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The Effect of Interesting Text on the Reading Comprehension of Korean College EFL Students: A Comparison of Seductive Details and Interesting Elaborations

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The Effect of Interesting Text on the Reading Comprehension of Korean College EFL Students: A Comparison of Seductive Details and Interesting Elaborations

by

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Dedication

To my God and my family
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Although a rich and contentious literature has addressed the effect of interest on readers’ comprehension processes, nearly all of this work has dealt with reading in one’s native language. Thus, much remains to be determined to understand whether and how text interest would affect foreign and second language reading processes.

This study examined the effect of two different kinds of interesting details (seductive details and interesting elaborations) on EFL (English as a foreign language) reading comprehension for Korean college students. Two other variables, proficiency level (higher and lower) and gender (male and female), were also tested for their effect on L2 reading comprehension, alone and in interaction with the effect of text types (baseline, seductive details version, and interesting details version). Recall protocols (recall of common ideas, main ideas, and non-main ideas) were used as a measure of reading comprehension.
Participants were 118 Korean college students who were learning English as a foreign language. They completed a reading proficiency test and a prior-knowledge test before reading and recalling ideas from an expository text about Linus Pauling and Vitamin C.

Results of a MANOVA indicated that seductive details interfered with Korean college EFL readers’ recall of common ideas and main ideas, confirming past research showing the interference effect of seductive details. However, results also indicated that interesting elaborations, which were designed to be more important in the text, were not significantly beneficial to EFL reading comprehension when compared to the baseline text. Proficiency level had a significant effect on every dependent measures while gender did not.

There were two interaction effects of text type by proficiency level and text type by gender on the recall of common ideas. While the performance of lower proficient readers was better when they read a text version including interesting elaborations than when they read a version with seductive details, higher proficient readers did not show any performance difference between the two text types. Also, male students recalled more of common ideas when they read the EL text version than when they read the SD text version. Female students, however, showed no performance difference between the two text versions. Discussion and practical implications are also presented.
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CHAPTER 1
INTRODUCTION

It is generally believed that interesting texts, as compared to non-interesting texts, are more likely to draw readers’ attention and to be recalled more or comprehended better by readers. Interestingly, such a belief has been contradicted by research showing that interesting parts within a text may draw readers’ attention away from the important points of the text and obstruct readers in retaining main ideas from the text. In other words, interesting segments may interfere with readers’ text comprehension rather than facilitating learning from the text. And yet, it may be that interesting segments may help readers recall the main points of a text if the interesting segment is associated with the main idea of the text.

There have been many studies about the effects of interesting details on the recall of main ideas. For example, several studies have focused on the *seductive detail effect*, in brief, the situation in which interesting information “seduces” a reader’s attention away from important information, as will be explained shortly. Some studies indicated that *seductive details* as a type of interesting material interfere with recall for “non-seductive,” relatively more important information than the “seductive” text segments or with the learning of main ideas (Garner, Gillingham & White, 1989; Wade & Adams, 1990; Wade, Schraw, Buxton & Hayes, 1993). Other studies, however, maintained that seductive details do not necessarily interfere with text comprehension (e.g., Goetz & Sadoski, 1995). There is still a considerable debate about the overall effect of seductive details in L1 (English as a Native Language) reading. Before
discussing how this debate may bear out in considerations of L2 or ESL/EFL (English as a Second/Foreign Language) reading, I want to define and detail what is meant by seductive details.

Seductive details have been defined as text segments that are not important relative to the main idea of the text but are very interesting compared to the other text segments within a reading passage. Researchers who have claimed that seductive details interfere with the learning of main ideas have based their claims on the assumption that interestingness draws the readers’ attention away from the main ideas. However, this effect may depend on the author intending to seduce the readers’ attention away from focusing on the main ideas of a text, even though the original intention is to make readers enjoy the text more and recall or learn more from the text by inserting some interesting segments into the text.

Seductive details are, by nature, ideas that are not important relative to the main idea of the text. Therefore, they are more likely to affect negatively the recall of main ideas from the text by readers. That negative effect, called the “seductive details effect” among many L1 reading researchers, has received quite a bit of attention from L1 studies. By contrast, few studies have ever addressed the effect of interestingness as a textual feature on reading comprehension or recall in L2 reading research.

There have been a few studies in L2 reading that examined how readers’ interest in the text topic affected their reading comprehension. LeLoup (1993) investigated the relationship between the level of readers’ interest in passage content and their reading comprehension level for American secondary students learning SFL (Spanish as a
According to his study, L2 readers comprehended significantly more information in passages for whose topics they had a high interest level whereas a low interest level in topics impeded comprehension. Carrell and Wise (1998) investigated the relationship between readers’ prior knowledge and topic interest in L2 reading comprehension. Prior knowledge and topic interest did not reach significance on their own effect on ESL learners’ L2 reading comprehension because of their significant interaction with each other.

However, a distinction needs to be made between topic interest and text-based interest (that is, the interestingness of a text). Topic interest refers to the level of personal (or individual) interest that a reader has for the topic of a text and text-based interest is a kind of situational interest that is invoked by a particular situation. Hidi (1990) defined the distinction between individual interest and situational interest by reviewing contemporary interest research. According to her distinction, while individual interest focuses on individual differences learners bring to their learning, situational interest focuses on environmental factors in which most learners are likely to become interested. Therefore, interest is a construct made up of both individual and situational interest.

There has been another line of research in L2 on the effect of textual feature (input modification) on L2 reading comprehension. Some studies (Horiba, 1996; Oh, 2001; Yano, Long, & Ross, 1994) examined the effects of two types of input modification, simplification and elaboration, on L2 reading comprehension. Yano et al. (1994) found that comprehension was highest among L2 learners reading the simplified
version but was not significantly different from those reading the elaborated version. Oh (2001), however, found in her study that L2 readers who read the elaborated text performed significantly better than those who read simplified text, regardless of their proficiency level.

Although the aforementioned two lines of research involved L2 reading comprehension, the first one did not focus on text-based interest but on the relationship between readers’ interest and prior knowledge in reading comprehension, or what Hidi would call the effect of readers’ personal interest on reading comprehension. In other words, the first line of research approached interest from the readers’ perspective, not from the text’s perspective, though it addressed the role of interest as an emotional factor in L2 reading comprehension. Also, the second line of research has used the term elaboration in contrast with simplification in terms of their effect on reading comprehension. Thus, these studies usually involve a focus on the complexity of the linguistic form: vocabulary or syntax.

However, no studies so far have addressed the effect of text-based interest (that is, interestingness) on L2 reading comprehension, despite a great deal of research on L2 reading comprehension. Therefore, the present study was intended to fill this gap by examining whether and how text-based interest affected L2 reading comprehension especially for Korean EFL college students. More specifically, this study investigated the relative effect of interesting details (seductive details vs. interesting elaborations) on L2 readers’ recall of ideas from the text.

In most of the L1 reading research, only seductive details have been considered
as interesting details. As described above, seductive details refer to text segments that are not important relative to main idea of the text, though they are highly interesting. In this study, however, another kind of interesting details was posited and included, that is, *interesting elaborations*. While seductive details are not important relative to the main idea of the text, interesting elaborations are of high importance relative to the main idea of the text. Accordingly, interesting elaborations were defined in this study, as “text segments that are highly important relative to the main idea and that are the most interesting within a text as compared to other segments in the text.”

In addition to the effect of text types, that is, baseline (BA) version, seductive details (SD) version, and interesting elaborations (EL) version, I also examined whether L2 readers’ reading proficiency level affected the readers’ recall of ideas, alone and in interaction with the effect of text types. Gender effects were also examined. According to many L1 and L2 reading research, readers’ prior knowledge has been thought to contribute significantly to reading comprehension. However, readers’ prior knowledge was controlled for in this study by selecting an unfamiliar text as a reading passage, because the effect of prior knowledge was not the main focus of this study.

Finally, in this study, reading comprehension was measured in ways that reflected how it has been operationalized in past research. Free recall, summary, multiple-choice test, short-answer questions are some examples of reading comprehension test measures that have often been used in previous research. In most cases, however, a single measure was used for reading comprehension test. In this study, reading comprehension was measured from three different angles. That is, free
recall was used to see how readers comprehended the contents of a whole text. In addition, main idea recall and non-main idea recall (short-answer questions) were used to see how well readers understood the main points and details of the text.

In summary, the main purpose of the present study was to investigate the effect of two kinds of interesting details (seductive details and interesting elaborations) on Korean college EFL readers’ recall of the ideas from an English expository text. More specifically, I examined whether seductive details would interfere with L2 readers’ recall of ideas from the text and whether interesting elaborations would facilitate L2 readers’ recall of ideas from the text. In other words, I was interested in whether interesting elaborations would be considered to be a distinct type of interesting details relative to seductive details. Another purpose of this study was to investigate whether there would be any significant difference between higher proficient EFL readers and lower proficient EFL readers and between male readers and female readers on recall scores of three different ideas (common, main, and less important) and how those three independent factors (that is, text type, proficiency level, and gender) would interact in explaining the comprehension performance of Korean EFL college students.

Research questions

The following research questions were addressed in this study.

1. Does the seductive details effect, which is believed to exist in L1 reading, exist in L2 reading as well? If it does, how will seductive details affect L2 reading
2. If seductive details interfere with L2 reading comprehension, would interesting elaborations facilitate it, as compared with seductive details?

3. How will proficiency level and gender affect L2 reading comprehension, as main effects and in interaction with the effect of interesting details?

Hypotheses

The following six hypotheses were tested in order to address the above research questions.

1. There will be an effect of text type on Korean college EFL readers’ recall of the ideas from the text such that (a) seductive details will interfere with their recall of ideas from the text, and (b) interesting elaborations will facilitate their recall of ideas from the text.

2. Proficiency level (higher and lower) will affect Korean college EFL readers’ recall of ideas from the text.

3. Gender (male and female) will affect Korean EFL readers’ recall of ideas from the text.

4. The effect of proficiency level (higher and lower) on Korean college EFL readers’ recall of ideas from the text will differ across male and female readers.

5. The effect of interesting details (SD and EL) on Korean college EFL readers’ recall of ideas from the text will be different across more proficient readers and less
proficient readers.

6. The effect of interesting details (SD and EL) on Korean college EFL readers’ recall of ideas from the text will be different across male readers and female readers.

Definition of key terms

*Interesting details*: text segments that were inserted into the text and intended to make the text more interesting and enjoyable. Seductive details and interesting elaborations were used as two types of interesting details in this study.

*Seductive details*: highly interesting segments that have a very low importance relative to the main idea of a text, as compared with other segments in the text. A type of interesting details.

*Interesting elaborations*: highly interesting segments that have a very high importance relative to the main idea of a text, as compared with other segments in the text. A type of interesting details.

*Seductive details effect*: the cognitive consequences of adding seductive details to a text.

*Topic interest*: the level of personal (or individual) interest that a reader has for the topic of a text. This is referred to as individual interest.
Situational interest: the level of interest of a particular learning situation. This is referred to as the conditions or objects in a particular learning environment that encourage a learner to interact with the environment. Interestingness of the text is considered as a kind of situational interest in this study.

Interestingness: a text-based predetermined level of interest. This is a measure represented by a rating score on a 7-point Likert-type scale (from 1, not at all, to 7, very much). This is referred to as situational interest.

Reading comprehension: a process that is measured by three types of recall scores: recall scores for common ideas, main ideas, and non-main ideas of a text. Reading comprehension usually refers to the amount of understanding readers have when they read the text. That is, it represents how well readers understood the implicit and explicit meaning of the contents of the text they read. In this study, following the work in the field, reading comprehension is referred to as how much readers actually remember and recall of the common, specific, and main ideas from the text they read. Therefore, in this study, readers’ failure to recall ideas from the text was taken to mean that they did not understand the ideas fully.
CHAPTER 2
REVIEW OF THE LITERATURE

In this chapter, relevant literatures are reviewed on the following topics: (a) interest and reading comprehension in L1, (b) interest and reading comprehension in L2, (c) the effect of seductive details, and (d) the role of elaboration on comprehension (or recall).

Research on the effect of interest on reading comprehension in L1

For children

There have been many studies about the effect of readers’ interest on their reading comprehension. Some studies (Asher, 1979; Asher, & Markell, 1974; Asher, Hymel, & Wigfield, 1978; Bewley, 1988; Bracken, 1982; Cecil, 1984; Shnayer, 1969; Stevens, 1980a, 1980b; Williams, 1983) have suggested that interest affected comprehension. Other studies (Brooks, 1972; Feldmann & Blom, 1981; Holliday, 1989; Scholtz, 1975; Townsend & Townsend, 1990), however, did not evidence a positive relationship between interest and reading comprehension.

As an early study on the effect of interest on reading comprehension, Stanchfield (1967) investigated how high-interest materials affected 1st grade students’ reading achievement. The result indicated that the students in the experimental group who read the high-interest materials performed better on a comprehension test than those in the control group.
In the following years, Shnayer (1969) examined the relationship between interest and reading comprehension through the performance of 6th-grade students who were divided into seven ability groups. Each group read material with readability scores two grades higher than the group’s mean reading ability. They rated the selections according to degree of interest and answered questions designed to measure comprehension. Results indicated that high interest produced greater comprehension. The effect, however, differed across students’ reading ability. High ability students were less affected by reading interest than low ability students. Thus, the discrimination between good and poor readers had more accuracy in low content interest than high content interest.

In a series of research on the effect of sex differences and interest on reading comprehension, Klein (1970, 1979) determined that female readers were more influenced by their interest than male readers for fifth and sixth graders. They reacted differently to the same reading material. The girls appeared to learn as much as the boys when reading male-appropriate subject matter and comprehended significantly more when reading female-appropriate material, whereas the reverse was not true. Thus the findings argued for sex-appropriate reading material whose topics were interesting to each gender respectively.

Estes and Vaughan (1973) directly assessed fourth grade students’ interest using an individual ranking system, compensating for the drawback in previous studies in which interest had been externally determined. The students’ comprehension scores were significantly different for high-interest and low-interest materials. This study,
therefore, supported the hypothesis that interest is an influential and potent factor in determining reading comprehension.

Soon after, Asher and Markell (1974) examined the effect of sex differences in fifth graders’ comprehension of high- and low-interest reading material, like Klein had done a few years before. Students’ interests were assessed using picture-rating technique. They then read material that corresponded to their high- and low-interest areas. The cloze procedure was used as a comprehension measure. Results indicated that boys and girls did equally well on high-interest material, but boys, as compared to girls, were significantly poor in low-interest material. Therefore it seemed that boys were affected more by interest than girls on reading comprehension.

Vaughan (1975) was interested in the differential effect of interest on reading comprehension among three reading ability groups and across four grade levels (4th, 6th, 8th, and 11th grades). Results indicated that less able readers were significantly more affected by the level of interest than better readers. In addition, reading ability made a significant difference in reading comprehension at each grade level.

A few years later, Asher and his colleagues (Asher, 1979, 1980; Asher et al., 1978) made a considerable contribution to our understanding of the effect of interest on reading comprehension. Asher (1979, 1980) pointed to the overall effect of interest on reading comprehension for 5th graders. According to his 1979 study, no significant differences were found for race in the impact of interest on reading comprehension, although black children comprehended less on the whole than their counterparts. Also, regardless of their race, the children comprehended better the readings designated as
high interest than those as low interest.

In Walker, Noland, and Greenshields (1979) and Bracken (1982), it was determined that high content interest had a negligible effect on high ability readers but had a greater impact on average and below average readers as had been shown by Shnayer (1969). However, in Stevens (1980a), lower and middle ability students were not affected by varying interest conditions.

Forty 4th-grade students (20 poor and 20 average readers), in Bracken (1982), were randomly assigned to two different reading conditions: standard stories (low-interest material) and personalized stories (high-interest material). They then answered 30 comprehension questions. Results indicated that poor readers comprehended more information when they read personalized stories as opposed to standard stories, but no difference was found among the children of average reading ability on comprehension scores.

Williams (1983) also investigated the effects of topical interest on the reading comprehension for children. Ninety 5th level readers were divided into two groups: one was interested in sports (sports-positive) and the other one was not (sports-negative), based on the Student Interest Survey. Each student was then tested with two informal reading inventories: the Sport Preferential Informal Inventory (SPIRI) and the Temple University Informal Reading Inventory (TUIRI). Fifth, sixth, and seventh level passages were read. It was assumed that the SPIRI were of high interest to the sports-positive group and of low interest to the sports-negative group while the TUIRI was of neutral interest to both groups.
Results indicated that high-interest materials enhanced comprehension among sports-positive students in general comprehension at all three text difficulty levels (5th, 6th, and 7th level passages). Neutral-interest materials produced no performance differences between the groups. Likewise, Cecil (1984) also showed the positive effect of topic interest on children’s reading comprehension. Even early readers (2nd graders) scored significantly higher (p<.01) in literal comprehension when interest in the content was high than when it was low. In Bewley (1988), only boys attained significantly higher reading comprehension scores on the story in which they had interest.

However, many studies have failed to show the positive effect of interest on reading comprehension for children. For example, Brooks (1972) found no significant relationship between a reader’s interest in a passage and his level of comprehension of it for average-ability 6th grade boys. Their degree of interest did not influence their degree of comprehension. The author suggested that factors other than interest might have been significant in determining comprehension. Scholtz (1975), examining 110 5th graders, found that children’s expressed interest was not a factor that affected reading comprehension. Their interest patterns did provide information as to what they would read but were not significant in determining the level of reading comprehension.

Feldmann and Blom (1981), exploring the relationship of interest in story content, external incentives, and reading level to elementary school children’s reading performance, found that interest in story content did not appear to be a significant factor in reading comprehension, while external incentives enhanced reading performance for average as well as below-average readers. Also, in Townsend and Townsend (1990)
and Holliday (1989), interest in reading material did not determine comprehension of that material for school children.

More recently, O’Sullivan (1997) examined 60 preschoolers’ beliefs about the relationship between effort, interest, and recall and their actual effort deployment and recall under different levels of interest as well. Although the preschool children believed that recall increases with effort and interest, their recall was superior in the low-interest condition, not in the high-interest condition, contrary to their beliefs. Interest level did influence their effort deployment during study, but the results turned out to be quite different than they had expected.

In summary, numerous researchers have studied the effect of interest on children’s reading comprehension to find a positive effect on the one hand, and a negative effect on the other hand. Relatively more studies have provided a positive relationship between interest and reading comprehension (Asher, 1979, 1980; Asher & Markell, 1974; Asher et al., 1978; Anderson, Mason, & Shirey, 1984; Anderson, Shirey, Wilson, & Fielding, 1987; Bewley, 1988; Bracken, 1982; Cecil, 1984; Estes & Vaughan, 1973; Klein, 1970, 1979; Shnayer, 1969; Stanchfield, 1967; Stevens, 1980a, 1980b; Vaughan, 1975; Walker et al., 1979; William, 1983), while several studies have found a negative or no relationship between them (Brooks, 1972; Feldmann & Blom, 1981; Holliday, 1989; O’Sullivan, 1997; Scholtz, 1975; Townsend & Townsend, 1990).

Among the above studies, some have found sex differences in the effect of interest on reading comprehension (Anderson et al., 1984; Asher, 1980; Asher & Markell, 1974; Bewley, 1988; Klein, 1970, 1979). All of these studies have demonstrated that
male students were more affected by the level of interest than female readers, except for a series of studies by Klein (1970, 1979). For the differential effect of interest, some researchers have determined that higher reading ability students were more affected by interest (Stevens, 1980a, 1980b) and others have found the reverse (Bracken, 1982; Shnayer, 1969; Vaughan, 1975; Walker et al., 1979).

For (young) adults

Compared to the number of studies conducted with children as participants, a relatively smaller number of studies have investigated older readers for the effects of interest on reading comprehension. As in the case with children, adults were also affected by interest in their reading comprehension. While a positive relationship between interest and reading comprehension was found in some studies (Albano, 1992; Baldwin, Peleg-Bruckner, & McClintock, 1985; Belloni, 1978; Bernstein, 1955; Burnette, 1998; Lanzafame, 1998; Wade & Adams, 1990; Wade et al., 1993; Sadoski, 2001; Schraw & Dennison, 1994), other studies demonstrated a negative relationship between them (McDaniel, Waddill, Finstad, & Bourg, 2000; Shimoda, 1993).

As one of the earliest researcher on the relationship between interest and L1 reading comprehension, Bernstein (1953) examined 9th grade high school students to see how their reading comprehension was affected by an interesting story. Students read a high interest and a low interest story. They then filled in interest rating scales and took a comprehension test including objective and free response questions. Results
indicated that the students performed significantly better on the test of reading comprehension for the high interest story. These results supported the hypothesis that high interest was associated with superior reading comprehension.

After a long hiatus, Belloni (1978) examined how interest affected reading comprehension for low-achieving 7th graders. Results showed that low-achieving seventh-grade students scored higher on a cloze test on highly interesting material than on low-interest passages. By contrast, Baldwin et al. (1985) investigated the effect of interest for high-achieving 7th and 8th graders. Participants completed a 10-item interest inventory and then read passages and took multiple-choice comprehension tests for which they had various combinations of high and low prior knowledge and topic interest. Results showed a significant main effect for topic interest and indicated that boys were more influenced by topic interest than girls.

Wade and Adams (1990) investigated two characteristics of texts (structural importance and text-based interest) in terms of their effect on what students remember from their reading. After sentences in a biographical text were rated by college students for interest and importance, four categories of sentences were established through the first experiment: 1) high importance/high interest, 2) high importance/low interest, 3) low importance/high interest, and 4) low importance/low interest. Next, a second group of college students recalled the sentences immediately or one week later after reading the passage. Interest had a powerful effect on recall for good and poorer readers, so the first and third categories of sentences (that is, high interest sentences) were best remembered.
In another study, Wade and her colleagues (1993) examined strategic reading behavior for a text varying in interest. In experiment 1, college students read a passage of text one sentence at a time and recalled information in writing. Information previously rated as interesting by another group of college students was recalled better than was uninteresting information. In experiment 2, another group of college students read the same text in manuscript form, and completed recall tasks. In an interview regarding their reading strategies, they reported using criteria of importance and difficulty to decide how to allocate their time and effort, except when it came to interesting details. For those details, the college students were less aware of their reading strategy.

In an attempt to explore the effect of interest on reading comprehension and written discourse, Albano (1992) conducted a study in a middle school on Long Island among 7th grade students who were classified as average English students. The students read three novels during the course of the year and rated their interest level in each novel on a Likert scale. They then wrote summaries of each novel and answered a 25-question reading comprehension test. The interest level variable was the within subjects factor and gender was the between subject factor. Three variables (writing clarity, writing accuracy, and reading comprehension) served as dependent variables. Results indicated that interest did have a significant main effect on the reading comprehension variable in two of the three comparisons.

A few years later, Schiefele and Krapp (1996) investigated the relations between topic interest and free recall of expository text. Eighty male college students completed
general intelligence, prior knowledge, and topic interest measures and then read a text on communication. Results showed that topic interest was related to recall of idea units, elaborations, and main ideas and was also related to the sequence of main ideas recalled. Also, topic interest was related to variables of the reading process (e.g., arousal) and its relationship to the indicators of recall was independent of prior knowledge and intelligence.

By manipulating the interestingness of factual details in an expository text, Burnette (1998) investigated the effects of interestingness on free recall, recall quality, and recall sequence. Sixty-three college students read 35-sentence expository passages on two topics (Aztec and Inca) and performed immediate free recall and rated the interestingness of the sentences. Manipulated sentences were rated as more interesting than were control (unmanipulated) sentences. Results indicated that, for the Aztec topic, participants who read manipulated (that is, interesting) sentences had higher macro recall of those sentences than did the control group.

For the duration of the effect of situational interest on recall, situational interest appeared to have a short-term effect but not a long-term effect in Lanzafame (1998). Three hypotheses were tested: Hypotheses 1 and 2 examined the effects of situational interest on adults’ recall of main ideas and seductive details and Hypothesis 3 investigated the effects of situational interest on individual interest. Their recall and individual interest were measured using post and follow-up measurements. Results revealed that situational interest significantly affected recall (both main ideas and seductive details) on the posttest; however, it did not have a significant effect on the
follow-up test. In addition, situation interest had no significant effect on individual interest, suggesting individual interest develops over a long period of time.

However, as in the research with younger students, the research with older readers has not always shown a positive relationship between interest and comprehension. Shimoda (1993) asked 24 college students (16 from senior-level psychology classes and 8 from senior-level civil engineering classes) to read two short excerpts about concepts from psychology texts and two about concepts from civil engineering. Each excerpt was rewritten in two ways: one with generic examples and one with interesting examples. While generic examples were written without unnecessary detail and emphasized parallel semantic relationships, interesting examples had dimensions of narrativity, vividness, and important life themes. Comprehension was measured with 12 true/false questions per excerpt, and attention was measured using a secondary task reaction time. Results showed that interesting examples increased attention and reading speed but they did not increase comprehension. Rather, familiar topics turned out to increase comprehension. McDaniel et al. (2000) found no difference in overall recall across stories that differed in rated interest. Story interest interacted with encoding type in terms of recall. Relational encoding improved recall for low-interest stories, but not for high-interest stories.

In summary, the majority of studies with older readers proved a positive relationship between interest and reading comprehension. Some of those studies reviewed, however, as was in the case with children, demonstrated that low ability readers were more affected by interest than high ability readers at four (4th, 6th, 8th, and
11th) grade levels (e.g., Vaughan, 1975). In addition, male readers were more sensitive to topic interest than female readers among high ability students (e.g., Baldwin et al., 1985).

The effect of interest on reading comprehension in L2 research

Most studies about the effect of interest on L2 reading comprehension have been conducted with high school or college students. No study was found for children’s reading comprehension in L2 because the study of second or foreign language is usually not undertaken in early ages. Some studies (Abu-Rabia, 1996; Buegel & Buunk, 1996; LeLoup, 1993) did show a positive effect of interest on adult readers’ L2 reading comprehension, but other studies (Carrell & Wise, 1998) did not show the significant main effect for topic interest on college students’ L2 reading comprehension.

LeLoup (1993) examined whether there was a difference in L2 reading comprehension depending on the level of interest in the text topic for SFL (Spanish as a foreign language) high school students. Independent variables in this study were interest level, general L2 ability, gender, and prior knowledge of the topics. Results indicated that L2 readers comprehended significantly more information in passages for whose topics they had a high interest level and that a low interest level in topics impeded comprehension.

With a purpose to investigate HSL (Hebrew as a second language) students’ reading comprehension as related to their attitudes, cultural background, and their interest in the reading material, Abu-Rabia (1996) administered individual interest
questionnaires, Arab and Jewish cultural stories, and ten multiple-choice comprehension questions about each story to high school students who were randomly sampled from two Druze high schools in Israel. The subjects in this study showed higher positive interest in reading the culturally Arab stories than the Jewish stories, and their reading comprehension scores matched their interest preference. This study also suggested that interest positively affected reading comprehension in L2.

Even though interest was not directly used as a primary factor but as a measure for prior knowledge in their study, Buegel and Buunk (1996) showed an indirect evidence for the effect of interest on foreign language text comprehension, suggesting that sex-based differences in prior knowledge contributed to foreign language reading comprehension. Because topic interest was used as one of measures for prior knowledge, the conflating of prior knowledge and topic interest in this study still leaves it unclear how their results can be generalized to situations where prior knowledge and topic interest are more clearly separated.

Noting that prior knowledge and interest in a topic do not necessarily correlate, though they often go hand in hand, Carrell and Wise (1998) attempted to separate the effects of prior knowledge and topic interest in L2 reading comprehension in their study. On the basis of a prior-knowledge test and a topic-interest test inventory, 104 ESL students read passages and took multiple-choice comprehension tests on topics for which they had all four possible combinations of high and low topic interest and high and low prior knowledge. Unlike the previous studies, reading comprehension measure did not reach significance for the two main effects of prior knowledge and topic interest.
Compared to L1 research, only a few studies have addressed L2 reading comprehension relating to interest to find contradictory results. As a primary factor, interest was proved positively to influence L2 reading comprehension for high school students in some studies (e.g., Abu-Rabia, 1996; LeLoup, 1993), but in other studies, no main effect of topic interest was found in ESL college students’ reading comprehension (e.g., Carrell & Wise, 1998). Furthermore, topic interest and prior knowledge were confounded in some studies using interest as a measure of prior knowledge (e.g., Buegel & Buunk, 1996). Therefore, more studies are needed to clarify the role of interest in L2 reading comprehension.

Seductive details

Scholars have used the term *seductive details* to refer to highly interesting segments of a text that are not relevant to the main ideas of the text. Thus, seductive details are usually considered to be relatively less important than other segments within a passage relative to the main idea of the passage (Garner et al., 1989; Garner, Brown, Sanders, & Menke, 1992). What is interesting about such text segments is that they may interfere with the recall of main ideas or the learning of important information from text. These cognitive consequences resulting from adding interesting but unimportant details to text have been named the *seductive details effect*.

Although they did not use the term *seductive details* explicitly, Hidi and her colleagues began documenting the seductive details phenomenon in the early 1980s.
Hidi et al. (1982) investigated the types of texts that children typically encounter in school. Six comparable passages were classified into three types: narrative, expository, and mixed, with two instances of three categories. After graduate students rated the importance and interest of idea units, fifth- and seventh-grade students each read one of the six passages and recalled it immediately or after a 4-day delay. Hidi et al. (1982) attributed the relatively poor recall of essential ideas to the disruption of the identification of important information by “highly salient, trivial information” (p. 72).

Hidi and Baird (1988) investigated the cumulative effects of three means of increasing text-based interest. Three versions of text were produced by enhancing attributes identified as contributing to sentence interest (a base text), by adding salient elaborations of main ideas of the text (a second text version), and by inserting questions to induce the need to resolve incompletely understood information (a third text version). Fourth and sixth graders were randomly assigned to read one of the three text versions at their grade level and asked to recall immediately and one week after reading. Results indicated that text versions made no significant difference in total recall, recall of important information, or recall of unimportant information.

These studies were among the first to investigate the effects of both interest and importance on recall and to show that interesting, concrete information generally is better recalled compared to abstract, general information. However, as Sadoski (1995) pointed out, seductive details were neither operationally defined nor experimentally varied, though these studies have been cited in support of the seductive detail effect, and thus, these studies cannot properly be characterized as tests of the seductive details effect.
Another set of studies (Britton, Van Dusen, Gulgoez, & Glynn, 1989; Duffy, Shinjo, & Myers, 1990; Graves, Slater, Roen, Redd-boyd, Duin, Furniss, & Hazeltine, 1988;) compared the recall of various text revisions. Critically reviewing these studies, Sadoski (1995) commented that although these studies are frequently included in the discussion of seductive details and may be viewed as suggesting a seductive detail effect, they were clearly not designed to test for this effect (p. 505). In any of these studies, seductive details were not operationally defined or experimentally manipulated.

Garner, et al (1989) documented the seductive details effect across several text genres, including descriptive and expository texts. They showed through two experiments that adults as well as 7th grade students who were presented with seductive details were significantly less adept at including main ideas in their recall protocols than those who were given no irrelevant information and given redundant signaling of the main ideas. In several other studies, biographical and narrative texts were used for the seductive details effect (Garner, Alexander, Gillingham, Kulikowich, & Brown, 1991; Wade & Adams, 1990).

However, Sadoski (1995, p. 503) cautioned against the inappropriate interpretation of the results of Garner et al.’s (1989) study in the following aspects. First, it is not possible to tell whether the difference was due to the presence of seductive details, the absence of signaling, or the combination of the two (i.e., seductive details and signaling) because seductive details and signaling were confounded in the contrast. Second, because the proportion of recall and the probability of recalling any particular
piece of information generally decreases with passage length, the inferior recall of main idea information from the text with seductive details in Experiment 1 may have been due to the length of the text rather than any seductive or disruptive qualities of the details added. Third, because the students were asked to recall only the most important information, it is possible that students who read the seductive details text may have remembered main idea information but failed to report it.

Garner and her colleagues conducted two other studies that are often interpreted as supporting the seductive detail effect (Garner et al., 1991; Garner and Gillingham, 1991). In Garner et al. (1991), undergraduate students were asked to read a science text under various conditions and then to recall important information on a set of measures. Results indicated that attention of students was diverted from important generalizations in text to interesting, sometimes irrelevant, detail. Also, the placement of the detail made no effect on recall but overall interestingness of the text affected recall, particularly when students knew little about the topic of the text.

Garner and Gillingham (1991) investigated the relationships among topic knowledge, interest, and memory for text. They experimentally manipulated the presence of seductive details within a passage about Stephen Hawking’s scientific work. The version without seductive details consisted of four paragraphs; in the seductive detail version, a paragraph on the wager was added. Undergraduates read one of the text versions and rated each paragraph for interest. They then recalled the “really important information” and answered five short-answer questions. Results indicated that the two versions of a text made no significant difference on either of the memory
These two studies, however, do not seem to establish the existence of a seductive detail effect because the first study did not experimentally manipulate the presence of seductive details, thus the seductive detail effect was not directly tested (Sadoski, 1995, p. 504). Also, the second study failed to prove the seductive details effect. Rather, the personally engaging information about Hawking placed at the beginning of the passage did improve the recall of main idea.

Wade and her colleagues conducted a series of study of the seductive details effect (Wade & Adams, 1990; Wade et al., 1993). As described before, Wade and Adams (1990) investigated immediate and delayed recall of sentences for college students after establishing four categories. Interesting information was recalled better than uninteresting information. The least recalled sentences were the high-importance/low-interest sentences that appeared to support the main ideas based on content analysis. Wade et al. (1993) replicated and extended the earlier study. They concluded that although readers were strategically allocating extra time and effort to important factual information, they were also impulsively and spontaneously devoting extra time and attention to seductive details.

However, Sadoski (1995) argued that the two studies using the Horatio Nelson passage pose some problems. For example, the presence of seductive details was not experimentally manipulated. Without control passage that lacked seductive details, it is impossible to determine if uninteresting important information would have been better recalled in their absence (p. 506). Also, regarding the notion of main ideas in a
biography, the Nelson materials raise a conceptual concern. That is, if a biography is taken as a representative record of someone’s life, it seems inappropriate to eliminate personal, interesting facts that do not support the “main ideas” of that person’s life.

More recently, Harper and Mayer (1998) revealed that students who read expository passages with seductive details recalled significantly fewer main ideas and generated significantly fewer problem-solving transfer solutions than those who read passages without seductive details. Furthermore, the seductive details effect did not dissipate even when the passage was revised to include either highlighting of the main ideas, a statement of learning objectives, or signaling. Mayer, Heiser, and Lonn (2001) examined college students’ retention and transfer performance when they viewed an animation and listened to concurrent narration explaining the formation of lightning. The results indicated that students who received concurrent on-screen text that summarized or duplicated the narration performed worse on tests of retention and transfer than those who received no on-screen text. Moreover, lower transfer performance also occurred when seductive details were added to the narration or seductive (interesting but irrelevant) video clips were inserted within or before the presentation.

By contrast, however, Schraw (1998) failed to show the seductive details effect in three experiments. He described two different types of seductive details: 1) those that are less interesting when read in isolation (context dependent) and 2) those that are equally interesting in context or isolation (context independent). Although he found in a second experiment that context-dependent seductive details took longer to read and
were recalled better than main ideas, he found in a third experiment that including seductive details did not interfere with overall story recall or recall of main ideas.

Despite such a rich line of research on seductive details, no consistent findings were determined. Also, a consistent operational definition of seductive details has not been established and applied in this research. Cautious selection of the passages seems to be required for a clearer distinction between uninteresting but important main ideas and interesting but unimportant seductive details. For example, the use of inherently interesting texts will make it difficult to have uninteresting main ideas in the text and thus to determine the seductive details effect. And again, in order to determine the seductive details effect, the presence of seductive details needs to be experimentally manipulated. As mentioned before, without a control passage that lacked seductive details, it would not possible to determine the effect of seductive details.

**Elaboration and comprehension (or recall)**

It should be noted that the term *elaboration* has been used in a different sense in L1 and L2 research. Thus, in this section, how elaboration has been defined, how it has been shown to influence comprehension in L1 and L2 (practical effect), and how the elaboration will be used in this study (operational definition) will be presented in that order. With regard to the meaning of elaboration, Donn and Belinda (1996, p.28) stated as follows that
Many students, including those with special needs, may experience difficulty when attempting to learn basic facts, retain new information, or generalize knowledge from one setting to another. Although teachers cannot alter students’ preferred learning method, initial background knowledge, or innate intelligence, they can incorporate instructional techniques that help students to retain and recall information (Denham & Leiberman, 1980; Engler, 1983). One such technique that helps make information more memorable is a process known as elaboration.

Cognitive psychologists generally agree that for information to be retained in the long-term memory, it is imperative that students elaborate on the new material (Anderson, 1990; Gagne, 1985; Roehler & Duffy, 1984). Anderson and Reder (1979) suggested that there is a relationship between the number of elaborations readers make about specific information during encoding and the subsequent memorability of that information. Elaboration occurs when students think about a specific piece of information and construct a memory link between that piece and some related information already held in their long-term memory. However, the related information is more substantive than that used in literal comprehension (Donn & Belinda, 1996).

Information is often presented with self-generated or teacher-generated elaborations. In fact, Anderson (1990) found that students who elaborate on material, even without knowing of a later test, achieve higher test scores than students who are aware of an impending test but do not have time to elaborate (Donn & Belinda, 1996).
Many elaboration techniques have been developed and applied for the memory for text or prose comprehension: associative, integrative, and comparative elaboration techniques in general (Mayer, 1980). Donn and Belinda (1996) suggested and examined 11 elaborative methods that can be applied to all subject domains.

Indeed, many researchers have examined the effect of elaboration with regard to comprehension or recall. Miller and McCown (1986) examined the effect of text coherence and elaboration on recall of sentences within paragraphs. In two experiments, college students read paragraphs in which the height of target propositions was held constant while the amount of target elaboration differed across versions of the paragraphs. Results indicated that free recall of target propositions differed reliably as a function of elaboration. Under free recall conditions, the students in both experiments recalled target propositions more frequently when the propositions following the target were referentially related to the targets than when the target and the subsequent propositions were independent of each other. Results from Experiment 2 showed that the free recall results were not due to reading time differences.

In L2 reading, however, the term elaboration has been used mainly with regard to input modification: that is, simplification and elaboration. Simplification is represented in the form of less complex vocabulary and syntax but unfamiliar linguistic items that are offset with redundancy and explicitness for elaboration (Yano, Long, & Ross, 1994). Thus, most L2 studies have investigated the relative effects of input modification (simplification or elaboration), compared to the base text, on reading comprehension. For example, “one or more written texts designed for native speakers
were adapted or rewritten in simplified or elaborated versions. The two or three forms were then presented to intact or randomly formed groups of high-school or university EFL and ESL students whose comprehension was measured in some objective manner” (Yano et al., 1994, p. 195).

Here are some findings of L2 research on the effect of input modification on reading comprehension. In some studies, the simplified text had a beneficial effect on the comprehension of L2 readers when compared to regular unmodified text (Brown, 1987; Johnson, 1981; Tsang, 1987). In other studies, simple sentences did not facilitate comprehension, compared to complex sentences, but even hindered comprehension (Blau, 1982). Or, no significant differences were found in other studies (Parker & Chaudron, 1987; Yano, et al., 1994). For elaboration, it was suggested in some studies that elaboration had a critical effect on the L2 readers’ comprehension and memory of the sentences (Horiba, 1996) and that elaborated passages made a significant difference in L2 students’ reading comprehension, compared to simplified passages (Oh, 2001).

Recently, two studies have examined the effect of elaboration in reading comprehension in L2. Horiba (1996) investigated the relationship between the process of encoding and the resulting comprehension and recall of causally related L2 sentences. After reading sentence pairs varying in degree of causal relatedness, they recalled one sentence of each pair when the other was given as a cue 24 hours later. Results showed that recall was better when subjects generated an elaboration for each pair than when they studied the pair for memorization. That is, in the study condition, highly related sentences were generally recalled better than less related sentences, but in the elaboration
condition, recall for minimally related pairs was better than that for moderately related pairs and as good as that for highly related pairs. In an attempt to examine the relative effects of two types of input modification (simplification and elaboration) on EFL students’ reading comprehension, Oh (2001) presented six English passages in one of three forms (baseline, simplified, and elaborated) to 180 high school students and asked them to read the passages and complete multiple choice test for comprehension measure. According to the analysis of the study, subjects who read the elaborated passages performed significantly better than those who read simplified passages.

In the present study, the term elaboration was used more in the L1 sense in that two types of details (seductive details and interesting elaborations) were added to the text and used as manipulations intended to affect readers’ recall processes. In other words, how externally-provided (experimenter-provided) elaborations, not student-generated (or reader-generated) elaborations, would affect L2 comprehension for ESL students was compared to the effect of a baseline text without elaboration.

As it was suggested in many studies that memory or recall for any superordinate propositions (‘main ideas’ in this study) in a text ought to be a function of subordinate propositions supporting them and major idea (superordinate proposition) in a paragraph would be better recalled if it was supported by subordinate propositions (Anderson & Reder, 1979; Craik & Tulving, 1975), the present study included two types of interesting details (seductive details and interesting elaborations) and examined their relative effects of them on L2 recall processes (the amount and the quality of recall). As described in the introduction, seductive details were defined as a kind of elaboration that has
tangential relation to the main idea of the text and interesting elaborations were defined as elaborations that have a high relation to the main idea of the text.
CHAPTER 3
RESEARCH METHOD

Participants

Korean EFL college students who were attending two large universities in Seoul, Korea participated in this study. They were all majoring in English language and literature or in English language education. Their grade levels ranged from sophomore to senior. A reading proficiency test, similar to the reading comprehension section of TOEFL, was administered to 144 college students. Based on the scores they received on the test, they were divided into two groups, higher and lower, in terms of English language reading proficiency.

There were 63 students who received more than 10 points out of 12 points, 23 students who received 9 points, and 55 students who earned less than 8 points. In addition, three students did not provide any answer to the test. The 23 students who scored 9 points and the 3 students who provided no responses were excluded from data analysis. In the end, 118 students (higher group: 63, lower group: 55) were included as the final group of participants in the main study, with 70 women and 48 men.

As shown in Table 3.1, participants were randomly assigned to one of three experimental conditions (explained below). Because the results of the proficiency measure were not known until all data were gathered, groups were not equal in size. This had the unfortunate consequence of having no men in the low proficiency group in the EL condition.
Table 3.1: The number of participants in each group

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<td>Total N</td>
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Materials

Experimental materials were packaged together and included three sub-test sections: the reading proficiency test, the prior knowledge test, and the reading—recall—reading comprehension test.

Reading proficiency test. The purpose of the proficiency test was to determine the participants’ reading proficiency level. This multiple-choice test consisted of three reading passages, each of which was followed by four questions asking for an appropriate title for the text, main idea, and inferential information. Each reading passage was one or two paragraphs long. Participants were given 12 minutes to complete the test.
**Prior knowledge test.** The purpose of the prior knowledge test was to measure participants’ existing knowledge about the topics of the key material they were going to read in the next test section. This test was made up of four short-answer questions regarding main terms that were considered to be critical in understanding the target text: Linus Pauling, free radicals, antioxidants, and vitamin C. Questions in this test could be answered in English or in the participants’ native language (Korean), or in both languages as the goal of this test was not to test language proficiency but to test pre-knowledge.

**Reading—Recall—Reading comprehension test.** The target materials were designed to examine what and how much the readers recalled from the text they read and how they comprehended the text. This test had three sub-parts: a reading passage, a recall sheet, and a reading comprehension measure. The entire reading passage consisted of 6 paragraphs, each of which had 4 or 5 sentences. Each paragraph was followed by a recall sheet on the next page and then by a reading comprehension test sheet on the next page. There were three different versions of the reading text: the baseline (BA) version, the seductive details (SD) version, and the interesting elaborations (EL) version. Each version consisted of the same expository information except that the SD and EL versions had interesting details inserted into the text. Thus, the BA version was the plain text without any interesting details (seductive details or interesting elaborations) in the text. The SD version had a sentence of seductive detail embedded in each paragraph of the text. The EL version had a sentence of interesting
elaboration embedded in each paragraph of the text. The recall sheet following each paragraph was a blank sheet on which the readers were asked to write down everything they remembered from the passage they had just read. The reading comprehension test had two parts: a short answer question and a main idea question. The short answer question was about some less important segment of the text and the main idea question was about a more important segment of the text.

Data collection procedures

Pilot Study I: The goal of the first pilot study was to examine the validity of the reading material that were to be used as a text in the main study in terms of importance and interestingness. In other words, this pilot study was used to validate the fact that the interesting segments that were inserted into the text and were meant to be interesting to the reader were truly interesting. A total of 14 ESL graduate students (male: 8, female: 6), who were attending a large university in the U.S., participated in this study. They were asked to rate the relative importance and interestingness of each sentence within each of several paragraphs on a 7-point Likert-type scale.

Pilot Study II: Using the results of Pilot Study I, some sentences were revised to make them more interesting and then presented to different ESL readers again for ratings of the importance and interestingness of all the sentences. A total of 14 ESL graduate students (male: 8, female: 6), who were attending the same university as the above but who had not participated in the first pilot study, took part in the second study. They
were also asked to rate the relative importance and interestingness of each sentence within a paragraph on a 7-point Likert-type scale. Results indicated that the materials were now distinguished appropriately in terms of importance and interestingness.

*Main study:* Korean EFL college students from two large universities in Korea participated in this study. Four intact classrooms of students, who were taking core courses for their majors, were invited to participate in this study (two classrooms from each university). The instructors for the courses permitted me to enter their own classrooms and describe the experiment. The students were then asked for their consent and signed consent forms before data collection began. Then, packages of testing materials were randomly distributed to the students. There were three different packages, each with one of three colored stickers (yellow, red, and green) indicating the three different versions of the materials. Each package had the following materials inside: the reading proficiency test, the prior knowledge test, the six paragraphs of the reading passage, each followed by a recall sheet and a reading comprehension test sheet.

After putting their demographic information (name initial, name of school, major, and sex) on the first page of the packet, the students began each test at the same time at the verbal signal of the researcher. They were guided through each test by the researcher’s brief instructions. For example, in the reading—recall—reading comprehension test, the students were told to read the text two times, then to recall whatever they remembered from the text on the recall sheet on the next page, and then to take the reading comprehension test on the next page. They were also told that they
were not allowed to turn back to the previous page once they had turned the page over. Finally, they were told to wait for the other students to finish each segment of test-taking even if they had already finished. That is, all students began each segment and each paragraph at the same time. Time allotment for each test was as follows: 12 minutes for the reading proficiency test, 6 minutes for the prior knowledge test, and 42 minutes for the 6 segments of the reading—recall—reading comprehension test. The students were finished in about one hour.

Data coding

For the reading proficiency test, each correct answer to the 12 questions was credited with 1 point. Thus, the maximum score for this test was 12 points. For the prior knowledge test, 0 to 3 points were given to short-answer answers to each of 4 questions depending on students’ answers. Total scores for the prior knowledge test could range from 0 to 12 points. Recall protocols were scored by the researcher and a trained judge, based on the number of idea units correctly recalled by the students. If the segment recalled by the students captured the gist of the statement of the text, even though it was not a word-for-word reiteration, it was credited with 1 point. When information presented in the recall protocol, however, was incorrect or too vague to be correctly identified, no credit was given to it.

For inter-rater reliability, a doctoral student, who was trained by me on how to score the participants’ recall protocols, scored 20 percent of all protocols. Whenever he had questions or problems in scoring, he contacted me and in discussion, solved the
problems or questions. He scored the protocols using a template that had a list of idea units and those scores were tested against the scores given by the researcher for inter-rater reliability using a correlation analysis. Reliability turned out to be .90 (p < .01). For intra-rater reliability, the researcher re-scored 20 percent of all the recall protocols after the completion of the first scoring. Again, the two scores were compared against each other using correlation analysis. Reliability turned out to be .97 (p < .01).

**Data analysis**

*Hypothesis 1: There will be an effect of text type on Korean college EFL readers’ recall of the ideas from the text such that (a) interesting elaborations will facilitate their recall of ideas from the text, and (b) seductive details will interfere with their recall of ideas from the text.* A MANOVA was used to test this hypothesis, examining whether there were significant differences in recall scores among the students reading one of three different text versions (BA, SD, and EL). The effect of text types was tested on three distinct areas of recall scores: common idea recall, main idea recall, and unimportant idea recall scores. The critical F value for significance was set at p<.05.

*Hypothesis 2. Proficiency level (higher and lower) will affect Korean college EFL readers’ recall of ideas from the text.* A MANOVA was used to test this hypothesis, examining whether there was a significant difference in recall scores between higher proficient readers and lower proficient readers. The effect of proficiency level was tested on three distinct recall scores: common idea recall, main idea recall, and unimportant
idea recall scores. The critical F value for significance was set at p<.05.

**Hypothesis 3:** Gender (male and female) will affect Korean college EFL readers’ recall of ideas from the text. MANOVA was used to test this hypothesis, examining whether there was a significant difference in recall scores between male readers and female readers. The effect of gender was tested on three distinct recall scores: common idea recall, main idea recall, and unimportant idea recall scores. The critical F value for significance was set at p<.05.

**Hypothesis 4.** The effect of proficiency level (higher and lower) on Korean college EFL readers’ recall of ideas from the text will differ across male and female readers. A two-way MANOVA was used to test this hypothesis, examining whether there was significant interaction effect of proficiency level and gender on three distinct recall scores: common idea recall, main idea recall, and unimportant idea recall scores. The critical F value for significance was set at p<.05.

**Hypothesis 5.** The effect of interesting details (SD and EL) on Korean college EFL readers’ recall of ideas from the text will be different across more proficient readers and less proficient readers. A two-way MANOVA was used to test this hypothesis, examining whether there was significant interaction effect of text types and proficiency level on three distinct recall scores: common idea recall, main idea recall, and unimportant idea recall scores. The critical F value for significance was set at p<.05.
Hypothesis 6. The effect of interesting details (SD and EL) on Korean college EFL readers’ recall of ideas from the text will be different across male readers and female readers. A two-way MANOVA was used to test this hypothesis, examining whether there was significant interaction effect of text types and gender on three distinct recall scores: common idea recall, main idea recall, and unimportant idea recall scores. The critical F value for significance was set at p<.05.
This chapter will present the results for each of the hypotheses in this study.

**Hypothesis I:** Texts with two kinds of interesting details (seductive details and interesting elaborations) will have a different effect on Korean college EFL readers’ recall of ideas from the text.

Hypothesis I was first concerned with the treatment effect of text types on recall of common ideas, main ideas, and non-main (unimportant) ideas, respectively. This hypothesis was tested using one-way MANOVA, where text type was treated as an independent variable and the three kinds of recall scores as dependent variables, by examining the main effect of text type on recall scores in the three groups.

(1) In terms of recall of common ideas, mean scores for the BA (baseline), SD (seductive detail), and EL (interesting elaboration) groups were $M = 27.00$ (SD = 9.466), $M = 16.56$ (SD = 8.028), and $M = 21.58$ (SD = 6.432) respectively. A summary of the results is shown in Table 4.1 below.
Table 4.1: Means, Standard Deviations, and Sample sizes for BA, SD, and EL group on the recall of common ideas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Treatment</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common idea recall score</td>
<td>BA</td>
<td>27.00</td>
<td>9.466</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>16.56</td>
<td>8.028</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td>21.58</td>
<td>6.432</td>
<td>33</td>
</tr>
</tbody>
</table>

One-way ANOVA’s were then conducted to determine whether a significant difference existed among three groups’ mean scores on each of the dependent measures. As illustrated in Table 4.2 below, the F value turned out to be significant ($F = 17.293$, $p < .01$) for recall of common ideas.

Table 4.2: ANOVA for between subjects effect in common ideas recall

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2317.097</td>
<td>2</td>
<td>1158.549</td>
<td>17.293</td>
<td>.000</td>
</tr>
<tr>
<td>Within</td>
<td>7704.665</td>
<td>115</td>
<td>66.997</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10021.763</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Post hoc analysis was performed to determine where the significant difference existed between the text types. Results of the post hoc test indicated the following:

Table 4.3: Post hoc test for 3 text types on common ideas recall score

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>text types (I)</th>
<th>text types (J)</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common ideas recall score</td>
<td>BA</td>
<td>SD</td>
<td>10.44**</td>
<td>1.776</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td></td>
<td>5.42*</td>
<td>1.904</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>BA</td>
<td>-10.44**</td>
<td>1.776</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td></td>
<td>-5.02*</td>
<td>1.894</td>
<td>.025</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td>BA</td>
<td>-5.42*</td>
<td>1.904</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>5.02*</td>
<td>1.894</td>
<td>.025</td>
</tr>
</tbody>
</table>
As shown above in Table 4.3, there existed a significant difference between text types BA and SD (p < .01), between SD and EL (p < .05), and between EL and BA (p < .05). The BA group students recalled significantly more common ideas than the SD and EL group students, the EL group students recalled significantly more common ideas than the SD group students. Therefore, Hypothesis 1 was confirmed in the recall of common ideas for Korean EFL college students.

(2) For the recall of main ideas, the mean scores for the BA, SD, and EL groups were M = 12.43 (SD = 2.931), M = 9.60 (SD = 3.260), and M = 12.06 (SD = 2.397) respectively. A summary of the results is shown in Table 4.4 below.

Table 4.4: Means, Standard Deviations, and Sample sizes for BA, SD, and EL group on the recall of main ideas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Treatment</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main ideas recall</td>
<td>BA</td>
<td>12.43</td>
<td>2.931</td>
<td>42</td>
</tr>
<tr>
<td>recall score</td>
<td>SD</td>
<td>9.60</td>
<td>3.260</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td>12.06</td>
<td>2.397</td>
<td>33</td>
</tr>
</tbody>
</table>

A one-way ANOVA was conducted to determine whether a significant difference existed among three groups’ mean scores on the recall of main ideas. As illustrated in Table 4.5 below, the F value turned out to be significant (F = 11.482, p < .01).
Table 4.5: ANOVA for between subjects effect in main idea recall

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>196.175</td>
<td>2</td>
<td>98.088</td>
<td>11.482</td>
<td>.000</td>
</tr>
<tr>
<td>Within</td>
<td>982.444</td>
<td>115</td>
<td>8.543</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1178.619</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Post hoc analysis revealed a significant difference among three text type groups. The results are presented in Table 4.6.

Table 4.6: Post hoc test for 3 text types on main ideas recall score

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(I) text types</th>
<th>(J) text types</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main ideas recall score</td>
<td>BA</td>
<td>SD</td>
<td>2.82**</td>
<td>.634</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td>.37</td>
<td></td>
<td>.680</td>
<td>.851</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>BA</td>
<td>-2.82**</td>
<td>.634</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td>-2.46**</td>
<td></td>
<td>.676</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td>BA</td>
<td>-.37</td>
<td>.680</td>
<td>.851</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.46**</td>
<td></td>
<td>.676</td>
<td>.001</td>
</tr>
</tbody>
</table>

As shown above in Table 4.6, there existed a significant difference between text types BA and SD (p < .01), and between SD and EL (p < .01). There was no significant difference between BA and EL. Different text types made a significant difference on the recall of main ideas of the text for Korean EFL college readers. The BA group students recalled more main ideas from the text than the SD group students, and the EL group students recalled more main ideas than the SD group students. Therefore, Hypothesis 1 was confirmed in terms of the recall of main ideas for Korean EFL college students.
(3) For the recall of non-main ideas, mean scores for the BA, SD, and EL group were $M = 9.02$ (SD = 2.342), $M = 8.30$ (SD = 2.284), and $M = 9.00$ (SD = 2.194) respectively. A summary of the results is shown in Table 4.7 below.

Table 4.7: Means, Standard Deviations, and Sample sizes for BA, SD, and EL group on the recall of non-main ideas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Treatment</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-main ideas recall score</td>
<td>BA</td>
<td>9.02</td>
<td>2.342</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>8.30</td>
<td>2.284</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>EL</td>
<td>9.00</td>
<td>2.194</td>
<td>33</td>
</tr>
</tbody>
</table>

A one-way ANOVA was conducted to determine whether a significant difference existed among three groups’ mean scores on the recall of non-main (unimportant) ideas. As illustrated in Table 4.8 below, the F value turned out to be not significant ($F = 1.329$, $p < .05$).

Table 4.8: ANOVA for between subjects effect in non-main idea recall

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>13.827</td>
<td>2</td>
<td>6.913</td>
<td>1.329</td>
<td>.269</td>
</tr>
<tr>
<td>Within</td>
<td>598.046</td>
<td>115</td>
<td>5.200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>611.873</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Therefore, Hypothesis 1 was not confirmed for the recall of non-main ideas for Korean EFL college students.

Now returning directly to the question of whether seductive details would
interfere with comprehension (Hypothesis 1a), results clearly supported the hypothesis. The group reading the BA (baseline) text outperformed the seductive detail group on every measure and did so to a statistically significant degree for the common ideas (p=.000) and main ideas (p=.000) measures. As for Hypothesis 1b, whether interesting elaborations facilitated recall when compared to the BA (baseline), results indicated that the hypothesis was clearly not supported. The performance of the groups reading the BA (baseline) text was always higher than the performance of the EL (interesting elaboration) group, and it was significantly so for the measure of common ideas recalled (p=.014).

Hypothesis II: Proficiency level (higher and lower) will affect Korean college EFL readers’ recall of ideas from the text.

Hypothesis 2 was concerned with the effect of proficiency level on recall of common ideas, main ideas, and non-main (unimportant) ideas, respectively. This hypothesis was tested using a one-way MANOVA, where two levels (high and low) were treated as the independent variable and three kinds of recall scores as dependent variables.

(1) In the recall of common ideas, mean scores for H (higher) and L (lower) groups were $M = 26.19$ (SD =8.242), and $M = 16.51$ (SD = 7.525) respectively as shown in Table 4.9 below.
Table 4.9: Means, Standard Deviations, and Sample sizes for H and L groups on the recall of common ideas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Proficiency level</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common ideas recall score</td>
<td>higher</td>
<td>26.19</td>
<td>8.242</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>lower</td>
<td>16.51</td>
<td>7.525</td>
<td>55</td>
</tr>
</tbody>
</table>

The result of significance test for the recall scores between two groups indicated that there was a significant difference as in Table 4.10.

Table 4.10: The significance test for common ideas recall score between two levels

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2752.303</td>
<td>1</td>
<td>2752.303</td>
<td>43.919</td>
<td>.000</td>
</tr>
<tr>
<td>Within</td>
<td>7269.460</td>
<td>116</td>
<td>62.668</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10021.763</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Therefore, Hypothesis 2 was confirmed for the measure of recall of common ideas. In other words, more proficient readers recalled significantly more common ideas than less proficient readers.

(2) For the main idea recall measure, mean scores for H (higher) and L (lower) groups were M = 12.83 (SD =2.276), and M = 9.55 (SD = 3.167) respectively as shown in Table 4.11.

Table 4.11: Means, Standard Deviations, and Sample sizes for H and L groups on the recall of main idea

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Proficiency level</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main ideas recall score</td>
<td>higher</td>
<td>12.83</td>
<td>2.276</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>lower</td>
<td>9.55</td>
<td>3.167</td>
<td>55</td>
</tr>
</tbody>
</table>
The result of significance test for the recall scores between two groups indicated that there was a significant difference as in Table 4.12.

Table 4.12: The significance test for main idea recall score between two levels

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>315.903</td>
<td>1</td>
<td>315.903</td>
<td>42.476</td>
<td>.000</td>
</tr>
<tr>
<td>Within</td>
<td>862.716</td>
<td>116</td>
<td>7.437</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1178.619</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Therefore, hypothesis 2 was confirmed in main idea recall, more proficient readers recalled more main ideas significantly than less proficient readers.

(3) For the recall of non-main (unimportant) ideas, mean scores for H (higher) and L (lower) groups were \( M = 9.48 \) (SD = 2.023), and \( M = 7.93 \) (SD = 2.308) respectively as in Table 4.13 below.

Table 4.13: Means, Standard Deviations, and Sample sizes for H and L groups on the recall of non-main ideas

<table>
<thead>
<tr>
<th>Dependent Variable recall score</th>
<th>Proficiency level</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-main ideas</td>
<td>higher</td>
<td>9.48</td>
<td>2.023</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>lower</td>
<td>7.93</td>
<td>2.308</td>
<td>55</td>
</tr>
</tbody>
</table>

The result of significance test for the recall scores between two groups indicated that there was a significant difference as in Table 4.14.
Once again, Hypothesis 2 was confirmed for the non-main (unimportant) ideas recall scores, with more proficient readers recalling significantly more non-main (unimportant) ideas than less proficient readers.

**Hypothesis III:** Gender will affect Korean college EFL readers’ recall of ideas from the text.

Hypothesis 3 was concerned with the effect of gender on recall of common ideas, main ideas, and non-main (unimportant) ideas, respectively. This hypothesis was tested using one-way MANOVA, where the two sexes (male and female) were treated as the independent variable and the three kinds of recall scores served as dependent variables.

(1) In the recall of common ideas, mean scores for M (male) and F (female) groups were M = 20.25 (SD =9.548), and M = 22.66 (SD = 8.986) respectively as in Table 4.15 below.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common ideas recall score</td>
<td>male</td>
<td>20.25</td>
<td>9.548</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>22.66</td>
<td>8.986</td>
<td>70</td>
</tr>
</tbody>
</table>

Table 4.14: The significance test for non-main ideas recall score between two levels

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of S</th>
<th>df</th>
<th>Mean S</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>70.450</td>
<td>1</td>
<td>70.450</td>
<td>15.094</td>
<td>.000</td>
</tr>
<tr>
<td>Within</td>
<td>541.423</td>
<td>116</td>
<td>4.667</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>611.873</td>
<td>117</td>
<td>4.667</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The result of significance test for the recall scores between two groups indicated that there was not a significant difference as in Table 4.16.

Table 4.16: The significance test for common ideas recall score between two groups

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of S</th>
<th>df</th>
<th>Mean S</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>164.991</td>
<td>1</td>
<td>164.991</td>
<td>1.942</td>
<td>.166</td>
</tr>
<tr>
<td>Within</td>
<td>9856.771</td>
<td>116</td>
<td>84.972</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10021.763</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) For the main idea recall scores, mean scores for M (male) and F (female) groups were M = 10.88 (3.272), and M = 11.59 (SD = 3.095) respectively, as shown in Table 4.17 below.

Table 4.17: Means, Standard Deviations, and Sample sizes for male and female groups in the recall of main ideas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main ideas recall score</td>
<td>Male</td>
<td>10.88</td>
<td>3.272</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>11.59</td>
<td>3.095</td>
<td>70</td>
</tr>
</tbody>
</table>

The result of significance test for the recall scores between two groups indicated that there was not a significant difference as shown in Table 4.18.

Table 4.18: The significance test for main idea recall score between two groups

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of S</th>
<th>df</th>
<th>Mean S</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>14.383</td>
<td>1</td>
<td>14.383</td>
<td>1.433</td>
<td>.234</td>
</tr>
<tr>
<td>Within</td>
<td>1164.236</td>
<td>116</td>
<td>10.037</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1178.619</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(3) For the non-main ideas recall measure, mean scores for M (male) and F (female) groups were $M = 8.44$ (SD = 3.360), and $M = 8.97$ (SD = 2.226) respectively, as shown in Table 4.19 below.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-main ideas</td>
<td>Male</td>
<td>8.44</td>
<td>2.360</td>
<td>48</td>
</tr>
<tr>
<td>recall score</td>
<td>Female</td>
<td>8.97</td>
<td>2.226</td>
<td>70</td>
</tr>
</tbody>
</table>

As shown in Table 4.20, the result of significance test for the recall scores between two groups indicated that there was not a significant difference.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of S</th>
<th>df</th>
<th>Mean S</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>8.118</td>
<td>1</td>
<td>8.118</td>
<td>1.560</td>
<td>.214</td>
</tr>
<tr>
<td>Within</td>
<td>603.755</td>
<td>116</td>
<td>5.205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>611.873</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Therefore, hypothesis 3 was not confirmed for any of the measures of recall. In other words, men and women did not perform significantly differently.

**Hypothesis IV:** The effect of proficiency level (higher and lower) on Korean college EFL readers’ recall of ideas from the text will be different depending on readers’ gender.

Hypothesis 4 was concerned with the interaction effect of proficiency level and gender on recall of common ideas, main ideas, and non-main (unimportant) ideas,
respectively. This hypothesis was tested using a two-way MANOVA, where proficiency level and gender were treated as independent variables and three kinds of recall scores as dependent variables. None of the tests of interaction effects were significant. Means and results of the F test are presented in the following tables.

Table 4.21: Means, Standard Deviations, and Sample sizes for each group in the recall of common ideas

<table>
<thead>
<tr>
<th>Proficiency level</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher</td>
<td>Male</td>
<td>26.12</td>
<td>7.350</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>26.24</td>
<td>8.876</td>
<td>38</td>
</tr>
<tr>
<td>Lower</td>
<td>Male</td>
<td>13.87</td>
<td>7.357</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>18.41</td>
<td>7.166</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 4.22: The significance test for common ideas recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficiency level x Gender</td>
<td>138.503</td>
<td>1</td>
<td>138.503</td>
<td>2.258</td>
<td>.136</td>
</tr>
</tbody>
</table>

Table 4.23: Means, Standard Deviations, and Sample sizes for each group in the recall of main idea

<table>
<thead>
<tr>
<th>Proficiency level</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher</td>
<td>Male</td>
<td>12.92</td>
<td>1.706</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12.76</td>
<td>2.604</td>
<td>38</td>
</tr>
<tr>
<td>Lower</td>
<td>Male</td>
<td>8.65</td>
<td>3.128</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>10.19</td>
<td>3.084</td>
<td>32</td>
</tr>
</tbody>
</table>
Table 4.24: The significance test for main idea recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficiency level x Gender</td>
<td>20.302</td>
<td>1</td>
<td>20.302</td>
<td>2.786</td>
<td>.098</td>
</tr>
</tbody>
</table>

Table 4.25: Means, Standard Deviations, and Sample sizes for each group in the recall of non-main ideas

<table>
<thead>
<tr>
<th>Proficiency level</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher</td>
<td>Male</td>
<td>9.48</td>
<td>2.002</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>9.47</td>
<td>2.063</td>
<td>38</td>
</tr>
<tr>
<td>Lower</td>
<td>Male</td>
<td>7.30</td>
<td>2.225</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>8.38</td>
<td>2.297</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 4.26: The significance test for non-main ideas recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficiency level x Gender</td>
<td>8.223</td>
<td>1</td>
<td>8.223</td>
<td>1.782</td>
<td>.185</td>
</tr>
</tbody>
</table>

Therefore, Hypothesis 4 was not confirmed for any of the measures of recall. In other words, readers’ proficiency level did not interact with gender to affect Korean EFL college students’ recall of ideas.

**Hypothesis V:** The effect of interesting details (SD and EL) on Korean college EFL readers’ recall of ideas from the text will be different depending on readers’ proficiency levels.

Hypothesis 5 was concerned with the interaction effect of text type and
proficiency level on recall of common ideas, main ideas, and non-main (unimportant) ideas, respectively. This hypothesis was tested using a two-way MANOVA, where text type and proficiency level were treated as independent variables and three kinds of recall scores served as dependent variables.

(1) In the recall of common ideas, mean scores for each group were as in Table 4.27 below.

Table 4.27: Means, Standard Deviations, and Sample sizes for each group in the recall of common ideas

<table>
<thead>
<tr>
<th>Text type</th>
<th>Proficiency level</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>High</td>
<td>32.68</td>
<td>7.047</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>20.75</td>
<td>7.745</td>
<td>20</td>
</tr>
<tr>
<td>SD</td>
<td>High</td>
<td>22.44</td>
<td>7.656</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>12.32</td>
<td>5.154</td>
<td>25</td>
</tr>
<tr>
<td>EL</td>
<td>High</td>
<td>22.91</td>
<td>5.822</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>18.50</td>
<td>7.012</td>
<td>10</td>
</tr>
</tbody>
</table>

The result of significance test for the recall scores indicated that there was a significant interaction effect at p < .05 as in Table 4.28.

Table 4.28: The significance test for common ideas recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text type x Proficiency</td>
<td>263.966</td>
<td>2</td>
<td>131.983</td>
<td>3.144</td>
<td>.047</td>
</tr>
</tbody>
</table>

Therefore, Hypothesis 5 was confirmed for the measure of recall of common
ideas. In other words, text type affected Korean EFL college students’ recall of common ideas differently depending on readers’ proficiency level. Thus, as compared to seductive details, while interesting elaborations significantly affected readers’ common ideas recall scores for less proficient students, they did not do so for more proficient students as shown in Figure 4.1.

Figure 4.1: The interaction effect of text type and proficiency level on common idea recall

![Graph showing the interaction effect of text type and proficiency level on common idea recall.](image)

Notes:
1. H denotes higher proficiency level and L denotes lower proficiency level
2. BA denotes baseline, SD denotes seductive details, and EL denotes interesting elaborations

(2) For the main idea recall, mean scores for each group were as shown in Table 4.29 below:
Table 4.29: Means, Standard Deviations, and Sample sizes for each group in the recall of main idea

<table>
<thead>
<tr>
<th>Text type</th>
<th>Proficiency level</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA High</td>
<td></td>
<td>13.91</td>
<td>2.180</td>
<td>22</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>10.80</td>
<td>2.821</td>
<td>20</td>
</tr>
<tr>
<td>SD High</td>
<td></td>
<td>11.89</td>
<td>2.494</td>
<td>18</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>7.96</td>
<td>2.731</td>
<td>25</td>
</tr>
<tr>
<td>EL High</td>
<td></td>
<td>12.52</td>
<td>1.806</td>
<td>23</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>11.00</td>
<td>3.266</td>
<td>10</td>
</tr>
</tbody>
</table>

Results indicated that there was not a significant interaction effect at p < .05 as shown in Table 4.30.

Table 4.30: The significance test for main ideas recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text type x Proficiency</td>
<td>24.374</td>
<td>2</td>
<td>12.187</td>
<td>1.940</td>
<td>.148</td>
</tr>
</tbody>
</table>

Therefore, hypothesis 5 was not confirmed for main idea recall. In other words, text type did not affect Korean EFL college students’ recall of main ideas differently depending on readers’ proficiency level.

(3) For the non-main (unimportant) ideas recall, mean scores for each group are shown in Table 4.31 below.
Table 4.31: Means, Standard Deviations, and Sample sizes for each group in the recall of non-main (unimportant) ideas

<table>
<thead>
<tr>
<th>Text type</th>
<th>Proficiency level</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>High</td>
<td>9.95</td>
<td>1.647</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>8.00</td>
<td>2.596</td>
<td>20</td>
</tr>
<tr>
<td>SD</td>
<td>High</td>
<td>9.22</td>
<td>2.211</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>7.64</td>
<td>2.139</td>
<td>25</td>
</tr>
<tr>
<td>EL</td>
<td>High</td>
<td>9.22</td>
<td>2.194</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>8.50</td>
<td>2.224</td>
<td>10</td>
</tr>
</tbody>
</table>

Results indicated that there was not a significant interaction effect at $p < .05$ as shown in Table 4.32.

Table 4.32: The significance test for non-main idea recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text type x Proficiency level</td>
<td>6.503</td>
<td>2</td>
<td>3.252</td>
<td>.689</td>
<td>.504</td>
</tr>
</tbody>
</table>

Therefore, hypothesis 5 was not confirmed for this measure as well.

**Hypothesis VI:** The effect of interesting details (SD and EL) on Korean college EFL readers’ recall of ideas from the text will be different depending on readers’ gender.

Hypothesis 6 was concerned with the interaction effect of text type and gender on recall of common ideas, main ideas, and non-main (unimportant) ideas, respectively. This hypothesis was tested using two-way MANOVA, where text type and gender were treated as independent variables and three kinds of recall scores as dependent variables.
(1) In the recall of common ideas, mean scores for each group were as in Table 4.33 below.

<table>
<thead>
<tr>
<th>Text type</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>24.48</td>
<td>9.537</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29.52</td>
<td>8.909</td>
<td>21</td>
</tr>
<tr>
<td>BA</td>
<td>Male</td>
<td>13.37</td>
<td>6.677</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>19.08</td>
<td>8.230</td>
<td>24</td>
</tr>
<tr>
<td>SD</td>
<td>Male</td>
<td>25.50</td>
<td>4.899</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>20.32</td>
<td>6.432</td>
<td>25</td>
</tr>
</tbody>
</table>

The result of significance test for the recall scores indicated that there was a significant interaction effect at p < .05 as in Table 4.34.

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text type x Gender</td>
<td>527.699</td>
<td>2</td>
<td>263.849</td>
<td>4.265</td>
<td>.016</td>
</tr>
</tbody>
</table>

Therefore, hypothesis 6 was confirmed for the common ideas recall measure. Text type affected Korean EFL college students’ recall of common ideas differently depending on readers’ gender. Thus, as compared to seductive details, while interesting elaborations significantly affected male readers’ recall of common ideas, they did not do so for female readers as shown in Figure 4.2.
(2) For the recall of main idea, mean scores for each group are shown in Table 4.35 below.

Table 4.35: Means, Standard Deviations, and Sample sizes for each group in the recall of main idea

<table>
<thead>
<tr>
<th>Text type</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>Male</td>
<td>12.24</td>
<td>2.791</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12.62</td>
<td>3.122</td>
<td>21</td>
</tr>
<tr>
<td>SD</td>
<td>Male</td>
<td>8.68</td>
<td>3.198</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>10.33</td>
<td>3.185</td>
<td>24</td>
</tr>
<tr>
<td>EL</td>
<td>Male</td>
<td>12.50</td>
<td>1.309</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>11.92</td>
<td>2.660</td>
<td>25</td>
</tr>
</tbody>
</table>

Results indicated that there was not a significant interaction effect at $p < .05$ as shown in Table 4.36.
Table 4.36: The significance test for main idea recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text type x Gender</td>
<td>20.512</td>
<td>2</td>
<td>10.256</td>
<td>1.209</td>
<td>.302</td>
</tr>
</tbody>
</table>

(3) For the recall of non-main ideas, mean scores for each group are shown in Table 4.37 below.

Table 4.37: Means, Standard Deviations, and Sample sizes for each group in the recall of non-main ideas

<table>
<thead>
<tr>
<th>Text type</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>Male</td>
<td>8.57</td>
<td>2.541</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>9.48</td>
<td>2.089</td>
<td>21</td>
</tr>
<tr>
<td>SD</td>
<td>Male</td>
<td>7.89</td>
<td>2.424</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>8.63</td>
<td>2.163</td>
<td>24</td>
</tr>
<tr>
<td>EL</td>
<td>Male</td>
<td>9.38</td>
<td>1.408</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>8.88</td>
<td>2.403</td>
<td>25</td>
</tr>
</tbody>
</table>

Results indicated that there was not a significant interaction effect at p < .05 as shown in Table 4.38.

Table 4.38: The significance test for non-main ideas recall score

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text type x Gender</td>
<td>8.267</td>
<td>2</td>
<td>4.133</td>
<td>.795</td>
<td>.454</td>
</tr>
</tbody>
</table>

Thus, Hypothesis 6 was confirmed for the common ideas measure but not for the main and non-main ideas measures.
CHAPTER 5
DISCUSSION AND CONCLUSIONS

This chapter will summarize and discuss the findings of the study.

Summary of the study

Many previous studies have found that the inclusion of unimportant but interesting segments, called seductive details, in a text negatively affects the recall of main ideas and learning of important information from the text. Other studies have maintained that seductive details do not necessarily interfere with text comprehension. With this on-going debate about the overall effect of seductive details in mind, this study attempted to extend understanding of the seductive details effect to L2 reading.

In addition, this study introduced the concept of interesting elaborations as a type of interesting details different from seductive details, and examined the relative effects of those two types of interesting details on EFL comprehension for Korean college students. Two other variables, proficiency level (higher and lower) and gender (male and female), were also examined for their effect on L2 reading comprehension. Recall protocols (recall of common ideas, main ideas, and non-main ideas) were used as a measure for reading comprehension.

Accordingly, this study aimed to address the following research questions:
1. Does the seductive details effect, which is believed to exist in L1 reading, exist in L2 reading, too? If it does, how will seductive details affect L2 reading comprehension?
2. If *seductive details* negatively affect L2 reading comprehension, how will *interesting* details affect L2 reading comprehension, positively or negatively?

3. How will proficiency level and gender affect L2 reading comprehension, as main effects and as interactions with the two types of interesting details?
The findings of this study are summarized in the following table.

Table 5.1: Summary of the findings

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variables</th>
<th>Common ideas</th>
<th>Main ideas</th>
<th>Non-main ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BA &gt; EL &gt; SD (p &lt; .01)</td>
<td>BA, EL &gt; SD (p &lt; .01)</td>
<td>ns *</td>
</tr>
<tr>
<td>Main effect</td>
<td>Text type</td>
<td>H &gt; L (p &lt; .01)</td>
<td>H &gt; L (p &lt; .01)</td>
<td>H &gt; L (p &lt; .01)</td>
</tr>
<tr>
<td></td>
<td>Proficiency</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Proficiency x Gender</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Interaction effect</td>
<td>Text type x Proficiency</td>
<td>p &lt; .05</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>Text type x Gender</td>
<td>p &lt; .05</td>
<td>ns</td>
<td>ns</td>
</tr>
</tbody>
</table>

Notes: * ns denotes ‘not significant’
Discussion of the findings

In this section, the findings will be discussed in light of the three research questions.

**Research Question 1**: Does the seductive details effect, which is believed to exist in L1 reading, exist in L2 reading, too? If it does, how will seductive details affect L2 reading comprehension?

In order to address Research Question 1, a hypothesis that seductive details would interfere with Korean college students’ recall of ideas from the text was tested in this study. As shown in Table 5.1, the performance of the students reading the BA (baseline) text was always higher than that of the SD (seductive details) group students, and it was significantly so for the measure of common ideas (p=.000) and main ideas (p=.000) recalled. Apparently, seductive details had a strong negative effect on L2 readers’ recall of ideas from text, interfering with the recall of main ideas or learning important ideas for L2 readers. This finding was consistent with the findings of a series of so-called seductive details studies (Garner, et al, 1989; Garner, et al., 1991; Harp & Mayer, 1998; Mayer, et al, 2001; Schraw, 1998; Wade & Adams, 1990; Wade, et al, 1993).

In order to overcome the design drawbacks in previous seductive details studies (for example, the lack of a between-group comparison as pointed out by Sadoski (1995), two between groups (students reading the baseline or seductive details text) were compared with each other on recall scores. One group of students read the passage
with *seductive details* while the other group of students read the one without *seductive details*. In fact, the SD (seductive details) group had one more extra sentence to read in each paragraph than the students in the EL group, with everything else equal. Thus, the students in the SD group read a slightly longer passage than those in the BA group.

During the recall session, students were asked to make a written recall of whatever they remembered from the text they had read. With regard to the recall of common ideas, significantly higher recall scores for the BA group when compared to the SD group meant that the baseline group recalled more idea units than the seductive details group. Actually, when compared to the baseline text, the seductive details version had one or two more idea units in each paragraph. However, to calculate the common idea score, the number of idea units recalled within each seductive-detail sentence were subtracted from the total number of idea units recalled, thus for the common idea score, the final number of idea units for either text version was equal in its count.

For the main idea recall, the students were asked to make a written recall of what they thought the main ideas were after reading each passage twice. The results indicated that the students in the baseline group performed significantly better than the students in the seductive details group. The findings provided apparent evidence for the negative effect of seductive details in college students’ L2 reading comprehension. In other words, the seductive details seemed to interfere with the recall of main ideas from the text. Considering that there was no difference in L2 reading proficiency level between the two groups, seductive details must have had a powerful negative impact on
the L2 reading process. With non-main idea recall, there was no significant difference between the two groups. In conclusion, seductive details were shown to be harmful to L2 comprehension as had been shown in L1. They had a harmful effect on the amount of recall (represented as the number of common ideas recalled) and interfered with grasping important ideas, not unimportant ideas, in L2 reading comprehension.

**Research Question 2:** If seductive details negatively affect L2 reading, how will interesting details affect L2 reading comprehension, positively or negatively?

As evidenced in the previous section, seductive details negatively affected L2 reading comprehension, especially for the recall of common ideas and main ideas from a text. In order to examine the effect of interesting elaborations on recall, a second hypothesis was tested in this study, that is, that interesting elaborations would facilitate Korean college students’ recall of ideas from a text.

Interesting elaborations, a term coined for this study, were ideas that were highly interesting like seductive details but highly important, relative to the main idea of a text, unlike seductive details that are relatively unimportant to the text. They both had the same high level of interestingness but they were different in their support for the main idea of the text. That is, interesting elaborations were designed to support the main idea of the text, whereas seductive details were not. Accordingly, it was expected that students who read the EL (interesting elaborations) text would recall more (especially main) ideas than those who read the BA (baseline) text.
Unexpectedly, however, the results indicated that the *interesting elaborations* did not facilitate L2 readers’ recall of text ideas. In the recall of common ideas, the BA group students recalled significantly more common ideas than the EL group students. Thus, interesting elaborations were found to have a negative effect on the amount of common ideas recalled. Perhaps, the EL group might have experienced more memory load in information processing or attentional resources because they had more idea units (or sentences) to be recalled with one more extra sentence for interesting elaborations in each paragraph.

However, in the recall of main ideas, interesting elaborations did not harm L2 readers’ recall of the text. The students in the EL group performed equally as well as those in the BA group, though not better. In this respect, interesting elaborations seemed distinct from seductive details in their role or function in L2 reading comprehension. Although the interesting elaborations did not benefit the college L2 readers’ recall of text as compared with a baseline text without interesting elaborations, they were more helpful than seductive details in L2 recall for common ideas and main ideas. Therefore, it does not seem inappropriate to claim that interesting elaborations are another type of interesting details different from seductive details.

**Research Question 3:** How will proficiency level and gender affect L2 reading comprehension, as main effects and as interactions with the two types of interesting details?
Hypotheses 2, 3, 4, 5, 6 were tested to address Research Question 3. That is, it was of interest whether proficiency and gender would affect L2 readers’ recall for text respectively and interactively with each other and with text type.

(1) \textit{The main effect of proficiency level}

Not surprisingly, as shown in Table 5.1, college EFL readers’ proficiency level (higher and lower) did have a significant influence on every dependent measure: recall scores for common ideas, main ideas, and non-main ideas. In other words, higher-proficiency level students always recalled significantly more common ideas, main ideas, and non-main ideas from the text than lower-proficiency level readers.

(2) \textit{The main effect of gender}

Gender (male and female) did not have any significant effect on any of the dependent measure: recall scores for common ideas, main ideas, and non-main ideas. Although female readers always had a higher score for every recall measure than male readers, the difference did not gain significance.

(3) \textit{The interaction effect of proficiency level and gender}

A two-way MANOVA procedure revealed that there was no interaction effect of
proficiency level and gender on any recall measure: common ideas, main ideas, and non-
main ideas respectively. It should be noted, however, that recall score differences due
to proficiency level was larger for men than women, though not significantly so.

(4) The interaction effect of text type and proficiency level

Hypothesis 5, that the effect of interesting details would be different across
proficiency levels was tested for this effect. Through the MANOVA procedure, as
shown in Figure 4.1 and Table 5.1, a significant interaction was found between text type
and proficiency level on L2 recall performance. However, this significant effect was
found only for the recall of common ideas, p < .05, but not for the recall of main ideas
and non-main ideas. For the purpose of explanation, Figure 4.1 is presented here as
Figure 5.1 again.
As shown in Figure 5.1 above, the students were negatively affected by seductive details regardless of their proficiency. However, interesting elaborations improved the performance of lower proficient readers while there was no effect on higher proficient readers. In other words, while interesting elaborations, as compared with seductive details, enhanced lower proficient readers’ recall score for common ideas, they did not for higher proficient readers. Therefore, when interesting details are relevant to and supportive of the main idea of a text, they have a greater effect on lower proficient readers’ recall than when they are neither related to nor support for the main idea of the text, even though the details inserted into the text are very interesting.

Note that this conclusion was drawn keeping in mind the fact that the students, even those in the low proficiency group, had enough ability to understand the text to be able to be influenced by text factors. In other words, these students were not suffering
from problems related to the Threshold Hypothesis (Lee & Schallert, 1997). The Threshold Hypothesis states that low second language (L2) proficiency blocks the transfer of first language (L1) reading strategies to the reading of L2 texts. However, the lower proficient group students, even though they were relatively low compared to the higher group, seem to be above the threshold point because their reading proficiency test scores were all above 3 points (total score is 12 points) based on the results of the proficiency test and they had no problems in reading the L2 text based on the analysis of their recall protocols.

(5) The interaction effect of text type and gender

As was true between text type and proficiency level, there was found a significant interaction effect of text type and gender on L2 readers’ recall of common ideas. Figure 4.2 is presented here as Figure 5.2 again as follows for the purpose of explanation.
As shown above in Figure 5.2, seductive details negatively affected the college students’ recall of common ideas from the L2 text regardless of their gender. In contrast, however, interesting elaborations enhanced the male students’ recall score for common ideas. Thus the men in the EL group performed as well as those in BA group. Rather, EL group students’ recall score for common ideas was slightly higher than that of BA group students. By contrast, female students had no performance difference between texts with seductive details and those with interesting elaborations. In this respect, female students were affected by interestingness of the text but they were not sensitive to the relevancy of interesting details to the main idea of the text. For main ideas or non-main ideas, there was no interaction effect between text type and gender.

In conclusion, a seductive details effect was found for these Korean college students’ L2 reading comprehension. Interesting details, though initially intended to
make the text more enjoyable, memorable, and comprehensible, did not influence L2 reading comprehension in a positive way when they were not supporting the main idea of the text. Considering that female students were not affected by interesting elaborations, compared to seductive details, interesting elaborations would perhaps have had a more powerful effect on (or would have facilitated) L2 reading comprehension if the same number of male and female students had been involved in this study. The number of male students and female students who participated in this study were 48 and 70 respectively. Especially for lower proficient male college students, enhanced level of text-based interest may be of great benefit to their L2 reading comprehension.

**Pedagogical Implications**

To begin with, results of this study may have implications for reading teachers who may be able to help EFL readers, especially male readers, to improve their reading comprehension through providing them or making them read texts that have interesting elaborations, not texts that have seductive details during reading instruction. Interesting details in a text seemed to enhance male readers’ recall when these were relevant to and supportive of the main idea of the text rather than when they were neither related to nor supportive of the main idea. It may be that teachers need to approach EFL readers differently based on gender difference in response to the text.

Lower proficient EFL readers will also gain the improvement of their reading comprehension if reading teachers pay more attention to selecting and providing more appropriate reading texts for their students. Unlike higher proficient readers, lower
proficient readers in this study seemed to be more sensitive to the relatedness of the ideas of a text. With interesting details in a text, the lower proficient readers’ reading comprehension was improved when the details supported the main idea of the text. Therefore, EFL reading teachers should have a different approach toward their students depending on their proficiency level. They can teach different reading strategies to the EFL students that are more appropriate based on their gender and proficiency level.

Next, EFL text developers or teaching material designers should be more careful about inserting interesting details into the text when they develop reading materials for EFL readers. Even though details in a text are very interesting, they may not be of much help to the EFL readers’ reading comprehension development if the details are not related to the main idea of the text. Rather, seductive details seem to harm EFL readers’ comprehension. Therefore, EFL text developers should try to make the ideas in a text coherent and correlated with each other when they develop reading materials, especially for low proficient male readers.

According to the results of this study, lower proficient EFL readers’ comprehension was higher when they read a text version that included interesting elaborations (EL) than when they read a version with seductive details (SD), and male EFL readers benefited more from the EL text version for their reading comprehension. Therefore, EFL readers may need to develop their own reading strategies to improve their reading comprehension skills.
Limitations of the study

Despite the meaningful implications for practical teaching and learning, this study has some limitations as well. The results of this study are not directly generalizable to every text genre because only expository text was used. And, as only Korean college students from two universities participated in this study, it may not be possible to generalize the results of this study to every age group and to every EFL college student.

Suggestions for further research

There are some suggestions for further research on the effect of interest on L2 reading comprehension. First, the text for this study was an expository text on Linus Pauling and Vitamin C. The use of different types of text or genres would possibly have a different effect on L2 comprehension. Second, the text for this study was pre-rated or predetermined by a different group of ESL students for the relative interestingness and importance of each sentence within a paragraph. Different results might occur if the participants themselves rated the text, in terms of interest and importance. Third, the use of delayed recall protocols, besides immediate recall, would allow a look at the effect of interest on retention of the important information in L2. Fourth, the use of diverse age groups would improve the generalizability of the research on the effect of interest on L2 reading.
APPENDICES

Appendix A. Reading Passage (Sentences) Rating

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Interestingness: not at all  

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(Paragraph 1)

1. With a gift of great intelligence from his parents, Linus Pauling first made his mark in the world of chemistry with his use of X-rays to examine the molecular structure of crystals.

2. He revolutionized chemistry in the 1920s with his application of quantum physics to the study of chemistry.

3. In his junior year of college, Pauling became an instructor of quantitative analysis course he had just taken as a sophomore and met his future wife when she was a student in his quantitative analysis class.

4. In 1979, when the respected British journal *New Scientist* included Linus Pauling, Ph.D., on its list of the twenty most important scientists of all time, it was for Pauling another in a long series of achievements that included an unprecedented pair of Nobel Prizes and some startlingly original contributions in biology, chemistry, and physics.
Appendix B. Prior Knowledge Test

Name (이름): ___________________

Please answer the following four questions in Korean or in English or in both (여러분의 배경지식을 알고자 하는 아래의 네 가지 질문에 대하여 자유롭게 아는 바를 답하시기 바랍니다 – 한글로 답하거나 영어로 답하거나 혹은 두 언어를 섞어서 답해도 상관없습니다)

1. Who is Linus Pauling? (라이너스 폴링이라는 사람에 대해서 아는 바를 적으시오)

2. What are ‘free radicals’ (‘유해산소’ 혹은 ‘발생기 산소’ 혹은 ‘활성산소 유리기’) in nutritional science and how do they do their damage in our body? (영양학이나 의학에서 사용하는 유해산소 (혹은 발생기 산소)란 무엇인가? 그리고 그 유해산소가 우리 몸 속에서 어떠한 해로운 일을 하는지 아는 대로 적으시오)

3. What are antioxidants? (항산화제란 무엇인지 아는 대로 적으시오)

4. What is vitamin C? (비타민 C가 무엇인지 아는 대로 적으시오)
Appendix C. Reading Proficiency Test

Please read passages and answer the questions following each passage (본문을 읽고 질문에 답하시오.)

Questions 1 – 4

Climate, more than any other single factor, determines the distribution of life on Earth. Climatic boundaries establish the limits within which organisms can survive. Plants, even more than animals, must be well adapted to climate in order to survive. They cannot move about or take shelter but must be equipped to endure whatever weather conditions are likely to occur. In the harsh conditions of the tundra, for example, low growing mosses, lichens, and a few flowering plants all hug the ground for shelter from icy winds.

Animals, despite their ability to move about and find shelter, are just as much influenced by climate as plants are. Creatures such as the camel and the penguin are so highly specialized that they have an extremely limited distribution. Others, such as bears, are flexible enough to adapt to a broad range of climates. Ocean-dwelling organisms are just as sensitive to climatic changes – in this case temperature and salinity – as land animals. Reef corals can survive only in clear warm seawater. Certain foraminifers are so sensitive to changes in their environment that their presence can be taken as an index of sea temperature. Human beings are among the least specialized of all animals and can live almost anywhere. Their clothes and their homes act as a sort of “miniature climate” that can be taken with them everywhere.

1. According to the passage, plants on the tundra grow close to the ground
   a) to avoid being eaten by arctic animals  
   b) because fertilizer is not readily available 
   c) to minimize exposure to the cold  
   d) because unfrozen water supplies are very scarce

2. According to the passage, which of the following can be found in the greatest number of different climate areas on Earth?
   a) Reef corals  
   b) Penguins  
   c) Bears  
   d) Camels
3. It can be inferred from the passage that foraminifers are a
a) kind of weather pattern          b) form of sea life
   c) species of tundra plant        d) type of miniature penguin

4. According to the passage, human beings can survive almost everywhere on Earth because
a) they have developed advanced forms of transportation
b) they have learned how to process seawater for drinking
c) their body temperature can vary considerably
d) their shelters and clothing help them to adapt to the environment

**Questions 5 - 8**

At the dawn of the twentieth century, the “universe” meant the Milky Way; our galaxy, most astronomers believed, encompassed all celestial bodies. By the time Edwin Hubble died in 1953, our concept of the cosmos had changed dramatically. Born in Missouri, Hubble spent his adult life in Southern California’s mountaintop observatories. Measuring the distances to mysterious spiral nebulae, long believed to be clouds of gas, Hubble soon established that they were actually other galaxies. This discovery, while destroying accepted theories of the universe, was only the start of Hubble’s pioneering research. As he systematically photographed the heavens and measured the distances between galaxies, Hubble discovered that the universe was exploding outward, with each more–distant galaxy hurtling away at proportionately greater speed. Hubble’s concept of the expanding universe brought us closer to understanding the origins of the universe and laid the foundation on which modern astronomy builds.

5. Which of the following is the most appropriate title for the passage?
   a) Hubble’s Contribution to Astronomy
   b) Hubble’s Conception of Spiral Nebulae
   c) The Infinite Universe
   d) Photographing the Universe
6. According to the passage, which of the following had greatly changed by the time Edwin Hubble died?
   a) The components of the universe  
   b) The behavior of the spiral nebulae
   c) People’s ideas about the cosmos  
   d) Observatories’ geographical locations

7. According to the passage, the farther away a galaxy is from the Earth, the
   a) faster it travels  
   b) easier it is to measure
   c) earlier it will be destroyed  
   d) more it resembles the Milky Way

8. It can be inferred from the passage that spiral nebulae were considered “mysterious” because scientists
   a) could not explain why the clouds had a spiral shape
   b) could not see through thick clouds of gas
   c) wished to keep the nebulae secret
   d) did not know what they really were

Questions 9 - 12

But the success of science, both its intellectual excitement and its practical application, depends upon the self-correcting character of science. There must be a way of testing any valid idea. It must be possible to reproduce any valid experiment. The character or beliefs of scientists are irrelevant; all that matters is whether the evidence supports their contentions. Arguments from authority simply do not count; too many authorities have been mistaken too often. I would like to see these very effective scientific modes of thought communicated by the schools and the media; and it would certainly be an astonishment and delight to see them introduced into politics. Scientists have been known to change their minds completely and publicly when presented with new evidence or new arguments. I cannot recall the last time a politician displayed a similar openness and willingness to change.
9. What does the passage mainly discuss?
   a) The rewards of intellectual excitement
   b) Practical applications of an abstract theory
   c) An important characteristic of science
   d) Some similarities between politics and science

10. What did the paragraph preceding the passage most probably discuss?
    a) The achievements of science    b) The scientific community
    c) Self-correction                 d) Faulty information

11. According to the passage, if a scientist repeats an experiment several times and does not produce similar results each time, the experiment must be
    a) extremely complex
    b) incorrectly recorded
    c) invalid
    d) scientific

12. The author implies that, in science, arguments from authority are
    a) irrelevant
    b) effective
    c) uncomplicated
    d) accountable
Appendix D. Reading Passage

(Baseline version)

With a gift of great intelligence from his parents, Linus Pauling first made his mark in the world of chemistry with his use of X-rays to examine the molecular structure of crystals. He revolutionized chemistry in the 1920s with his application of quantum physics to the study of chemistry. In 1979, when the respected British journal *New Scientist* included Linus Pauling, Ph.D., on its list of the twenty most important scientists of all time, it was for Pauling another in a long series of achievements that included an unprecedented pair of Nobel Prizes and some startlingly original contributions in biology, chemistry, and physics.

By the time of his death (he died at the age of 93), Pauling was probably better known for his more recent work on nutritional science and vitamin C. In best-selling books on vitamin C, the common cold and cancer, frequent talk show appearances, and numerous published papers and scientific presentations about a nutritional healing specialty he named ‘orthomolecular medicine,’ Pauling was an unparalleled, uniquely credentialed spokesman for the emerging science of diet and health. Many researchers have followed where he led in studying the role of vitamins and other nutrients in preserving health and fighting disease.

According to Pauling, vitamin C – ascorbic acid or sodium ascorbate or calcium ascorbate – is involved in a great number of biochemical reactions in the human body. Two of its major interactions are in potentiating the immune system and aiding the synthesis of the protein collagen, which is a very important substance that holds together the human body. Collagen strengthens the blood vessels, the skin, the muscles and the bones and we can’t make collagen without using up vitamin C.

Every person has the following things in their blood streams – cholesterol crystals, uric acid, liver spicules, blood sludge, yeast and fungus that are caused by factors in our environment. But the single biggest problem we have in our bodies and in our blood streams is “free radicals.” Free radicals, damaged atoms with an unpaired outer electron shell by the effects of oxidation, swim through our systems like out of control atoms and these unpaired electron bump into things, which does damage to cells throughout our entire body. They also steal electrons from other healthy atoms creating
more free radicals in the body.

Fortunately, however, there are nutritional agents that can help to prevent against oxidative damage in our body and help to repair cellular damage already done – antioxidants. Antioxidants play a significant role in our health, in our wellness and the reversal of the aging process, not just in our skin and appearances, but on the inside as well. Including antioxidants into our daily intake is highly beneficial to our body in many places like our eyes. While antioxidants are available in a healthy diet, it is difficult to get enough of them to fend off the damage caused by free radicals.

Though vitamins A, C, and E are known for years as important antioxidants, vitamin C is the most powerful antioxidant among them. As Irwin Stone pointed out, most animals, except humans, monkeys and apes, don’t rely on vitamin pills or on foods, because they manufacture vitamin C in their liver in amounts proportional to body weight. For an adult man the proportion turns out to be on the average about 10 or 12 grams (12000 mg) a day which is 200 times the amount people get in an ordinary diet. The RDA (Recommended Dietary Allowance), 60 mg, is far too small and indicates the importance of taking vitamin C supplements.

(Seductive details version)

With a gift of great intelligence from his parents, Linus Pauling first made his mark in the world of chemistry with his use of X-rays to examine the molecular structure of crystals. He revolutionized chemistry in the 1920s with his application of quantum physics to the study of chemistry. In his junior year of college, Pauling became an instructor of quantitative analysis course he had just taken as a sophomore and met his future wife when she was a student in his quantitative analysis class. In 1979, when the respected British journal New Scientist included Linus Pauling, Ph.D., on its list of the twenty most important scientists of all time, it was for Pauling another in a long series of achievements that included an unprecedented pair of Nobel Prizes and some startlingly original contributions in biology, chemistry, and physics.

By the time of his death (he died at the age of 93), Pauling was probably better known for his more recent work on nutritional science and vitamin C. During the Kennedy Administration, he was invited to a White House dinner honoring Nobel Prize
winners of the western hemisphere and later that evening, Pauling danced with Mrs. Kennedy. He wrote a book *Vitamin C and Common Cold* in 1970 when he was 70 years old and he continued to study the role of nutrition in fighting disease and worked to educate the public about the dangers of smoking and the benefits of vitamins. Many researchers have followed where he led in studying the role of vitamins and other nutrients in preserving health and fighting disease.

According to Pauling, vitamin C – ascorbic acid or sodium ascorbate or calcium ascorbate – is involved in a great number of biochemical reactions in the human body. Two of its major interactions are in potentiating the immune system and aiding the synthesis of the protein collagen, which is a very important substance that holds together the human body. Collagen strengthens the blood vessels, the skin, the muscles and the bones and we can’t make collagen without using up vitamin C. As the amount of essential minerals in the food we eat nowadays has been reduced alarmingly (up to 75 per cent less calcium) with modern farming methods, fruit and vegetables are not as good for us as they were 50 years ago.

Every person has the following things in their blood streams – cholesterol crystals, uric acid, liver spicules, blood sludge, yeast and fungus that are caused by factors in our environment. For our good memory, our brain needs to be continuously bathed in oxygen because the brain is one of the hungriest organs of our body. However, the single biggest problem we have in our bodies and in our blood streams is “free radicals.” Free radicals, damaged atoms with an unpaired outer electron shell by the effects of oxidation, swim through our systems like out of control atoms and these unpaired electrons bump into things, damaging cells throughout our entire body. They also steal electrons from other healthy atoms creating more free radicals in the body.

Fortunately, however, there are nutritional agents that can help to prevent against oxidative damage in our body and help to repair cellular damage already done – antioxidants. Antioxidants play a significant role in our health, in our wellness and the reversal of the aging process, not just in our skin and appearances, but on the inside as well. As our bodies are filled with so many preservatives (additives used to protect against decay, discoloration, or spoilage) from the foods we eat, it is said that it takes 50% less than it did 50 years ago to preserve a dead human body. Including antioxidants into our daily intake is highly beneficial to our body in many places like our eyes. While antioxidants are available in a healthy diet, it is difficult to get enough of
them to fend off the damage caused by free radicals.

Though vitamins A, C, and E are known for years as important antioxidants, vitamin C is the most powerful antioxidant among them. When we take lots of vitamins, we break wind (expel gas from the intestine) more often than usual, but we don’t need to worry about it because it does not give out any sound and it does not give off any smell at all. As Irwin Stone pointed out, most animals, except humans, monkeys and apes, don’t rely on vitamin pills or on foods, because they manufacture vitamin C in their liver in amounts proportional to body weight. For an adult man, the proportion turns out to be on the average about 10 or 12 grams (12000 mg) a day which is 200 times the amount people get in an ordinary diet. The RDA (Recommended Dietary Allowance), 60 mg, is far too small and indicates the importance of taking vitamin C supplements.

(Interesting elaborations version)

With a gift of great intelligence from his parents, Linus Pauling first made his mark in the world of chemistry with his use of X-rays to examine the molecular structure of crystals. He revolutionized chemistry in the 1920s with his application of quantum physics to the study of chemistry. At last he was awarded two separate unshared Nobel Prizes, one for Chemistry in 1954 and one for Peace in 1962. In 1979, when the respected British journal New Scientist included Linus Pauling, Ph.D., on its list of the twenty most important scientists of all time, it was for Pauling another in a long series of achievements that included an unprecedented pair of Nobel Prizes and some startlingly original contributions in biology, chemistry, and physics.

By the time of his death (he died at the age of 93), Pauling was probably better known for his more recent work on nutritional science and vitamin C. He wrote a book Vitamin C and Common Cold in 1970 when he was 70 years old and he continued to study the role of nutrition in fighting disease and worked to educate the public about the dangers of smoking and the benefits of vitamins. In best-selling books on vitamin C, the common cold and cancer, frequent talk show appearances, and numerous published papers and scientific presentations about a nutritional healing specialty he named ‘orthomolecular medicine,’ Pauling was an unparalleled, uniquely credentialed
spokesman for the emerging science of diet and health. Many researchers have followed where he led in studying the role of vitamins and other nutrients in preserving health and fighting disease.

According to Pauling, vitamin C – ascorbic acid or sodium ascorbate or calcium ascorbate – is involved in a great number of biochemical reactions in the human body. And vitamin C is used as an antioxidant for foods or it is made synthetically and used in the prevention and treatment of a disease like ‘scurvy’ that is marked by spongy gums, loosening of the teeth. Two of its major interactions are in potentiating the immune system and aiding the synthesis of the protein collagen, which is a very important substance that holds together the human body. Collagen strengthens the blood vessels, the skin, the muscles and the bones and we can’t make collagen without using up vitamin C.

Every person has the following things in their blood streams – cholesterol crystals, uric acid, liver spicules, blood sludge, yeast and fungus that are caused by factors in our environment. But the single biggest problem we have in our bodies and in our blood streams is “free radicals.” Free radicals, damaged atoms with an unpaired outer electron shell by the effects of oxidation, [Have you ever cut an apple and left it exposed to air for a short period of time? You probably noticed right away that the apple starts turning brown. The rusting of metals, the spoilage of foods are other common examples of this oxidation process] swim through our systems like out of control atoms and these unpaired electron bump into things, which does damage to cells throughout our entire body. They also steal electrons from other healthy atoms creating more free radicals in the body.

Fortunately, however, there are nutritional agents that can help to prevent against oxidative damage in our body and help to repair cellular damage already done – antioxidants. Antioxidants play a significant role in our health, in our wellness and the reversal of the aging process, not just in our skin and appearances, but on the inside as well. Including antioxidants into our daily intake is highly beneficial to our body in many places like our eyes. As our eyes are bombarded with radiation all day long and our eyes have more antioxidants than anywhere else in our body, we would go blind without antioxidants. While antioxidants are available in a healthy diet, it is difficult to get enough of them to fend off the damage caused by free radicals.

Though vitamins A, C, and E are known for years as important antioxidants,
vitamin C is most powerful antioxidant among them. As Irwin Stone pointed out, most animals, except humans, monkeys and apes, don’t rely on vitamin pills or on foods, because they manufacture vitamin C in their liver in amounts proportional to body weight. For an adult man the proportion turns out to be on the average about 10 or 12 grams (12000 mg) a day which is 200 times the amount people get in an ordinary diet. The RDA (Recommended Dietary Allowance), 60 mg, is far too small and indicates the importance of taking vitamin C supplements. Cameron and Pauling gave 10 grams of vitamin C a day to patients with untreatable, terminal cancer and compared them with the other patients with the same kind of cancer at the same terminal stage who didn’t take vitamin C, and they found that their patients lived an average of about six years while the other patients lived an average of six months, after they were pronounced terminal.
Appendix E. Recall Sheet

(For paragraph 1)

Name: ________________

Please write down everything you remember from the passage you’ve just read. (방금 읽은 본문의 내용을 회상하여 여러분이 기억하는 모든 것을 다 적으시오 (영어로 혹은 한국어로 혹은 두 언어를 섞어서 사용해도 무방함)
Appendix F. Reading Comprehension Test

**Baseline version**

Please answer the following questions in English or in Korean or in both. 아래의 질문들에 답하시오. (영어로 답하거나 한국어로 답하거나 혹은 두 언어를 섞어서 답하거나 상관없습니다)

(for paragraph 1)

1. Which British journal included Linus Pauling on its list of the twenty most important scientists of all time. (우리시대 가장 중요한 20명의 과학자 명단에 Linus Pauling을 올린 영국 저널의 이름은 무엇인가?)
2. According to the passage you’ve read, who is Linus Pauling? (본문에 의하면 라이너스 폴링은 누구이며 어떤 사람인가?)

(for paragraph 2)

1. According to the passage you’ve read, at what age did Linus Pauling die? (본문에 의하면 라이너스 폴링은 몇 세에 세상을 떠났습니까?)
2. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)

(for paragraph 3)

1. According to the passage you’ve read, what does collagen do for the body? (본문에 의하면 콜라겐은 우리 몸에서 어떤 일을 합니까?)
2. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)
(for paragraph 4)

1. According to the passage you’ve read, what kind of things does every person have in their blood streams? (본문에 의하면 사람들의 혈관속에는 어떤 것들이 있습니까?)
2. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)

(for paragraph 5)

1. According to the passage you’ve read, what causes cellular damage? (본문에 의하면 무엇 때문에 세포가 손상됩니까?)
2. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)

(for paragraph 6)

1. According to the passage you’ve read, which vitamins are antioxidants? (본문에 의하면 어떤 비타민들이 항산화제입니까?)
2. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)
Seductive details version

(for paragraph 1)

1. According to the passage you’ve read, how did Linus Pauling meet his future wife? (본문에 의하면 라이너스 폴링은 어떻게 그의 아내를 만났습니까?)

2. Which British journal included Linus Pauling on its list of the twenty most important scientists of all time? (우리시대 가장 중요한 20명의 과학자 명단에 Linus Pauling을 올린 영국 저널의 이름은 무엇인가?)

3. According to the passage you’ve read, who is Linus Pauling? (본문에 의하면 라이너스 폴링은 누구이며 어떤 사람인가?)

(For paragraph 2)

1. According to the passage you’ve read, what happened to Linus Pauling during the Kennedy Administration? (본문에 의하면 미국 케네디 정권 당시 라이너스 폴링에게 어떤 일이 있었습니까?)

2. According to the passage you’ve read, at what age did Linus Pauling die? (본문에 의하면 라이너스 폴링은 몇 세에 세상을 떠났습니까?)

3. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)

(For paragraph 3)

1. According to the passage you’ve read, what happened to the food with modern farming methods? (본문에 의하면 현대 농법 때문에 우리가 먹는 음식에 어떤 일이 생겼습니까?)

2. According to the passage you’ve read, what does collagen do for the body? (본문에 의하면 콜라겐(교원질)은 우리 몸에 어떤 일을 할까요?)

3. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)
1. According to the passage you’ve read, what does the brain need to be done for our good memory? (본문에 의하면 뇌가 어떤 상태에 있을 때 우리의 기억능력이 좋아짐니까?)
2. According to the passage you’ve read, what kind of things does every person have in their blood streams? (본문에 의하면 사람들의 혈관속에는 어떤 것들이 있습니까?)
3. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)

(For paragraph 5)

1. According to the passage you’ve read, why does it take 50% less than it did 50 years ago to preserve a dead human body? (본문에 의하면 죽은 사람의 시체를 엽(썩지 않게 소금에 절임)하는데 걸리는 시간이 50년 전보다 절반으로 줄어든 이유는 무엇입니까?)
2. According to the passage you’ve read, what causes cellular damage? (본문에 의하면 무엇 때문에 세포가 손상됩니까?)
3. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)

(For paragraph 6)

1. According to the passage you’ve read, what happens if you take lots of vitamins? (본문에 의하면 우리가 많은 양의 비타민을 섭취할 때 어떤 일이 일어나니까?)
2. According to the passage you’ve read, which vitamins are antioxidants? (본문에 의하면 어떤 비타민들이 항산화제입니까?)
3. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)
Interesting elaborations version

(For paragraph 1)

1. According to the passage you’ve read, how many and what kind of Nobel Prizes was Linus Pauling awarded? (본문에 의하면 라이너스 폴링은 어떤 분야에서 몇 개의 노벨상을 받았습니까?)

2. Which British journal included Linus Pauling on its list of the twenty most important scientists of all time? (우리시대 가장 중요한 20명의 과학자 명단에 Linus Pauling을 올린 영국 저널의 이름은 무엇인가?)

3. According to the passage you’ve read, who is Linus Pauling? (본문에 의하면 라이너스 폴링은 누구이며 어떤 사람인가?)

(For paragraph 2)

1. According to the passage you’ve read, what kind of book did Linus Pauling write about when he was 70 years old and what did he educate the public about? (본문에 의하면 라이너스 폴링은 70세 때 무엇에 관한 책을 썼습니까? 그리고 일반 대중들에게 무엇을 교육하였습니까?)

2. According to the passage you’ve read, at what age did Linus Pauling die? (본문에 의하면 라이너스 폴링은 몇 세에 세상을 떠났습니까?)

3. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)

(For paragraph 3)

1. According to the passage you’ve read, what can vitamin C be used for? (본문에 의하면 비타민 C는 무슨 용도로 사용될 수 있습니까?)

2. According to the passage you’ve read, what does collagen do for the body? (본문에 의하면 콜라겐은 우리 몸에 어떤 일을 할까요?)

3. What is the main idea of the passage you have just read? (방금 읽은 본문의 중심내용을 서술하시오)
(For paragraph 4)

1. According to the passage you’ve read, what are the examples of ‘oxidation’ process? 
(본문에 의하면 산화과정을 보여주는 예들은 어떤 것이 있습니까?)
2. According to the passage you’ve read, what kind of things does every person have in their blood streams? 
(본문에 의하면 사람들의 혈관속에는 어떤 것이 있습니까?)
3. What is the main idea of the passage you have just read? 
(방금 읽은 본문의 중심내용을 서술하시오)

(For paragraph 5)

1. According to the passage you’ve read, what happens if we don’t have antioxidants in our eyes? 
(본문에 의하면 우리 눈 속에 항산화제가 없을 경우에 어떤 일이 일어남니까?)
2. According to the passage you’ve read, what causes cellular damage? 
(본문에 의하면 무엇 때문에 세포가 손상될까요?)
3. What is the main idea of the passage you have just read? 
(방금 읽은 본문의 중심내용을 서술하시오)

(For paragraph 6)

1. According to the passage you’ve read, what happened to the patients who took vitamin C compared to the patients who didn’t take vitamin C after they were pronounced terminal? 
(본문에 의하면 말기 암 환자 선고를 받은 후 비타민 C를 섭취하지 않은 환자와 비교하여 비타민 C를 섭취한 환자에게 어떤 일이 생겼습니까?)
2. According to the passage you’ve read, which vitamins are antioxidants? 
(본문에 의하면 어떤 비타민들이 항산화제입니까?)
3. What is the main idea of the passage you have just read? 
(방금 읽은 본문의 중심내용을 서술하시오)
BIBLIOGRAPHY


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