exist in English language compositions. He further explains that ten is "the
intrusion of an unexpected element into an otherwise 'normal' progression of ideas" (p. 7).

The flow of English writing is usually deductive (general to specific), that is, a clear statement of purpose is located in the initial part of the writing, and the conclusion is derived from information presented in the previous paragraphs, emphasizing the main points in summary (Hinds, 1982). In Japanese, on the other hand, the flow is inductive (specific to general), that is, a statement of purpose often appears in its conclusion (ketsu). Moreover, Takemata (1976) states that, unlike English, a conclusion in Japanese writing does not need to be decisive as long as it suggests a doubt or raise a question.

Kobayashi (1984) investigated the use of rhetorical structure in writing among native speakers of English and Japanese. The 226 participants were divided into four groups: U.S. college students (AEA), Japanese advanced ESL students in the U.S. (JEA), English-major Japanese students in Japan (JEJ) and non-English major students in Japan (JJJ). The results showed that American college students tended to organize their writing deductively whereas Japanese students in Japan (both JEJ and JJJ) tended to organize texts inductively. Japanese students studying in the US fell between the two culturally different groups. This finding lends support to the notion of contrastive rhetoric that writing is a cultural phenomenon and suggests
the existence of a cultural preference for a certain rhetorical flow.

2.4 Text Structure and Comprehension

2.4.1 The Effect of Formal Schema on Reading Recall Among Native Speakers of English

In previous studies, Meyer (1975, 1977; Meyer, Brandt, and Bluth, 1980; Meyer and Freedle, 1984) and Richgels, Mcgee, Lomaz and Sheard (1987) have investigated native readers of English interacting with different text structure of expository writing, specifically collection, description, comparison, causation, problem/solution. All of these studies have shown that certain types of expository text promoted their participants' recall performance better than the other types.

Meyer and Freedle (1984) called the effect of text organization on recall, 'memorability' of a text. Upon examining the memorability of four rhetorical structures in texts, Meyer and Freedle (1984) hypothesized that the memorability would depend on superiority of organization of rhetorical structure. That is, the more highly organized types (comparison, causation, and problem/solution) would be more influential on recall than a less overtly organized text such as, collection of description (see Figure 8). It should be noted that it is the top-level structure that determines the type of overall text structure.
The participants in the study of Meyer and Freedle (1984) were 44 native English-speaking teachers attending a graduate school who presumably possessed the appropriate formal schema. The four types of text were written with identical information but in different top-level structure. The students were randomly assigned to listen to one of the versions and asked to write down everything they could remember in sentence form. A week later, the free recall test was administered again. The results showed that texts organized by causation and comparison elicited better recall than the collection of description type. Also, those who listened to comparison passage recalled significantly more
than those who listened to the collection of description passage even one week later.

Further investigations by Meyer and Freedle (1984) focused on the way each recall protocol was organized by the participants. Each protocol was classified according to the types of text structure used by the participants. The classifications of recall type were: a) the same structure in the recall protocol as the original passage structure, b) a structure different from that of the original passage, and c) no apparent structure. The result showed that those who listened to the comparison, causation and collection of description passages tended to use the same rhetorical organization for both the immediate and delayed written recall. On the other hand, those who listened to the problem/solution passage often used a completely different rhetorical organization from the original passage on written free recall. These tendencies were statistically significant. Thus, Meyer and Freedle (1984) concluded that the differences in discourse type affected both learning and memory.

Meyer, Brandt, and Bluth (1980) studied native English speaking students in grade 9. Whereas the study of Meyer and Freedle (1984) used teachers who supposedly already possess appropriate formal schema, the participants in Meyer et al. (1980) varied in their reading ability and awareness of formal schema. Therefore, it was expected that this study would be more effective for examining the effects of
recognition and utilization of formal schema on recall. The results showed that although many of the students did not possess or did not activate the appropriate schema, those who did recognize and utilize the schema recalled significantly more information in a text. Thus, based on Meyer's research (Meyer & Freedle, 1984; Meyer, Brandt & Bluth, 1980) it was found that (1) activation of appropriate formal schema seems to affect reading recall, and (2) different rhetorical organizations seem to affect reading recall differently.

2.4.2 The Effect of Formal Schema on Reading Recall Among Learners of English as a Second Language

The extensive studies in the same area among non-native speakers of English were performed by Carrell (1984a, 1984b, 1985, 1987, 1992), and Floyd and Carrell (1987). Carrell (1984a) partially replicated the study of Meyer and Freedle (1984) to investigate the effects of rhetorical organization of expository texts on reading recall among English-as-a-Second-Language (ESL) readers of varying linguistic backgrounds. The central questions of Carrell (1984a) were: (1) whether ESL readers possess the appropriate formal schema to identify and utilize different rhetorical structures; and (2) whether the various rhetorical structures impact differently on ESL readers with a different background.

The participants were 80 ESL students from the highest three levels of an intensive English program. Their native
language backgrounds included 32 Spanish, 16 Arabic, 12 Oriental (Korean and Chinese), and 20 other (predominantly Malaysian). The passages used by Meyer and Freedle (1984) were adapted to facilitate ESL learners in this study. However, unlike Meyer and Freedle's study, the participants of this study read the text at their own individual reading rates instead of listening. The measures were immediate and delayed (48 hours) written recall. After the delayed recall, fill-in-the-blank type questions about each version of the text were administered.

The statistically significant factors that affected recall were condition (immediate vs. delayed), rhetorical organization (collection of description, causation, problem/solution, comparison), and native language group. As expected, the immediate recall was significantly better than delayed recall. Upon examining the overall effect of rhetorical organization, the three types (causation, problem/solution and comparison) elicited significantly better recall than collection of description did in both immediate and delayed recall. This finding is parallel to Meyer and Freedle (1984). However, when Carrell (1984a) examined the performance on recall of each rhetorical organization by language group, interesting results were obtained. The immediate recall was significantly better than the delayed recall in all language groups except the oriental group where delayed recall was as good as immediate recall. All groups except the Arabic group had
significantly better recall on comparison, causation, and problem/solution passages than collection of description passage—the Arabic group performed better on collection of description than on causation. Furthermore, the more detailed analysis showed the differing effects of the various rhetorical organizations on the quantity of free recall among language groups. For the Spanish group, a significant distinction was found between 1) comparison, problem/solution and causation, and 2) collection of description. The Arabic group showed significant performance difference among 1) comparison, 2) problem/solution and collection of description, and 3) causation. For the Oriental group, clear distinction was found between 1) problem/solution and causation, and 2) comparison and collection of description (see Table 1).

Table 1
Multiple Comparisons Between Means On Discourse Types Within Language Group

<table>
<thead>
<tr>
<th>Discourse Type</th>
<th>Comparison</th>
<th>Problem/ Solution</th>
<th>Causation</th>
<th>Collection of Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>4.19</td>
<td>4.56</td>
<td>4.44</td>
<td>2.25</td>
</tr>
<tr>
<td>Arabic</td>
<td>3.00</td>
<td>1.63</td>
<td>0.13</td>
<td>1.25</td>
</tr>
<tr>
<td>Oriental</td>
<td>3.67</td>
<td>7.17</td>
<td>7.33</td>
<td>2.50</td>
</tr>
<tr>
<td>Other</td>
<td>5.60</td>
<td>5.20</td>
<td>7.90</td>
<td>3.00</td>
</tr>
</tbody>
</table>


Carrell (1984a) also reported similar finding for the effect of awareness on recall, with Meyer and Freedle
(1984). That is, ESL readers who recognized the original text's rhetorical structure and utilized the same structure to organize their memory recalled more information. Although this study confirmed both the overall effect of rhetorical organization and the effect of awareness of rhetorical organization on recall in the similar way with Meyer and Freedle (1984) and Meyer et al. (1980), the performance differences that presumably stemmed from various linguistic backgrounds should not be ignored. As Carrell cautions, the only case in which Arabic subjects' performed better in collection of description passage than in causation passage "may be due to the preferred rhetorical pattern of Arabic" (1984a, p.464).

2.5 Second Language Proficiency

Evidence has been empirically gathered to show that the second language proficiency is closely related to reading comprehension (Bernhardt & Kamil, 1995; Carrell, 1991; Fecteau, 1999). In an attempt to examine whether second language (L2) proficiency and first language (L1) reading ability would be significant predictors of a reading comprehension, Carrell (1991) compared native English speakers learning Spanish-as-a-Second-Language and native Spanish speakers learning English-as-a-Second-Language. The results showed that L1 reading ability and L2 proficiency together predicted L2 reading comprehension. Bernhardt and
Kamil's (1995) and Fecteau's study (1999) also discovered the same effect as did Carrell (1991).

An interesting result also common among these studies (Bernhardt & Kamil, 1995; Carrell, 1991; Fecteau, 1999) is that L1 reading ability is the stronger predictor of L2 reading comprehension among learners with higher L2 proficiency, and that L2 proficiency is the stronger predictor of L2 reading comprehension among learners with lower L2 proficiency (Carrell, 1991).

Thus, these findings indicate that both second language proficiency and first language reading ability are important contributors to L2 reading comprehension. The latter, L1 reading ability, brings an issue of formal schema since "the awareness of the reading process transfers to the second language and does not need to be relearned (Rigg 1977; Gamez 1979; Goodman, Goodman & Flores 1979)" (Carrell, 1991, p. 159). In other words, skills and knowledge that one has already established in their first language reading affect their second language reading performance.

2.6 Summary

In Chapter 2, factors influencing reading recall performance are reviewed.

Prior knowledge is an factor to affect recall performance, and the effect of it is explained in the theoretical framework called schema theory. One of the focuses of the current study is the prior knowledge of
formal schema, that is, the reader's knowledge relative to the rhetorical organization of a text. Therefore in Chapter 2, types of as well as mechanism of rhetorical structures in both English and Japanese expository writing were explained. This Chapter also provided findings of previous studies of L1 and L2 which investigated the effect of formal schema on reading recall. These studies have critical bearing on the current research.

In Chapter 3, the general approach and method of analysis is explained. Also, the selection of samples for analysis and the details of research design are described.
Chapter 3 Methodology

3.1 General Research Design

The general research design employed in the current study is causal-comparative research design. It is a type of quantitative research "to investigate possible cause-and-effect relationships by observing some existing consequence and searching back through the data for plausible causal factors" (Isaac & Michael 1997, p. 46). This research design was employed for the current study in order to maintain a parallelism with the previous studies of Meyer and Freedle (1984) as well as Carrell (1984a) and to facilitate comparisons with this previous research.

Gall, Borg, and Gall (1996) explain that the first step in causal-comparative design is to pre-identify the possible causes or effects based on previous research results, theory, and observations. Then, a statement of a problem and questions are formulated. According to this procedure, the three of the five research questions for the current study are based on the results from Meyer and Freedle (1984) and Carrell (1984a). Two other hypotheses (4 and 5 on page 8) arise from the theory of Contrastive Rhetoric.

The next step in causal-comparative design is to define the population that owns the characteristic (e.g. ethnic background, age, and gender) a researcher wishes to study. The comparison sample is drawn from the population so that the comparison groups are similar in all respects except the
variable examined. In order to achieve a parallelism with the research design of Carrell (1984a), the current study employed English-as-a-Second-Language students with intermediate or above English proficiency attending a university English language program.

Generally, in a causal-comparative design the characteristics of the population are estimated in two steps: 1) by examining each comparison group sampled through descriptive statistical concepts such as mean and standard deviations, and 2) by conducting a test of statistical significance such as t test and analysis of multiple variance (MANOVA) in order to test differences between groups.

In the current study, the researchers will generalize results from the samples to a more general population using conventional practices of statistical inferencing.

Almost any type of instruments can be used for data collection in causal-comparative design. Frequently used instruments are reports, tests, questionnaires, scales and observation schedules. As common in all research designs, reliability and validity of instruments need to be carefully assessed in advance. It is very important to make sure that measures used to determine performance (indicators) focus on the right issues of the study in order to establish internal validity (Anderson & Arsenault, 1998). In the current study, validity of the instrument to measure the effect of text structure on reading recall has been asserted in
previous studies (Carrell, 1984; Meyer and Freedle, 1984). Careful attention should also be paid to the presentation of the data so that they are fair and not misleading to avoid a potential impediment to objectivity by biases (Anderson & Arsenault, 1998).

In regard with the external validity (generalizability), researchers always need to keep in mind that generalization only applies to the population the sample is drawn from when analyzing and reporting. However, since the current study is a replication of features from previously validated studies, generalizability of the result could be related to the population of previous studies thereby increasing the generalizability of the current study. That is, the results could more certainly contribute to ESL teaching theory and practices in general.

The major advantages of the causal-comparative design are that 1) it allows a researcher to examine cause-effect relationships without experimental treatments, and 2) many cause-effect relationships can be examined in a single research study. The major disadvantages are that 1) it does not indicate the magnitude of the relationships between variables, and 2) it is difficult to establish causality with certainty; variable A causes B, B causes A, or variable C causes both A and B (Gall, Borg, & Gall, 1996).
3.2 Participants

The current study involved post secondary students who were attending ESL classes offered by the English Language Centre (ELC) at the University of Victoria. The students at intermediate level or above who have been learning English in an English speaking country for minimum of 1 month and maximum of 2 years are employed as participants. All students have already taken an English language proficiency test called Secondary Level English Proficiency (SLEP) put out by Educational Testing Service (ETS) upon their arrival at ELC, and they are placed at a level. Students with 57 and above SLEP score are placed in advanced level; 49-56 score are in higher intermediate; 41-48 score are in lower intermediate.

To solicit participants, the researcher first attended an ESL instructors' meeting at ELC in order to inform the ESL instructors about the current study. With the permission of those ESL teachers, the researcher was able to visit 6 classes that were intermediate level or above to ask for volunteers. This initial visit took about 20 to 30 minutes in each class and the potential participants were informed about the purpose of the study, procedure, and the involved tasks. The consent form (Appendix B) was then presented to 67 ESL students who voluntarily agreed to participate. Thus the participants were not randomly selected.
The nationality of those participants included 21 Japanese, 19 Chinese, 17 Korean, 4 Thai, 4 Spanish, 1 Persian and 1 Arabic. Of the 67 students who participated in the research, data from lower intermediate participants as well as Thai, Spanish, Persian and Arabic participants were removed because of the inability to form targeted language groups or proficiency level due to the low incident. Further, data from 4 out of 53 participants were removed from analysis because they attended only the first session. The final remaining 49 participants consisted of Japanese \((n = 20)\), Chinese \((n = 16)\) and Korean \((n = 13)\), and they were later divided into 5 sub-groups by a stratified random sampling technique. First, each text type was numbered as follows; 1. collection of description, 2. causation, 3. problem/solution, 4. comparison, 5. ki-sho-ten-kestu. Second, a random numbers table was created with number 1 to 5 and the passages were assigned accordingly in order to assign students randomly to a text type.

All of the 49 participants (12 males and 37 females) had studied English prior to attending ESL classes offered by the ELC at the University of Victoria. The average length of English Education in their home countries was 8.5 years. The length of English Education in an English speaking country including ELC at the University of Victoria at the time of this study was 5.8 months. Seventeen of the 49 participants had studied English in high school. The remaining 32 participants continued English education at
either a university or a college after high school. Five participants had studies English for four years after high school; 2 participants, three years; 16 participants, two years; and 9 participants, one year. Table 2 shows the number of the participants in three valuables: Language, English proficiency, and passage type.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Japanese</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Korean</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>49</td>
</tr>
<tr>
<td>Proficiency</td>
<td>Upper intermediate</td>
<td>38</td>
</tr>
<tr>
<td>Level</td>
<td>Advanced</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>Passages</td>
<td>Collection of Description</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Causation</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Problem/Solution</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Comparaison</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Ki-shoo-ten-ketsu</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>49</td>
</tr>
</tbody>
</table>

3.3 Instrumentation

3.3.1 Free written recall.

Five English passages were used in this study, and four were extracted from Carrell (1984a)'s study. These four texts were originally constructed by Meyer and Freedle (1984) for their study on the effect of text structure on recall among native speakers of English and later adopted by Carrell to be employed for her participants of non-native speakers of English. The current study employed Carrell's four texts since they were especially modified for ESL students. There are four modifications made by Carrell
(1984a): 1) sentence structure, 2) medium of delivering the information, 3) time interval between first and second recall sessions, and 4) the number of maximum scores for the recall task. They are described in greater detail separately below. With regard to sentence structure, a relatively long sentence in the passage which was written in passive voice in Meyer and Freedle's passage was rewritten in active voice by Carrell. The sentence "the loss of body water is frequently required by athletic coaches of..." was rewritten as "athletic coaches frequently require..." As a result, Carrell's passages contained between 135 and 139 words whereas all of Meyer's passages contained 141 words.

The reliability and validity of using this particular instrument to measure recall performance on structurally different texts has already been established in earlier studies of Meyer and Freedle (1984) and Carrell (1984a). The passages have been controlled for their top-level structure and for consistent content of information in order to investigate the effects of text structure on recall. The information in the texts is identical across the four texts. Each text has different overall text structure (top-level structure) and contains minimal number of different ideas necessary to create these structures. These four texts are given in Figure 9.
lower-case letters - identical content information across the texts

CAPITAL LETTERS WITH UNDERLINE - different information across texts

THE CAPITAL LETTERS WITHOUT UNDERLINE - different information and explicit signal for the discourse type of each passage

Collection of Descriptions (135 words)

SEVERAL ASPECTS OF THE LOSS OF BODY WATER WILL BE DISCUSSED. FIRST, athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

SECOND, THE LOSS OF BODY WATER SUSTAINED BY A 150-POUND INDIVIDUAL EACH DAY IS THREE PINTS OF WATER.

THIRD, loss of body water impairs cardio-vascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.

Causation (137 words)

IT IS TRUE THAT athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

AS A RESULT, TRAGEDIES ARE UNWITTINGLY CAUSED BY THE COACHES WHO REQUIRE THIS LOSS OF BODY WEIGHT IN THESE SITUATIONS. THESE TRAGEDIES OCCUR DUE TO THE FACT THAT THE loss of body water impairs cardio-vascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.
Problem/Solution (139 words)

A SERIOUS PROBLEM IS that athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

A SOLUTION TO THIS PROBLEM IS FOR SCHOOL ADMINISTRATORS TO SUSPEND COACHES WHO REQUIRE ATHLETES TO LOSE BODY WATER. THIS STEP MUST BE TAKEN DUE TO THE FACT THAT THE loss of body water impairs cardio-vascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.

Comparison (137 words)

Athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

IN CONTRAST TO THE ACTION TAKEN BY COACHES, THE AMERICAN MEDICAL ASSOCIATION STRONGLY CONDEMNS THE LOSS OF BODY WATER FOR ATHLETES. THEY CONDEMN LOSS OF BODY WATER DUE TO THE FACT THAT THE loss of body water impairs cardio-vascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.


The additional text that has ki-shoo-ten-ketsu as its top-level structure was created in collaboration with the supervisor and the researcher of this study. While keeping the information identical with the other four texts, the order of the sentences was manipulated according to the ki-
shoo-ten-ketsu structure described by Takemata (1976), and the information in ten (intrusion of an unexpected element unique to Oriental writing pattern) was created and inserted into the passage. Ki-shoo-ten-ketsu passage is shown in Figure 10.

Within the constrain of maintaining the identical content information across the other four passages and limitation of word count, the passage was further examined for its legitimacy as a plausible ki-shoo-ten-ketsu structure by a professor in the Department of Pacific Asian Study at the University of Victoria.

Each of the five passages contains between 135 and 139 words.

lower-case letters - identical content information across the texts
CAPITAL LETTERS WITH UNDERLINE - different information across texts
THE CAPITAL LETTERS WITHOUT UNDERLINE - different information and explicit signal for the discourse type of each passage

Ki-shoo-ten-ketsu (138 words)

Athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes’ usual weights. WHAT DAMAGE WILL HAPPEN?

A loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.
WINNING IS NOT THE ONLY VICTORY IF YOU ARE RISKING YOUR HEALTH. AN IMPORTANT POINT IS TO DEVELOP HEALTHY MIND AND BODY THROUGH PRACTICE.

Loss of body water impairs cardio-vascular functioning. THEREFORE, COACHES WHO REQUIRE ATHLETES TO LOSE BODY WATER SHOULD BE SUSPENDED.

Figure 10. Ki-shoo-ten-ketsu version of the text titled "The Loss of Body Water"

3.3.2 Multiple-choice question

The details of probed recall questions used in Meyer and Freedle (1984) and Carrell (1984a) are not provided; therefore, based on the 21 identical information across the 5 texts, 10 multiple-choice questions were composed as the probed recall measure for this study in consultation with the supervisor. Each question has 4 choices (a, b, c, and d) and contain only one correct answer to a question.

3.4 Data Collection

3.4.1. Procedure and testing conditions

The comparison groups were formed on the basis of a presumed causative factor (type of text structure). Then the possible effect of this causative factor (recall performance) was conceptualized and measured. The procedure for data collection is adopted from Carrell’s (1984a) study which in turn is based on Meyer and Freedle (1984). Carrell initiated two modifications in data collection to accommodate the ESL students in her study.
The participants in Meyer and Freedle (1984) listened to the passage; however, those in Carrell (1984a) read the passage without a time constrain. This modification by Carrell was intended to reduce the impact of oral comprehension rates on the ESL participants because the speed of the oral text might greatly affect ESL learners' comprehension of the text content. Another modification concerned with time interval between two sessions. Instead of one-week interval used in Meyer and Freedle (1984), 48-hour interval was used by Carrell (1984a). The current study followed the methodology of Carrell and had participants read the texts with no time constraint, and a time delay of 48 hours was used.

There were two testing conditions: drop-in and in-class. Volunteers for the study were free to choose either of the conditions for participation. Eleven participants chose to attend the drop-in testing and 61 chose the in-class testing.

Drop-in testing was set up in a medium sized meeting room at the University of Victoria. 7 participants from a lower intermediate level, 1 participant from a higher intermediate level, and 3 participants from an advanced level chose the drop-in testing. The First/Second sessions were scheduled: Monday/Wednesday, Tuesday/Thursday and Wednesday/Friday. Starting at 1:00 p.m., a new session began every hour till 4:00. The participants chose their
convenient time and a pair of testing days. The drop-in testing was completed in one week.

The drop-in participants completed the first session in 25 to 35 minutes; they completed the second session in between 10 to 25 minutes.

The following week, in-class testing was held for 48 participants from three higher intermediate classes and 13 participants from an advanced class in their ESL classrooms at the University of Victoria. The first session was on Monday: 2 classes were tested in the morning and 2 classes in the afternoon. All the second testing sessions were held in the afternoon on Wednesday. It was arranged that the ESL teachers would supervise the testing in their class while the researcher circulated the classrooms for any questions. Two students who chose not to participate were working on their assignment while the testing proceeded.

The in-class participants completed the first session in between 30 and 40 minutes; they finished the second session in between 15 to 30 minutes.

3.4.2 First session / immediate recall and multiple-choice questions.

The participants were randomly assigned to one of the five texts. A Random Numbers Table was used to assign a text to each participant as described earlier. The participants were given a copy of the text accompanied by written instructions which asked them to imagine that they
had come across the text in a newspaper or magazine that they were reading. When they finished reading, they were asked to return the passage and to write down everything they could remember from the text on a separate piece of paper which was provided by the researcher. There was no time limit for either reading the passage or writing the recall. For the written protocol, the participants were asked to try to write in complete sentences and not just to list isolated words or ideas.

After the written recall was finished, they were given another piece of paper which contained 10 multiple choice questions about the text and asked to complete the test by choosing one answer out of four choices in each question.

3.4.3 Second session / delayed recall and multiple-choice questions.

48 hours later, the participants were again administered a recall test in which they were asked to recall as much as they can remember about the text they have read 2 days ago. No indication was given during the first session about the task in a second session. Writing instructions for this delayed recall were the same as for the immediate recall. After the recall task, the same 10 multiple-choice questions were given.
3.5 Free Written Recall

3.5.1 Meyer’s scoring system

There was no detailed description of the scoring procedure of the “Loss of Body Water” passage in either Meyer and Freedle (1984) or Carrell (1984a). Thus, it was necessary for the researcher to infer the scoring procedure for the current study based on Meyer (1975). Meyer’s scoring system, described in Meyer (1975), was used for Meyer and Freedle (1984). The system will now be explained using the information from the “Loss of Body Water” passage. Each free recall was scored for idea units which consist of two elements named content units and relation units. Content units correspond to words in a text. For example, if “loss of body water” or “athletic coaches” in the text is recalled, each content unit is scored as present regardless of whether the unit is correctly related to the other information in the text.

Relation units are words or phrases that orient the reader to the correct relationship among information in the text. For example, if “loss of body water” is correctly recalled as the request made by “athletic coach”, the relationship unit for this information is scored; however, if “loss of body water” is incorrectly recalled as a request made by “wrestlers”, it is not scored. That is, the content unit for “loss of body water” and “wrestler” will be scored as present, but no score for the relationship unit for “loss of body water” and “wrestler” would be given).
3.5.2 Scoring system of this study

Carrell (1984a) reduced the 58 identical idea units in Meyer and Freedle (1984) to 21 identical idea units. However, Carrell does not explain how the idea units were reduced. Figure 11 summarizes the 21 idea units scored in Carrell.

| 1. Loss of body water is required by athletic coaches |
| 2. This is required of wrestlers                        |
| 3. This is required of boxers                           |
| 4. This is required of judo contestants                 |
| 5. This is required of karate contestants               |
| 6. This is required of football team members            |
| 7. This is done so athletes will attain specified body weights |
| 8. These specified weights are lower than their usual weights |
| 9. Loss of body water impairs cardio-vascular functioning |
| 10. This limits work capacity                           |
| 11. A loss of 3% of body water                          |
| 12. Impairs physical performance                        |
| 13. A loss of 5% of body water                          |
| 14. Results in heat exhaustion                         |
| 15. A loss of 7% of body water                          |
| 16. Causes hallucinations                              |
| 17. A loss of 10% or more of body water                 |
| 18. Results in heat stroke                              |
| 19. Results in deep coma                                |
| 20. Results in convulsions                              |
| 21. If not treated, death will result                   |

Figure 11. Analysis of Identical Information into 21 Common Idea Units


The description of the scoring procedure for the written recalls was not clearly described by Carrell (1984a) either. The following scoring procedure was inferred by analyzing the components of each idea unit used in Carrell. The researcher referred to Meyer (1975) for the inferential
analysis of Carrell’s scoring system. Idea units (1-10) were scored by considering both content and relation units simultaneously. For example, Idea Unit 1. consists of “Loss of body water”, “is required by” and “athletic coaches”. All parts are required in order to count the presence of this idea unit in the protocol.

The remaining idea units (11-21) were scored only by considering the content units. For example, Unit 13, “A loss of 5% of body water” is counted separately from Unit 14, “results in heat exhaustion”. Both idea units would be scored regardless of whether the correct relationship between the two units was included in the recall protocol. However, it should be noted that a relation unit within an idea unit would not be ignored. For example, Unit 14 “results in” and “heat exhaustion” require a consideration of correct relationship between the two.

Carrell’s scoring procedure inferred by the researcher (1984a) was a departure from Meyer and Freedle (1984). Although it was decided to use Carrell’s 21 common idea units for the scoring of this study in order to maintain parallelism, the challenge was how to interpret Carrell’s minimal description of scoring. The only clearly stated procedure by Carell were as follows:

1) “Each recall protocol was scored for the presence or absence of the 21 identical idea units” (Carrell, 1984a, p. 454).
2) The participants were allowed to use their own words.

To elaborate this minimal scoring description, the researcher included the following criteria by referring to Meyer (1975):

3) Sequence of the idea unit was not a criterion nor was spelling a consideration.

4) The presence of partial information within an idea unit was given a half mark.

The rationale for adding a half mark in criteria 4) was so that the raters could effectively deal with the complexity in scoring following Carrell's 21 idea units which require the simultaneous consideration for both content and relationship units described by Meyer (1975). In addition, criteria 4) was added to acknowledge the participants' effort of remembering partial information since there were possibilities that the participants would contact the researcher to discuss and review their performance.

Examples from the participants' written protocols in this study are provided to exemplify the scoring procedure for each idea unit below. First, an idea unit is presented. Then, the scoring criterion 2), 3) or 4) is described based on the sample participants' writing for that idea unit. Lastly, the actual participants' writing is presented where applicable. All of the participants' examples are italicized.
Unit 1: Loss of body water is required by athletic coaches

- the passage gist is identified as loss of body water but the information that 'it is required by athletic coaches' is missing (1/2 given)

"Several aspect of loss of body water will be discussed. First, athletes are required to lose body water to get a specified weight. Second three pints of water..."

Please note Unit 2 to 6 are explained together.

Unit 2: This is required of wrestlers
Unit 3: This is required of boxers
Unit 4: This is required of judo contestants
Unit 5: This is required of karate contestants
Unit 6: This is required of football team members

- a student's sentence correctly identifies the categories of athletes but does not indicate that 'loss of body water' is required of them (1/2 given)

"The members of Karate, Judo, restling are required to lose their weight more than the athletes."

- a student’s sentences correctly identify the categories of athletes, yet they are used in the wrong context (1/2 given)

"Body water is important for sports athletes such as boxer, judo-player, baseball team player or etc...."

Unit 7: This is done so athletes will attain specified body weights.

- a variety of vocabulary used to indicate 'specified body weights' (full mark given)

"good shape", "good/unusual body weights"
"special/real/right/limit/better/lower/suitable/fit weights"

- semantically correct sentence used (full mark given)

"This is done so athletes will keep weight or lose weight for their game."

"...in order to measure their weight to have professional performance."
Unit 8: These specified weights are lower than their usual weights.

- "normal" for 'usual' (full mark given)
- 'than their usual weights' is not present (full mark given)

Unit 9: Loss of body water impairs cardio-vascular functioning

- 'impairs' is missing (1/2 given)
- incoherent verbs used for 'impairs' (1/2 given)
  "result"
- invented spelling used for 'cardio-vascular'
  (full mark given) "cardinal vulcualrs"

Unit 10: This limits work capacity

- 'work' is missing (full mark given)
- "physical capacity", "work function" instead of 'work capacity' (full mark given)

Unit 11: A loss of 3% of body water

- "A loss of 1/3%" (1/2 given)

Unit 12: impairs physical performance

- 'impairs' is missing (1/2 given)
- incoherent verbs are used for 'impairs' (1/2 given)
  "cause", " imply"
- "good performance", "body function", "physical work" instead of 'physical performance' (full mark given)
- "problem to perform work" (full mark given)
- "impairs important body function" (full mark given)

Unit 13: A loss of 5% of body water

- "A loss of 1/5%" (1/2 given)

Unit 14: results in heat exhaustion

- 'exhaustion' is missing, (1/2 given)
- 'heat' is missing (1/2 given)
- "heat problem", "heart exhaustion", "heart tiredness" instead of 'heat exhaustion' (1/2 given)
- "heat tiredness" (full mark given)

Unit 15: A loss of 7% of body water

- "A loss of 1/7%" (1/2 given)
Unit 16: causes hallucinations
   - invented spelling for 'hallucinations' (full mark given) "hellucination"
   - "strange action", "crazy" for 'hallucinations' (full mark given)

Unit 17: A loss of 10 or more of body water
   - 'or more of body water' is missing (full mark given)
   - "A loss of 1/10%" (2/1 given)

Unit 18: results in heat stroke
   - "heart stroke", "heat sickness" instead of 'heat stroke', (1/2 given)
   - "heat attack" (full mark given)

Unit 19: results in deep coma
   - 'deep' is missing (full mark given)

Unit 20: results in convulsions
   - invented spelling for 'convulsions' (full mark given)

Unit 21: if not treated, death will result
   - 'if not treated' is missing (full mark given)

The modification of giving a half mark is clearly a departure from Carrell's scoring procedure. Therefore, the possible consequences that this departure might have had for the scoring and consequences for comparability with Carrell (1984a) are discussed.

First, a possible consequence of adding a half mark category to, otherwise 1 or 0 scoring system would be a raise of individual scores on recall; thus, a raise of mean scores of each passage type. This would only affect the comparability of performance differences of recall quantity
between Carrell’s (1984a) participants and this study’s. The comparability of the effect of text type on recall would not be affected because 1) the same testing conditions (reading, 48 hours delay, and the use of identical passages) were kept to achieve a parallelism, and 2) the consistent scoring procedure ‘within’ this study is maintained. As a matter of fact, Carrell’s drastic departure from Meyer’s scoring system by reducing 58 idea units to 21 did not impede the comparability between those two studies. Another important area of comparison, analysis of the protocol organization, was not affected at all since it did not employ this scoring system.

In addition, the following two points are presented to confirm the negligible impact of a half mark system. First, there are 2058 questions to score all together for the written recall in the current study (49 participants x 21 idea units x 2 sessions). Of 2058, a half mark system was used to score 71 questions. This is a mere 3.4% of the entire scoring. The rest, 96.6% of questions, were scored for the presence or absence of idea units as described in Carrell (1984a).

Second, the participants in this study had substantially higher free written recall scores than in Carrell’s (1984a) study. The probed recall tests administered after the recall tasks showed the same result.
This is more likely a reflection of the much better text comprehension of the participants in this study compared to Carrell's participants. Therefore, there is no reason to attribute the difference in mean scores of recall performance between the two studies to the deviation of the scoring procedure of this study.

The computation of the free recall scores of this study is now described. Immediate and delayed recall frequency data on the 21 identical idea units from the five text types were analyzed first with SPSS version 12 running on a desktop PC in a computer lab at the University of Victoria. One-way analysis of variance (ANOVA) for each factor (Language, Proficiency level and Passage type) then double and triple interactions of those factors on recall performance were analyzed with multivariate analysis of variance (MANOVA).

The basic statistic concepts employed in this study were mean and standard deviation. The mean recall scores and standard deviations on the immediate and delayed recall tasks were computed, and ANOVA or MANOVA was used to compare the amount of between-groups variance with the amount of within-groups variance. If the F ratio was statistically significant at the $p < .05$ level, $t$ test for multiple comparisons or Duncan's multiple-range post-hoc test were used to determine which group’s means differ significantly from one another. From these data, the researcher determined the effect of each factor on the participants’
recall performance as well as the superiority of a particular group within each factor to other groups if present.

3.6 Multiple-Choice Questions

Ten multiple-choice questions were scored for choosing the correct answer. Each correct answer was given a full mark of 1, and the maximum score is 10. There was one participant who chose 2 answers for each question for both immediate and delayed multiple-choice tasks. The data from this participant was removed from the analysis.

3.7 Protocol Organization

An additional analysis was carried out to examine how the participants organized their written protocol for the recall task. The scoring procedure of this analysis was described in detail in both Meyer and Freedle (1984) and in Carrell (1984a). The procedures were consistent between those two studies. Therefore, the scoring process of this study is described by following Carrell's.

Each recall protocol was classified depending on the passage type employed by the participant on their written recall protocols: comparison, causation, problem/solution, collection of descriptions or ki-shoo-ten-kestu. Two scorers independently rated the overall rhetorical structure of the recall protocol and classified each as either a) the same rhetorical organization in the protocol as the original
passage, b) a rhetorical organization different from the original passage, or c) no apparent structure. To be classified as a), the protocol needed to be organized the same as the passage that the participant read. For example, to be classified as problem/solution, the protocol had to present a problem and a solution to the problem. The requirement for collection of description was a group of descriptions about a topic. Criteria for comparison required two opposing views to be presented. As long as a protocol shows one of those relations, the protocol was classified accordingly. The information recalled in the protocol did not have to be the same as the in the original passage. This scoring relied on macrostructure features of a text type only. The Ki-shoo-ten-kesu passage was classified as such as long as the protocol included clear evidence of the ten paragraph since the rhetoric of ki-shoo-ten-kesu does not have overt rhetorical marker as the other passage types do and ten is a very distinctive part of this rhetorical organization.

In case of c), no apparent structure, Meyer and Freedle's (1984) additional categories were used as Carrell (1984a) did. If the protocol contains a topic and randomly associated comments about that topic, it was classified as description. Finally if a protocol merely contains a list of ideas, it was classified as collection.

The examples for each text type follow to clarify the scoring procedure of protocol organization. The following
selected samples are taken from recall protocols of different participants in the current study.

Collection of Description
There is some discussion of losing body water. First, the athletic coaches want their sportmen such as wrestlers, judoes, boxers, karates, or footballers, to lose their body water to find their actual weight. Second, if we lose 3% of the body water, our physical performance would be reduced. If we lose 5%, we would get the heat exhaustion, we would get the hallucination. If we lose 7% of the body water or we would died if we lose 10% of it.

Causation
It is true that the athletic coaches require their wrestlers, boxers, Judo contestants, Karate contestants and football team players to lose their body water. The specified weight is below the original weight. However, the tragedy results what the athletic coaches require to the athletes. Losing body water results in limitation of ability in work. A loss of 3 percent of body water results in heat problem. A loss of 5 percent of body water results in limitation of performance. A loss of 10 percent or over of body water results in heat stroke, deep coma and convulsions. If not treated, death would happen.

Problem/Solution
There were a serious problem about athletic coach require several kinds of athletes lose their weight to adapt the sports game.

The solution is lose their body water can help them to lose weight. Here are more details. For an athlete, if he loss three percent of his body water, he will physical performce. If he loss five percent of his body water, he will get exhaustion. If he loss seven percent of his body water, he will get hallucination. If he loss nine percent of his body water he will get heat stroke. If not treated, it can results death.

Comparison
Sometimes coaches who are responsible for athletes in such as boxing, judo, wrestling order that contestants lose their body water weight, because to take part in games, their weight have to be in the limit weight.

However American doctors warn about that, because it can make big problem. For example, if they lose their body water over 10%, they will be in deepcoma or heat stroke, moreover they can die.
Ki-shoo-ten-ketsu

Athletic coaches frequently require the athletes to lose their body water in order to get the specified weights. Usually, these weights are below the normal ones. What damage will happen to them.

If they lost 3%-5% of the body water they’ll get exhaustion. If 7% of the body water were lost they will get hallucinations. It will be more dangerous for them to lose 10% of the water. If they still don’t attend to it, they’ll die.

Winning doesn’t mean victory. If your win depends on the risking of your health, it isn’t a victory. The purpose for the athlete to have sports is building up their mind as body.

So the coaches should stop doing this.

Description

The loss of body water will be discussed. Athletic coaches need karate player or judo player or something like that. If you lost 10% or more of your body’s water, you will die. If you lost 5% of your body’s water, your body have a heat. If you lost 3% of it, you are tired.

Collection

Athlete coaches recommend boxers, Karate, Judo and wrestling etc. to lose their body water. Ten percent or more from losing the body water might cause serious results and death. Losing of body water makes the person more athletic and not feel tired easily.

3.8 Raters

Separate independent raters were employed for the scoring of written recall and protocol organization analysis. The raters for the written recall were the researcher of this study and a 4th year university student in the department of neuropsychology who was about to graduate with Bachelor of Science. This rater was experienced in research assisting, administering tests and marking. The raters for protocol organization analysis were the researcher and the supervisor of this study who possesses an extensive knowledge and understanding about
text structure. For both written recall and protocol organization analysis, the scoring scheme was explained to the raters, and 5 protocols were scored together with the researcher for training. After this practice session, the raters scored the protocols on their own. The inter-rater reliability for written recall was 95.4% and that of protocol organization was 86%. The inter-rater reliability was calculated by the number of actual agreements achieved over the number of possible maximum agreements.

3.7 Summary

In Chapter 3, the method of analysis was explained. The approach of the current study is quantitative, and the causal-comparative. The participants were post secondary students who were attending ESL classes offered by the English Language Centre at the University of Victoria. Procedures for data collection and analysis were explained following those established by Carrell (1984a).

In chapter 4, the results of Japanese ESL students' recall performance across the five texts are described and presented. As statistical measures, one-way analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) are used to examine the relationship between recall performance (immediate and delayed) and each variable (language, proficiency level, passage type).
Chapter 4  Analysis of The Test Results

4.1. Written Recall and Multiple-Choice Questions

The means and standard deviations of immediate and delayed recall scores and multiple choice test scores are shown in Table 3. The first thing to be noted is the high mean scores of both immediate and delayed multiple-choice questions. Considering the maximum score for this task is 10, 8.2 for immediate and 7.6 for delayed are quite high mean scores. The generally high scores do indicate that the passages were well understood by the participants.

Table 3
Means and Standard Deviations of Recall and Multiple Choice Questions

<table>
<thead>
<tr>
<th>Condition</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>49</td>
<td>9.34</td>
<td>4.39</td>
</tr>
<tr>
<td>delayed</td>
<td>49</td>
<td>8.67</td>
<td>4.47</td>
</tr>
<tr>
<td>Multiple</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>48</td>
<td>8.27</td>
<td>1.62</td>
</tr>
<tr>
<td>delayed</td>
<td>48</td>
<td>7.65</td>
<td>2.12</td>
</tr>
</tbody>
</table>

Note. Maximum/minimum recall score = 21/0
Maximum/minimum multiple choice score = 10/0

The distribution of scores for both immediate and delayed recall in Figure 12 shows a negative skewing which suggests a ceiling effect on scores. This skewed distribution may compromise the reliability of the scores in statistical comparisons.
The ceiling effect in the multiple choice questions may have been caused by the small range of the test’s items (10 questions) and high mean scores. Also, the standard deviations of multiple-choice questions are very small (Immediate, $SD = 1.62$, $M = 8.3$; Delayed, $SD = 2.11$, $M = 7.6$) due to the small sample size and small range of scores (0-10). Because of these doubts about the reliability of the result from multiple-choice questions these data were removed from further analysis.

4.2 The Effect of Recall Condition

First, Paired Samples t-test was performed to examine the effect of Recall Condition (Immediate versus Delayed). The result showed that overall there is a statistically significant effect of Recall Condition ($df = 48; t = 2.545; Sig. = .01$). In other words, the participants performed better overall in immediate recall than in delayed recall as was hypothesized.
However, when the effect of Recall Condition was examined by language groups, a different effect was revealed. As shown in Table 4, the effect of Recall Condition (Immediate versus Delayed) was statistically significant only in the Japanese language group. The Chinese and Korean samples in the current study show no statistical difference in recall.

Table 4

<table>
<thead>
<tr>
<th>Recall Condition X Language Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Japanese (N=20)</td>
</tr>
<tr>
<td>Immediate</td>
</tr>
<tr>
<td>Delayed</td>
</tr>
<tr>
<td>Chinese (N=16)</td>
</tr>
<tr>
<td>Immediate</td>
</tr>
<tr>
<td>Delayed</td>
</tr>
<tr>
<td>Korean (N=13)</td>
</tr>
<tr>
<td>Immediate</td>
</tr>
<tr>
<td>Delayed</td>
</tr>
</tbody>
</table>

In Carrell's (1984a) study, although overall effect of Recall Condition was statistically significant for all the language groups combined, that was not the case in her Oriental group that consisted of Chinese and Korean. In other words, delayed recall of the test passage was statistically equivalent to the immediate recall of the Chinese and Korean (oriental) sample. The same pattern of recall was seen in both Carrell's and the current study. The reason why delayed recall of the Chinese and Korean samples is not statistically significantly lower than immediate
recall is unknown. Further, there is no evidence to account for the different pattern of recall for the Japanese sample. It is always tempting to suggest further research with larger samples, but that does not indicate a direction for an explanation.

4.3 The Effect of Language, Proficiency Level, Passage Type, and Their Double and Triple Interaction on Recall

Immediate and delayed recall frequency data on the 21 identical idea units from the three language groups, the two English proficiency levels, and the 5 passage types were analyzed with multivariate ANOVA (Recall Condition x Language Groups x English Proficiency x Passage Type). The specific procedure used for this analysis of variance was the General Linear Models (GLM) procedure of the SPSS package of statistical programs on IBM computer of University of Victoria.

As can be seen in Table 5, the only factor that demonstrated statistically significant effect at the $p < .05$ level was Language in delayed recall. This means that there are differences among the three language groups in their performance of recall tasks in the current study. None of the other main effects or interactions are statistically significant.
**Table 5**  
Recall Condition X Language Group X English Proficiency X Passage Type: General Linear Models Statement and F-Values

<table>
<thead>
<tr>
<th>Factor(s) and Interaction</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>2</td>
<td>2.412</td>
<td>.108</td>
</tr>
<tr>
<td>delayed</td>
<td>2</td>
<td>3.729</td>
<td>.037</td>
</tr>
<tr>
<td>Proficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>1</td>
<td>2.157</td>
<td>.153</td>
</tr>
<tr>
<td>delayed</td>
<td>1</td>
<td>3.141</td>
<td>.087</td>
</tr>
<tr>
<td>Passage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>4</td>
<td>.119</td>
<td>.975</td>
</tr>
<tr>
<td>delayed</td>
<td>4</td>
<td>.133</td>
<td>.969</td>
</tr>
<tr>
<td>Language x Proficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>2</td>
<td>.569</td>
<td>.573</td>
</tr>
<tr>
<td>delayed</td>
<td>2</td>
<td>.135</td>
<td>.875</td>
</tr>
<tr>
<td>Language x Passage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>7</td>
<td>1.676</td>
<td>.156</td>
</tr>
<tr>
<td>delayed</td>
<td>7</td>
<td>1.933</td>
<td>.102</td>
</tr>
<tr>
<td>Proficiency x Passage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>3</td>
<td>2.539</td>
<td>.077</td>
</tr>
<tr>
<td>delayed</td>
<td>3</td>
<td>1.953</td>
<td>.144</td>
</tr>
<tr>
<td>Language x Proficiency x Passage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediate</td>
<td>1</td>
<td>1.030</td>
<td>.319</td>
</tr>
<tr>
<td>delayed</td>
<td>1</td>
<td>.338</td>
<td>.566</td>
</tr>
</tbody>
</table>

*Note. P < .05*

4.4 The Effect of Passage Type

Since Carrell (1984a) showed statistically significant effect of passage type, that of immediate versus delayed recall of the five passage types in the current study will be discussed. As mentioned earlier, the effect of passage type in the current study was not significant. Separate one-way ANOVA as well as MANOVA were performed to examine the passage effect only to confirm the non-existence of a significant effect of passage type on recall (MANOVA values: Immediate, $F = .119$, Sig. = .975; Delayed, $F = .133$, Sig. = .969).

The current study was especially interested in investigating the effect of *ki-shuu-ten-ketsu* rhetoric,
which has been reported in Contrastive Rhetoric literature (see Connor 1996) as a favoured writing convention in Japan, China and Korea. Based on this evidence, the researcher hypothesized that ki-shoo-ten-ketsu passage could elicit better recall than other text types. However, the current study did not substantiate this expectation. Moreover, despite the non-existence of statistical significance of passage effect, when the mean scores are simply compared, that of ki-shoo-ten-ketsu was the lowest in immediate recall and the second lowest in delayed recall. This evidence casts doubt on an advantaged memorability of the ki-shoo-ten-ketsu pattern.

![Figure 13. Effects of Five Passage Types on Immediate and Delayed Recall](image)

Figure 13. Effects of Five Passage Types on Immediate and Delayed Recall
An interesting tendency observed in the passage comparison is the parallelism with Carrell’s (1984a) in that problem/solution and causation passage elicited the higher mean scores than the other types, and that collection of description type elicited the lowest mean score if *ki-shooten-ketsu* pattern was excluded. This is depicted graphically in Figure 13. Although the differences failed to achieve statistical significance, the parallelism is worth noting as a possible tendency of the effect of passage type in ESL students’ recall performance.

4.5 The Effect of Language

There was a statistically significant effect for different language groups in delayed recall ($F = 3.729, \text{Sig.} = .037$). The Korean participants recalled statistically significantly better than the Japanese and Chinese participants. In a search for a possible explanation, a further investigation of two possible factors was performed: 1) the percentage of the higher English proficiency level in each language group, and 2) the percentage of problem/solution or causation passages being read in each language group.

According to the results reported in Table 6, 23% of Korean participants are in the advanced English proficiency level, and this is not the largest percentage of the participants in that level among three language groups. However, the percentage of problem/solution or causation
passage being read among Korean participants is considerably
ger higher than the other two groups. A little over half of the
Korean participants read either problem/solution or
causation passage. Carrell (1984a) and Meyer and Freedle
(1984) referred to problem/solution and causation as more
structured than other rhetorics and reported that these two
more structured patterns resulted in significantly higher
recall scores. Those two passage types also tended to draw
higher mean scores in the current study. Thus, it could be
that Korean participants might have had an advantage by
reading those more easily recalled passage types, which may
account for their higher performance than the other language
groups in the current study.

Table 6

Percentages of 'Advanced Level' in Each Language Group and
Percentages of 'tightly', 'loosely' organized text and KSTK read

<table>
<thead>
<tr>
<th>Proficiency</th>
<th>'tight'</th>
<th>'loose'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>Problem/solution or causation</td>
<td>Collection of description</td>
</tr>
<tr>
<td>Japanese</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Chinese</td>
<td>13%</td>
<td>31%</td>
</tr>
<tr>
<td>Korean</td>
<td>23%</td>
<td>54%</td>
</tr>
</tbody>
</table>

Table 6 also shows the percentage of collection of description and ki-shoo-ten-ketsu passages being read by
each language group. According to the results, 40 percent
of Japanese participants read collection of description
passage. Whereas problem/solution and causation passages
are structurally highly organized, collection of description
is the least tightly organized type (Meyer, 1975, 1979,
1982). This least organized passage type resulted in
statistically significant lower recall scores in both the studies of Carrell (1984a) and Meyer and Freedle (1984). Moreover, 25% of Japanese participants read *ki-shoo-ten-ketsu* which elicited the lowest mean scores among five passages in the current study. This means that 65% of Japanese participants read two of the lowest recall educing passages. This may explain their lower recall performance in relation to the other groups, especially in the delayed recall condition.

4.6 The Effect of Language X Passage Type

As pointed out earlier, there was no statistically significant effect for passage type. A further investigation of a possible effect of discourse type within each language group was conducted in order to determine any parallelism with Carrell’s (1984a) study. MANOVA on SPSS program was used for this analysis (see Table 7).

Table 7

Immediate and Delayed Recall by Language Group and Passage Type

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>problem / solution</td>
<td>causation</td>
<td>comparison</td>
</tr>
<tr>
<td><strong>Japanese</strong></td>
<td>(n=20)</td>
<td>(n=1)</td>
<td>(n=4)</td>
</tr>
<tr>
<td>Immediate</td>
<td>4.50</td>
<td>11.50</td>
<td>12.50</td>
</tr>
<tr>
<td>Delayed</td>
<td>2.50</td>
<td>11.50</td>
<td>12.50</td>
</tr>
<tr>
<td><strong>Chinese</strong></td>
<td>(n=16)</td>
<td>(n=3)</td>
<td>(n=2)</td>
</tr>
<tr>
<td>Immediate</td>
<td>7.17</td>
<td>5.50</td>
<td>8.13</td>
</tr>
<tr>
<td>Delayed</td>
<td>7.00</td>
<td>7.00</td>
<td>5.25</td>
</tr>
<tr>
<td><strong>Korean</strong></td>
<td>(n=13)</td>
<td>(n=3)</td>
<td>(n=4)</td>
</tr>
<tr>
<td>Immediate</td>
<td>15.83</td>
<td>12.16</td>
<td>9.33</td>
</tr>
<tr>
<td>Delayed</td>
<td>15.68</td>
<td>11.75</td>
<td>10.50</td>
</tr>
<tr>
<td><strong>GM</strong></td>
<td>(N=49)</td>
<td>(n=7)</td>
<td>(n=10)</td>
</tr>
<tr>
<td>Immediate</td>
<td>10.50</td>
<td>10.55</td>
<td>9.50</td>
</tr>
<tr>
<td>Delayed</td>
<td>10.07</td>
<td>10.70</td>
<td>8.61</td>
</tr>
</tbody>
</table>
First, it can be noted that mean score of Korean participants in delayed recall in a comparison passage type was better than their immediate recall. This is a peculiar phenomenon, and unfortunately there is no clear explanation of this happening. However, there are only three Korean participants with comparison passages. The distribution of passage type is due to the random distribution of test material rather than a deliberate distribution to equalize passage types by language group. This extremely low frequency for some passage types is the result of dividing the whole sample of participants into sub-groups by language and passage type, which resulted in unequal sample sizes by language for each text type. This may be a reason for the peculiar phenomenon. Another speculation that could be made is that those Korean participants may have talked among themselves and thereby reinforced recall of the information in the texts before the delayed recall task.

Secondly, none of the passage types was significantly better than any other on recall for each language groups in the current study. In contrast, Carrell found a differing effects of the various passage types for different language groups; for the Oriental group (Korean and Chinese) in her study, there were clear distinctions between 1) problem/solution and causation, and 2) comparison and collection of descriptions (Carrell, 1984a). However, it should be noted that Carrell did not further divide the
oriental group into different linguistic groups; therefore, her findings are for the combined group of Korean and Chinese (N=12). Although it seems there is no parallelism found when each linguistic group is analyzed separately in the current study, when Korean, Chinese and Japanese are combined together, problem/solution and causation passage types reveal better recall than comparison and collection of descriptions passage types.

Table 8

<table>
<thead>
<tr>
<th>Passage</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causation</td>
<td>10</td>
<td>10.63</td>
<td>3.94</td>
</tr>
<tr>
<td>Problem/solution</td>
<td>7</td>
<td>10.29</td>
<td>5.42</td>
</tr>
<tr>
<td>Comparison</td>
<td>9</td>
<td>9.06</td>
<td>3.70</td>
</tr>
<tr>
<td>Collection of Description</td>
<td>12</td>
<td>7.90</td>
<td>4.70</td>
</tr>
<tr>
<td>Ki-shoo-ten-ketsu</td>
<td>11</td>
<td>7.93</td>
<td>4.03</td>
</tr>
</tbody>
</table>

The explanation for the inability to draw sufficiently strong evidence of such effect in separate analysis of each language group could be most likely due to the small number of participants available in the current study.

4.7 The Effect of Protocol Organization on Recall

For the protocol recall analysis, the data of 8 participants that had been removed from the previous analysis because they did not fit into any of the major language groups were included since the researcher was interested in how the participants organized the written protocols regardless of their language background.
Therefore, the number of participants for the analysis of recall in the protocols is 57.

Table 9 shows the passage type that the participants read. It is the characteristics of this passage type that were used to determine whether the recall protocols were the same or different text type.

Table 9

*Relationship Between the Passage Type of the Original Text and That Used to Organize Protocols*

<table>
<thead>
<tr>
<th>Immediate Recall</th>
<th>Relation Between the Original Discourse Type and That of Recall Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With Same Structure (n=39)</td>
</tr>
<tr>
<td>Problem/Solution</td>
<td>7 (77.8%)</td>
</tr>
<tr>
<td>Causation</td>
<td>6 (50%)</td>
</tr>
<tr>
<td>Comparaison</td>
<td>8 (72.7%)</td>
</tr>
<tr>
<td>Collection of Descriptions</td>
<td>7 (53.8%)</td>
</tr>
<tr>
<td>Ki-shoo-ten-ketsu</td>
<td>11 (91.7%)</td>
</tr>
</tbody>
</table>

Mean Number of Idea Units Recalled  
Immediate Recall: 11.17  
Delayed Recall: 10.10

<table>
<thead>
<tr>
<th>Delayed Recall</th>
<th>With Same Structure (n=32)</th>
<th>With different Structure (n=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem/Solution</td>
<td>6 (66.7%)</td>
<td>3 (33.3%)</td>
</tr>
<tr>
<td>Causation</td>
<td>4 (33.3%)</td>
<td>8 (66.7%)</td>
</tr>
<tr>
<td>Comparaison</td>
<td>7 (63.6%)</td>
<td>4 (36.4%)</td>
</tr>
<tr>
<td>Collection of Descriptions</td>
<td>5 (38.4%)</td>
<td>8 (61.6%)</td>
</tr>
<tr>
<td>ki-shoo-ten-ketsu</td>
<td>10 (83.3%)</td>
<td>2 (16.7%)</td>
</tr>
</tbody>
</table>

Mean Number of Idea Units Recalled  
Immediate Recall: 11.17  
Delayed Recall: 10.10

Considering that only 26% of Carrell's (1984a) ESL participants utilized the text's original discourse structure to organize their recall protocol in their first recall and 20% in the second recall, it is very interesting.
that 68% of ESL participants (39 out of 57 students) in the current study utilized the original passage structure in the first recall and 56% (32 out of 57 students) in the second recall.

Carrell's (1984a) participants were also recruited from a University English program with intermediate or higher English proficiency. Although there is no description that defines 'intermediate', it may be assumed that there is no major discrepancy in the definitions of proficiency levels between the ESL program at Southern Illinois University and the ESL program at the University of Victoria. If the proficiency level discrepancy could not be the explanatory factor for the difference between the two groups of participants' ability to utilize the original passage structure in their written recalls, then the question of whether the participants in the current study have already been sensitized about the importance of rhetoric prior to the testing arises. However, according to the ESL teachers of the participants from the university of Victoria, the rhetoric had not been taught yet at the time of testing except to the advanced English proficiency classes (N=15). This means that only 26% of the participants of the current study had learned about rhetoric previously in their ESL classes, yet 68% of them were able to identify and utilize it in their protocols. Therefore, prior knowledge of rhetorical structure through the university ESL education cannot also be the reason why considerably more participants
in this study than in Carrell’s were successful in utilizing the same rhetorical structure to organize their protocols.

In relation to the relationship between English proficiency level and the utilization of original passage structure on protocols, a simple percentage comparison was performed. The results showed that 80% (12 of 15) participants with high English proficiency and 64% (27 of 42) participants with intermediate English proficiency used the same structure in immediate recall and 66% and 52% respectively in delayed recall (see Table 10).

Table 10
Relationship Between Proficiency Level and Utilization of Original Passage Types Used to Organize Protocols Written in the Immediate and Delayed Recall

<table>
<thead>
<tr>
<th></th>
<th>Advanced</th>
<th>Intermediate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>80%</td>
<td>64%</td>
</tr>
<tr>
<td>Delayed</td>
<td>66%</td>
<td>52%</td>
</tr>
</tbody>
</table>

This pattern was also observed in the study of Meyer, Brandt, and Bluth (1980). Their grade nine students who are rated by their teacher and by standardized tests as good in reading comprehension used the same top level structure when recalling the passage content while students who were rated poor in reading comprehension did not.

Secondly, the relationship between the recall performance and the rhetorical type used by the participants to organize the recall protocol was examined. One-way ANOVA showed the followings: Immediate, \( F = 16.563, \text{Sig.} = .000 \); Delayed, \( F = 4.274, \text{Sig.} = .043 \). This means that the
differences between the amounts recalled with 'same' and 'different' structures was statistically significant at $p < .05$ for both immediate and delayed recall tasks. Accordingly, it can be stated that those who utilized the same passage structure as the original text in their written protocol could recall more information than those who used a different passage structure in their free recall. This is consistent with findings of Carrell (1984a) and Meyer and Freedle (1984).

Another analysis of the protocol organization is the comparison between the percentages of the participants employing the original passage structures in their written protocols in each of the 5 passage structures (Table 9). It is interesting that participants who read the causation passage tended not to use the same structure in their written protocols even though their mean scores of both immediate and delayed recall is higher. A further investigation revealed that among those who used the different passage structure from causation, nearly 70% used comparison structure of the coach’s position and the subject’s view in their immediate recall protocols. The following is an example of a participant who read causation and organized the protocol in comparison.

From the article inform that the atherlic coaches try to control the wrestlers, Judo, Karato and football team players to loose water in their body. As a result, their weight will below their actual weight. Losing water of your body can be harmful for their health. Losing 3% of water cause physical performance and losing 5% body water results to your blood circulation. If you lose 7% of water, it effects heat
stoke to your body. More, losing 10% of water or more causes coma. If not treated, death can be happen.

The remainders of the 30% of protocols that were not organized as causation are scored as descriptions because they only contained a topic and associated random comments.

When the other passage types were examined, even more interesting phenomenon was disclosed. Most of those who used a different structure from their original passage organized their protocol either collections (collection of isolated ideas) or descriptions (a topic and randomly associated comments about that topic), and only 3 participants (3 out of 17 in delayed and 0 out of 12 in immediate) used comparison structure. This means that only participants who read causation were inclined to use comparison structure as an alternative organization.

There are several points to consider before an attempt to explain this trend. First, causation organizes information into an antecedent and consequent facts. Second, in the causative passage used in this study, the antecedent is the athletic coaches requiring their athletes to lose their body water, and the consequent is the physical danger caused by that request. It should be noted that the consequent is negative in this case. Third, Carrell (1984a) explains that comparison structure poses two opposing views that are weighted either equally or one side weighted more as a favouring view by the third party.
Considering these three points, the phenomenon could be explained that although the causation passage in the study merely stated the ‘antecedent-consequent’ information, the negativity in the consequent might have allowed the participants to easily turn that information as their personal opposing view to the coaches’ requests, and their personal view was weighed more as a favouring view. This reorganization of information might have been performed in order to increase their ‘memorability’ of the information presented in the text. Interestingly, the reverse did not happen; in other words, none of those who read comparison passage used causation to organize their written protocols. This may demonstrate the ease and direction of transferability between the two passage types. However, it should be noted that if the consequence of the causation passage had been positive, there would be no opposing views to present. As a result, this transfer (causation passage to comparison passage) might not have happened. These passage characteristics and the potential transferability of the passages could be a useful component in teaching writing.

When the protocol organizations of the participants who read ki-shoo-ten-ketsu were examined, it showed that it has the highest percentage of utilizing the same structure in both immediate and delayed recall among the five passage types (ki-shoo-ten-ketsu, Immediate = 91.7%; Delayed = 83.3%). As mentioned in methodology, since ki-shoo-ten-ketsu does not necessarily have overt markers seen in other
passage types such as problem/solution ("A problem is" and "A solution to this problem is") or comparison ("In contrast to"), *ki-shoo-ten-ketsu* was classified as such with the existence of ten which is most unique in this rhetorical structure. Remarkably, information in ten was almost always remembered even though other details in the passage were forgotten. An example from the participant protocol follows.

Athletic coaches frequently require wrestlers, boxers, judo contestant, karate contestant, and football team member to lose their body water so that they will attain specified weight.

A loss of 3% and 5% impair of the body water.

Winning is not a victory if you get the specified weight. The point is to develop health mind.

It should be noted that the participant left a few line spaces after the sentence "A loss of 3% and 5% impair of the body water" (*shoo*). It could be that the participant knew more information than in this paragraph was reported, but he/she could not recall the detail and skipped to ten.

4.8 Summary

In this section, the test results were summarized in relation to hypotheses formulated in accordance with previous study results as well as questions formulated for the current study.

**Hypotheses 1:** There is a relationship between recall conditions (immediate and delayed recall) and recall
performance of English as a Second Language (ESL) students with intermediate or above English proficiency attending a university English language program.

As consistent with previous studies by Carrell (1984a) and Meyer and Freedle (1984), the overall immediate recall performance was significantly better than the delayed recall performance. However, when the recall condition was examined by separate language groups (Japanese, Chinese and Korean), the recall condition was statistically significant only for Japanese group. This could be explained by the fact that only 25% of Japanese participants read tightly organized passages (problem/solution or causation) and 40% of them read least organized passage type (collection of description).

**Hypotheses 2**: There is a significant difference in recall among the five types of rhetorical organization of the expository prose (collection of descriptions, causation, problem/solution, comparison and ki-shoo-ten-ketsu) in the reading recalls of ESL readers.

Although there seem to be a tendency that problem/solution and causation passages (more tightly organized passage types) elicit better recall than collection of description (least loosely organized passage type), the current study showed no statistically significant relationship between the text types and the recall
performance of the ESL participants with intermediate and higher English proficiency.

**Hypothesis 3:** There is a relationship between the recall performance and the utilization of the same rhetorical structure as the read text upon organizing written recall protocols.

The results supported the hypothesis and clearly revealed that those who used the original passage structure to organize their written recall protocols were able to remember more information in both immediate and delayed recall tasks.

A noteworthy distinction in the present study compared to Carrell (1984a) is that the number of ESL participants who recognized and utilized the passage structures on their recall protocols was considerably higher in the current study than in Carrell’s study that was performed 20 years ago.

**Hypotheses 4:** There is difference between Japanese, Chinese and Korean language groups’ recall which is related to difference in the rhetorical organization of texts.

First, the effects of language group were statistically significant only in delayed recall. The result showed that the Korean participants recalled more than Chinese and Japanese participants. However, this result might have been affected by the fact that more than half of Korean
participants (54%) read two of the most tightly organized passage (problem/solution and causation) and only 23% of them have read the least organized passage (collection of description). Second, the further investigation of language groups in accordance with passage types showed no statistically significant effect for passage type in any of the language groups.

**Hypothesis 5:** There is a positive relationship between the use of *ki-shoo-ten-ketsu* passage and recall of information for 'Oriental' ESL students compared to the use of the other four types of rhetorical organization namely collection of description, causation, problem/solution and comparison.

Such relationship was not found in the current study. Although previous research claims that *ki-shoo-ten-ketsu* structure to be the preferred rhetorical structure among Japanese, Chinese and Korean, the recall mean score of this passage was the lowest.
5.1 Introduction

In this study, the effect of text structures of expository passages on ESL students' recall performance was examined. Both the methodology and the analysis are based on the previous studies conducted by Meyer and Freedle (1984) and Carrell (1984a). As an additional research component to these previous studies, the current study included ki-shoo-ten-ketsu rhetoric. The structure and possible effect of this type of text is suggested by the study of Contrastive Rhetoric as a culturally preferred rhetorical structure among oriental countries such as Japan, China and Korea.

The central purpose of the current study is to contribute better understanding of the effect of text structures and first language background on ESL students' recall as well as to contribute some insights towards the theory of Contrastive Rhetoric. This research and theory lead to instructional implications that better equip ESL instructors to teach rhetorical organisations to their students to assist in both writing and reading in English.

In this chapter, first the findings from the current study are compared with those of previous studies in terms of similarities and differences. Second, the findings will be discussed in the light of Contrastive Rhetoric, and some insights will be presented. Third, instructional
implications for ESL teachers will be derived from the findings of this study, considering the insights towards Contrastive Rhetoric. Finally, possible directions for further research will be suggested.

5.2 The Findings of This Study

5.2.1 Written recall.

What should be noted first is the performance difference between Carrell's (1984a) participants and those of this study on written recall. Out of 21 maximum points, mean scores of Carrell's study are quite low, ranging from 1.5 to 5.15 across four passage types whereas that of the current study ranges from 7.65 to 11.72. This range is considerably higher than the range of the previous study especially in light of the fact that the additional passage, ki-shoo-ten-ketsu, resulted in the lowest mean scores of all the passage types represented in this study. Although the scoring procedure for recall in this study deviated from that in Carrell, there is no reason to attribute the difference in mean scores to difference in the scoring procedures since the result of the probed recall task between the two studies revealed the same pattern. That is, the participants in this study achieved much higher comprehension scores ($M = 76\%$) than in Carrell ($M = 25.5\%$). However, caution must be exercised in interpreting this result since the scoring procedure of this study was inferred from Carrell (1984a), and a modification was made.
Unlike the results of Meyer and Freedle (1984) and Carrell (1984a), the independent variable, passage type, did not show any overall significant effect on recall of read information. However, there was a general tendency observed from the comparison of mean scores of the passage types in that the more tightly organized passage types (problem/solution and causation) tend to facilitate recall of information from a text than the less organized passage type (collection of descriptions).

With regard to the effect of text structures on recall, the only factor that showed statistical significance in this study was the language factor. Carrell (1984a) also found the effect of language and suggested that the language background of the readers was the possible source of the performance difference between linguistic groups. The current study uncovered a statistically significant language factor for only one group. The implications of this finding are not necessarily indicative of a relevant language effect. It was suggested that the statistically significant performance difference between Japanese and Korean students could be accounted for by the type of passage being read. That is, while it first appeared that Korean participants recalled significantly more information than Japanese participants; a further investigation revealed that actually 54% of Korean had read the tightly organized passages (problem/solution or causation) and only 23% had read the loosely organized passages (collection of description).
contrast, the ratio was 25% and 40% respectively for Japanese participants. This difference in the proportion of each type of passage that was read may explain the performance differences between Korean and Japanese. After all, Carrell (1984a) and Meyer and Freedle (1984) had also noted that the more structured passage types facilitated recall. So the apparent advantage for Korean students may not be language related at all. Rather it may be a confirmation of the recall advantage that results from overtly structured texts. An implication of this conclusion would support the contention that the more highly structured types of text organization generally facilitate retention and retrieval of read information.

The closer investigation of Passage X Language effect on recall in Carrell (1984a) found that the comparison passage along with collection of description passage resulted in significantly lower recall scores amongst Korean and Chinese participants. Although it failed to achieve statistical significance, a similar tendency for lower scores on the loosely organized comparison and collection of description passages was observed in this study as well.

The current study includes a ki-shoo-ten-ketsu passage which was not a part of the previous studies. This structure is on the different scale from problem/solution, causation, and collection of description since the progression of ideas is organized by the function of paragraphs instead of organised on the basis of time or
causality. For this reason, it is challenging to determine how tightly or loosely ki-shoo-ten-ketsu is organised compared to the other four English expository passage types and how effective it is on retention of information of a text. Nonetheless, the results clearly showed that ki-shoo-ten-ketsu was not successful in assisting recall performance in this study. These data lend support to the idea that overtly structured text is more memorable than implicitly structured text.

5.5.2 Protocol Organization

The fact that the utilization of the same passage structure on written recall protocol enabled the ESL students to retrieve significantly more information is consistent with Carrell’s (1984a) finding. Nevertheless, it is very interesting that only 26% (21 of the 80) of Carrell’s ESL participants recognized and used the same top-level structure in their first recall whereas 68% (39 of the 57) participants in this study did so. Although the concept of text structure had not yet been taught to 42 of the 57 participants in the current study at the time of testing, the recognition and utilization of overt text structure was evident in written recall protocol of participants in this study.

This higher ratio of top-level structure recognition and utilization could imply that participants in this study are more familiar with textual organizations of expository
prose than the participants 20 years ago. As a matter of fact, there is a significant shift in English education in East Asian countries over the last 20 years. In the case of English education in Japan in 1980s, the instructional emphasis was on direct translation from Japanese to English on a sentence level focusing on accuracy (Kubota, 1998a). Otagaki (1983), cited by Kubota (1998a), asserts “the fundamental elements of composition, such as organization and persuasion, are ignored” (p. 88) in 80s. Mohan and Lo (1985) report a very similar phenomenon in English education in Hong Kong during the same period. Their investigation revealed that the focus of English education in Hong Kong was sentence correctness rather than organization in writing. By reviewing developmental factors in language writing, Mohan and Lo (1985) state that pedagogical practices with a long focus on sentence-level accuracy are ineffective for improving ESL students' writing ability especially with regard to their organizational skills to create a coherent text.

These concerns in English education have not yet completely permeated into practice, that is, teacher-centred, grammar translation teaching methods are still commonly employed. However, it is true that “the most recent trend [in English education] is to ‘promote logical expressions in writing’ which is thought to be essential in the age of globalization and technological advancement.” (Kubota, 1997, p. 472). This new development and awareness in English
education may have affected students’ knowledge and perceptions in L2 writing.

English as a World Language (Crystal 1997) could be another factor for the explanation of seemingly increasing awareness of text organizations among learners of English in the current study. Indeed, English is seen and used everywhere in daily life throughout the world from international politics to the entertainment industry. The power of English is unstoppable with 1,500 million competent communicators in English along with over a billion foreign English learners in the world (Crystal, 2002). Japan, China, and Korea fall into a category identified as 'The Expanding Circle' of English use, where English is recognized as an important international language and is taught as a foreign language (Crystal, 1997). These countries host a vast number of English learners with further increases each year. Over the last 20 years the opportunity for non-native English speakers to encounter and to interact with English language has literally skyrocketed. This change of exposure is aided by the emergence of advanced technology such as the internet, the improvement in human mobility, the endorsement of a foreign language education, and the fast growth of the English language teaching business (Crystal, 1997). Therefore, the different outcomes of participants in the current study compared with participants in Carrell (1984a) could be attributed to the changes in the access to an
English environment as well as in the educational policies described above.

5.3 Insights towards Contrastive Rhetoric

Despite the claim arising from Contrastive Rhetoric, the supposedly culturally preferred textual organization, ki-shoo-ten-ketsu, was least successful in supporting participants' retention and retrieval of textual information in this study. This finding was not anticipated. There are several possible reasons as to the failure of ki-shoo-ten-ketsu in eliciting recall of information read in the text.

First, the text used in this study, "The Loss of Body Water", is an informational text. Kubota (1997) like other recent authors in Contrastive Rhetoric points out that ki-shoo-ten-ketsu is not entirely appropriate for expository prose where the purpose is to convey information or to persuade readers. Citing Ichikawa (1978), Kubota explains that Japanese expository prose is often organized by introduction, body and conclusion, similar to the English counterpart, the five-paragraph essay. Harama (1997) also raised this issue and described ki-shoo-ten-ketsu as a suitable rhetoric for writing a personal journal, a story, a short novel, a book review, or a poem but not for expository writings. Given this non-expository nature of ki-shoo-ten-ketsu and the nature of the text used in this study, it can be assumed that the structure presented in "The Loss of Body
Water" in ki-shoo-ten-ketsu passage was not inherently helpful for conveying the information in a 'naturally' accessible way to the ESL readers. In this regard, the notion claimed by Contrastive Rhetoric (Connor 1996; Hinds, 1980, 1982) that Japanese expository prose is characterized by a classical style of ki-shoo-ten-ketsu is an over generalized misconception.

Secondly, the shift in educational policies and the environmental change with English as a Global Language described earlier may have influenced how participants responded to ki-shoo-ten-ketsu text structure in this study.

In recent times the teaching of English composition in Japan has emphasized "logical expression" (Kubota, 1997). The instructional promotion and preference for logical expression as opposed to sentence accuracy in L2 composition is evident in a study conducted by Rinnert and Kobayashi (2001) which involved both inexperienced and experienced Japanese EFL student writers as well as both Japanese and native English-speaking EFL teachers. This quantitative and qualitative study investigated how sample expository compositions written in 'American Rhetoric' (deductive) and 'Japanese Rhetoric' (inductive) were perceived by the four groups of readers. The results showed that the concerns of native Japanese EFL teachers for a quality English composition are identical to native English speaking EFL teachers. That is, clear thesis, use of examples, text organization and logical connections.
Kubota (1998) also found that the use of inductive structure characterized by *ki-shoo-ten-ketsu* was not generally preferred as expository or persuasive essay form, and that deductively organized expository prose was often rated lower by Japanese professors.

In addition to the educators' perceptions on expository texts written in deductive vs. inductive rhetoric, Rinnert and Kobayashi (2001) also reported students' perceptions of the characteristics of expository writing. The result showed that the more experienced an individual was in English writing, the closer his/her perceptions became to those of native English writers. Specifically, experienced Japanese EFL students placed an importance on clear thesis statement, text organization and logical connections rather than on grammatical accuracy.

This evidence on preference for text types in expository writing from teachers' as well as students' concerns for features of quality L2 writing leads to a contradiction of an earlier notion of Contrastive Rhetoric that *ki-shoo-ten-ketsu* (inductive and reader-responsible) rhetoric is 'preferred' among oriental culture. It seems clear that for informational texts it is doubtful that the inductive, *ki-shoo-ten-ketsu*, is the preferred text type in the current culture of compositions.

As a matter of fact, Connor (2002) acknowledges the criticism towards Contrastive Rhetoric which assumes a relationship between a particular culture and a particular
rhetoric and suggests a text analysis which considers the influence of World Englishes on "the evolution of patterns and norms" (p. 506) of texts that non-native speakers of English produce.

Nevertheless, it is true that the findings from the recent empirical studies (e.g., Kubota, 1998; Rinnert & Kobayashi 2001) not only challenge the view of writing as cultural phenomena but also lend support to the claims made by a theory of Contrastive Rhetoric to some degree. For example, the inexperienced EFL student writers in Rinnert and Kobayashi's study (2001) showed their preference for expository writing in an inductive style. In addition, Japanese university students in Kubota's study (1998) utilized inductive style to write persuasive texts more often than native English-speaking university students.

Harama (1997) examined seven English compositions written over 36 months by an ESL student with a Japanese university degree (non-English major) and found a textbook case of transfer of the L1 writing convention (KSTK) to L2 expository prose writing. Even though the degree of the transfer lessened over 3 years, traces of the first language rhetorical pattern remained even in the later compositions. Anthony and Hamara (1996) also found that intermediate fluency ESL high school students are able to clearly recognize ki-shoo-ten-ketsu pattern and preferred a passage written in that style to other expository rhetorical organizations.
Evidence for a linguistically preferred text style remains a plausible hypothesis. However, the evidence described above points to a more dynamic and contextually variable interpretation of contrastive rhetoric compared to the earlier formulations of the theory. In the section 5.4, the instructional implications derived from this pro and con arguments on Contrastive Rhetoric will be discussed.

What is most striking about the *ki-shoo-ten-ketsu* passage in the current study is that this textual organization was most often utilized in the written protocols by those who read this text. It was especially remarkable that information in ten was almost always remembered in both immediate and delayed recall sessions. The sudden shift of idea that happens in ten is unique to *ki-shoo-ten-ketsu* and does not exist in English rhetoric; it is this distinctiveness of ten which often results in North American readers' perception of second language writing by oriental students as incoherent and confusing element in a text (Hinds, 1982). The possible reason for the positive effect of ten in this study could be that the participants in the current study who presumably possess the formal schemata of *ki-shoo-ten-ketsu* were familiar with the rhetorical flow. As a result the sudden intrusion of an unexpected sub-theme did not impede their recall of information in ten. In addition, it could be that ten shift is so marked and striking to 'Oriental' readers that it may
have drawn their attention, making the information in ten more memorable.

5.4 Teaching Implications

The success of information retrieval via top-level text structure affirmed the significance of teaching of text structure in ESL education. In this regard, students need to be taught not only to recognize expository text structures but also to utilize them as an instrument for better reading comprehension. From this study and previous studies, it is apparent that the systematic process of retrieval of information via top-level text structure is highly effective for retrieval of information from a text when reading.

The participants with advanced English proficiency reflected the top-level structure more than the participants with intermediate English proficiency level. In addition, these participants with advanced English proficiency had been already taught about text structures in their ESL classes. It may be assumed that skills in reading recall were enhanced through teaching and sensitivity to top-level text structures. The question here is when to introduce the concept of text structure in the course of ESL education.

Mohan and Lo (1985) examined research findings on developmental factors in both first and second language learners' writing and affirm the inefficiency of composition instruction with an unnecessarily longer emphasis on
beginning-level sentence skills that neglects the development of discourse strategies. Although the inappropriateness of traditional grammar and usage-oriented teaching have been emphasized over the last 20 years and drastic change in English Education policy has recently been implemented in Japan, China and Korea, the reality is the continuous existence of a gap between the policy and practice (Nunan, 2002). Most Asian ESL students who attend an ESL program abroad, operated by a university such as the institution in the current study, have already been studying English for years in the school system of their home country, and their English education has been focusing largely on grammatical accuracy and sentence building. Therefore, it is suggested that text structure be introduced before upper intermediate level because 1) longer instruction that emphasizes sentence skills impedes the development of discourse strategies; and 2) Asian ESL students are ready for discourse study upon starting a ESL program. Moreover, such early introduction could make a variety of texts accessible early on to ESL students by equipping them with a useful tool to read and write English, which consequently could facilitate learning English much faster and effectively.

Another implication arose from this study is the importance of instruction on the use of appropriate genre to match a purpose of a text. This could be done by comparing passages such as the ones used in this study to facilitate a
discussion regarding the effectiveness of each type and the
influence that each type exert on readers. When such
comparison of text types is utilized, ESL instructors should
be cautious about to not rank them but to focus on the
functional aspect of the text. For example, denying an
inductive style such as ki-shoo-ten-ketsu by placing the
deductive style on top of the created rhetorical hierarchy
could eventually lead to a conflict between the
intelligibility demanded by an academic world and an
identity of a student with a linguistic background other
than English (Crystal, 1997; Kubota 1999). Instead, the
comparison of text types should be performed as an
investigation of how a particular text structure serves a
particular genre of writing. This type of exercise could be
very effective and valuable for ESL students especially if
they are planning to enter into the discourse of a Western
academic world.

As to insights gained towards Contrastive Rhetoric in
this study, the several implications also arose for ESL
education.

Since the notion of Contrastive Rhetoric was suggested
by Kaplan in 1966, numerous studies have been conducted,
supporting as well as questioning the views of the theory.
Kaplan (1988) claims that Contrastive Rhetoric never
intended to be a teaching system but to be an input for
reading and writing pedagogy. Yet, Contrastive Rhetoric has
undoubtedly become 'the system' to a certain extent and
continues to play a significant role in ESL as well as first language education especially in the genre approach to teaching composition.

Although contributions and educational implications made by Contrastive Rhetoric theory should not be dismissed and the knowledge of Contrastive Rhetoric could indeed help ESL educators to better understand their student’s behaviour in English compositions, instructors should also be aware of its drawbacks--the danger and misconception that the overgeneralizations, categorization and labelling could bring (Spack 1997; Zamel, 1997).

Although there exists a classical rhetorical form in Japan, China and Korea, this writing convention should not be automatically perceived as ‘preferred’ type among students from these countries. Their perceptions of expository text differ with a degree of exposure and experience with English language. In other words, the more a student is exposed and experienced with English, the closer his/her perceptions come to those of native-English speakers. Therefore, knowing about each student educational background, such as a kind of English language instruction that the student was exposed to, would greatly help ESL instructors to determine the needs of the student as an individual instead of a collective cultural group.
5.5 Future Research Suggestions

First, this study involved a small number of participants who were not randomly selected. Replication of this kind of study with larger number of participants will be needed for generalizable results. Such research will more convincingly resolve the question of effects from text, proficiency and first language.

Second, given that ki-shoo-ten-ketsu is not a desirable rhetoric for informational or persuasive texts, it would be interesting to examine its effect on ESL students' retention and retrieval of what they have read, using a different topic rather than "Loss of Body Water". For example, one might use an informational narrative style of text such as is commonly found in school textbooks, rather than formally structured exposition. In such a comparison the use of inductive style would not contrast so starkly and it may lend even further light to the more subtle influences of cultural rhetoric in text comprehension.

Third, Asian countries such as Japan, China and Korea have been undergoing drastic educational policy change, especially in English education. Provided that policy is running ahead of practice in reality, many schools in a public sector are in their transitional phase. Probably 20 years from now, it would be fascinating to examine the texture of students through replication of this kind of study--students who supposedly come out of the new educational system when the policy is indeed at work, and
the World English gains even more power. Once Crystal (1997) wrote:

In 1950, the case for English as a world language would have been no more than plausible. Fifty years on, and the case is virtually unassailable. What happened in this fifty years—a mere eye-blink in the history of a language—to cause such a massive change of stature? (p. 63)

If 50 years is a mere eye-blink in the history of a language, 20 years is not even an eye-blink. Changes that 20 years could bring to English education and language abilities of English learning people are inestimable and immeasurable. Therefore, it is a duty of researchers and educators to keep open-minded and to continuously perform re-examination and evaluation of even well established theories and teaching practices so that we could strive to deliver the best possible education to our students.


Harama, H. (1997). A Longitudinal study of linguistic and rhetorical development in the academic writing of a Japanese ESL student. The University of Victoria, Victoria, B.C.


Appendix A

An Example of ki-Shoo-Ten-Ketsu Text Written as English Expository Prose

An earthquake is the explosion of the angry ground. It is very difficult to predict and comes from deep under the surface.

One kind of earthquake is caused by the gradual building up of stresses within rocks under the surface of the Earth. These forces are so great that "solid" rock gradually bends or stretches. This distortion of the rocks stores a lot of energy like a wound up spring. When the forces are finally greater than the strength of the rock, the rock will snap. This results in the sudden release of the stored energy. Waves of energy spread out from the break causing the Earth's surface to vibrate. The greater the energy of the vibration, the greater the disaster. As the quaking continues, buildings are broken apart and crash to the ground. Sometimes many small earthquakes reduce the possibility of a big earthquake. The energy would be released gradually with frequent earthquakes and the snapping movement of the earth would be less disastrous.

This is very much like when people get angry. Usually there is some underlying cause for anger, while on the surface we try to be calm. However, if the stress becomes too great, the anger breaks out. As the anger spreads a lot of damage is caused. Relationships, belongings even people can be hurt from an eruption. So sometimes it is better to release anger gradually before bursting.
If a violent explosion happens, it seems that we can do nothing about it. We just wait until the shaking stops then try to recover from the damage.

Reproduced from the study of Anthony & Harama (1996)
Appendix B

Letter of Informed Consent Form for the Participant

Dear Participant,

The Effect of Text Structure on ESL Student’s Recall of Textural Information

You are being invited to participate in a study entitled “The Effect of Text Structure on ESL Student’s Recall of Textural Information” that is being conducted by Akiko Hayashi. Akiko Hayashi is a graduate student in the Department of Curriculum and Instruction in Education at the University of Victoria and you may contact her if you have further questions by calling (250) 592-0847 or emailing at ahayashi@uvic.ca.

As a graduate student, I am required to conduct this research as part of the requirements for the degree of Master of Education. It is being conducted under the supervision of Dr. Robert Anthony. You may contact my supervisor at (250) 721-7780 or ranthony@uvic.ca.

The purpose of this research project is to determine the effect of text structure on recall. Specifically, the study will examine which of five text structures: collection of descriptions, causation, problem/solution, comparison, or ki-shoo-ten-ketsu enables ESL learners to recall information in greater detail.

Research of this type is important because it could provide evidence for selecting particular text structures for more detailed instruction with particular groups of students. It will also identify the role of text structure analysis for reading comprehension.

You are being asked to participate in this study because you are a post-secondary student who is learning English-as-a-Second-Language at English Language Centre for minimum 1 month and maximum 2 years, and because you are at an intermediate level or above.

If you agree to voluntarily participate in this research, you will be asked to participate in 2 sessions. The second session will be held 2 days after the first session.

At the first session, you will (1) read a short passage, (2) write down everything that you remember with your own words or words from the text, trying to write in complete sentences and to show how the ideas from the text were related to each other, and (3) complete 10 multiple choice questions about the text you read.
Participation in this study may cause some inconvenience to you because of the time spent to participate, 30 minutes per session.

There are no known or anticipated risks to you by participating in this research.

The potential benefits of your participation in this research includes raising your awareness of text structures, which may help you in writing and reading. The awareness of text structures may help you prepare for future academic study.

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study, your data will be destroyed and not used in any way.

In order to assure myself that you are continuing to give your consent to participate in this research, I will remind you, before each session begins, that you can withdraw anytime if you wish. All the information obtained will be kept confidential and your identity will not be revealed in any way.

In terms of protecting your anonymity, your names will not be used in the study, and no one will be able to identify individual results.

Your confidentiality and the confidentiality of the data will be protected by securing the data in a locked drawer at my home. I am the only person who will be able to access the information from the drawer, and all the data will be held in confidence. There will be another scorer involved in the study to establish inter-rater reliability of scoring; however, this person will not have access to any identifying information and will not be able to know who you are through scoring.

All of the data gathered from you will be destroyed when the project is accepted.

It is anticipated that the results of this study will be surveyed by Dr. Robert Anthony and Dr. Eliza Churchill in the Department of Curriculum and Instruction in Education, who are my supervisory committee members.

In addition to being able to contact the researcher and the supervisor, Dr. Robert Anthony, at the above phone numbers, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Associate Vice-President, Research at the University of Victoria (250-472-4362).
Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researcher.

Name of Participant  Signature  Date

A copy of this consent will be left with you, and a copy will be taken by the researcher.
Appendix C

Reading Passage (Collection of Description)

Date: ________________________________

Name: ________________________________ Male / Female

First Language: ____________________________

Years of English education: Elementary school  
Junior high school  
High school  
University / College  
English speaking country

INSTRUCTION

Imagine that you saw a passage in a magazine, and you are interested in the topic of the passage.

Please read the passage below at your own reading pace to find out about the topic.

While you are reading, if you find a word that you don’t know, please circle the word.

PASSAGE

Several aspects of the loss of body water will be discussed. First, athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

Second, the loss of body water sustained by a 150-pound individual each day is three pints of water.

Third, loss of body water impairs cardio-vascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.
Reading Passage (Causation)

Date: ____________________________
Name: ______________________________ Male / Female

First Language: ______________________

Years of English education:  
- Elementary school
- Junior high school
- High school
- University / College
- English speaking country

INSTRUCTION

Imagine that you saw a passage in a magazine, and you are interested in the topic of the passage.

Please read the passage below at your own reading pace to find out about the topic.

While you are reading, if you find a word that you don't know, please circle the word.

PASSAGE

It is true that athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

As a result, tragedies are unwittingly caused by the coaches who require this loss of body weight in these situations. These tragedies occur due to the fact that the loss of body water impairs cardio-vascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.
**Reading Passage (Problem/Solution)**

Date: ____________________________

Name: ____________________________ Male / Female

First Language: ____________________________

Years of English education:  
- Elementary school  
- Junior high school  
- High school  
- University / College  
- English speaking country

**INSTRUCTION**

Imagine that you saw a passage in a magazine, and you are interested in the topic of the passage.

Please read the passage below at your own reading pace to find out about the topic.

While you are reading, if you find a word that you don't know, please circle the word.

**PASSAGE**

A serious problem is that athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

A solution to this problem is for school administrators to suspend coaches who require athletes to lose body water. This step must be taken due to the fact that the loss of body water impairs cardio-vascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.
Athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes' usual weights.

In contrast to the action taken by coaches, the American medical association strongly condemns the loss of body water for athletes. They condemn loss of body water due to the fact that the loss of body water impairs cardiovascular functioning, which limits work capacity. More specifically, a loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.
INSTRUCTION

Imagine that you saw a passage in a magazine, and you are interested in the topic of the passage.

Please read the passage below at your own reading pace to find out about the topic.

While you are reading, if you find a word that you don’t know, please circle the word.

PASSAGE

Athletic coaches frequently require wrestlers, boxers, judo contestants, karate contestants, and football team members to lose body water so that they will attain specified body weights. These specified weights are considerably below the athletes’ usual weights. What damage will happen?

A loss of three percent of body water impairs physical performance and a loss of five percent results in heat exhaustion. Moreover, a loss of seven percent of body water causes hallucinations. Losses of ten percent or more of body water result in heat stroke, deep coma, and convulsions; if not treated, death will result.

Winning is not the victory if you are risking your health. An important point is to develop healthy mind and body through practice.

Loss of body water impairs cardio-vascular functioning. Therefore, coaches who require athletes to lose body water should be suspended.
Appendix D

Written Recall Protocol

Date: __________________

Name: _______________________

Write down everything that you remember.

You can use your own words or words from the passage.

Please try to write in complete sentences and NOT just to list isolated words or ideas.
Appendix E

Multiple choice questions

1. Athletes loose body water because
   (a) it helps them compete
   (b) it helps heal injuries
   (c) athletic coaches tell them to
   (d) doctors tell them to

2. Loss of body water as part of training is required of
   (a) wrestlers, boxers and runners
   (b) wrestlers, judo contestants and swimmers
   (c) baseball team members, karate contestants, and
      judo contestants
   (d) wrestlers, boxers and football team members

3. Loss of body water is required because athletes have to
   (a) move quicker
   (b) attain specified body weights
   (c) gain muscles
   (d) expand work capacity

4. Athletes’ particular body weights for competition are
   (a) lower than their usual weights
   (b) lower than normal people’s weights
   (c) higher than their usual weights
   (d) higher than normal people’s weights

5. Loss of body water damages
   (a) cardio-vascular functioning
   (b) muscle strength
   (c) eye sight
   (d) healthy skin

6. A loss of 3% of body water impairs
   (a) blood circulation
   (b) heart functioning
   (c) mental performance
   (d) physical performance

7. A loss of 5% of body water results in
   (a) heat stroke
   (b) hallucinations
   (c) heat exhaustion
   (d) headache

8. A loss of 7% of body water causes
   (a) dizziness
   (b) hallucinations
   (c) heat exhaustion
   (d) deep coma
9. A loss of 10% or more of body water results in
   (a) heat stroke, deep coma, and convulsions
   (b) heat stroke, deep coma, and hallucinations
   (c) hallucinations, deep coma, and heat exhaustion
   (d) hallucinations, heat exhaustion and convulsions

10. If not treated, loss of body water results in
    (a) brain damage
    (b) death
    (c) hearing loss
    (d) heart attack