



**Incidental Vocabulary Acquisition through Word-Frequency  
Controlled Reading: A Case Study of Thai  
Grade 9 EFL Students**

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**A Thesis Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Arts in Applied Linguistics**

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Controlled Reading: A Case Study of Thai Grade 9 EFL  
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ชื่อวิทยานิพนธ์	การรับรู้คำศัพท์โดยไม่เจตนาจากการอ่านที่มีการควบคุมความถี่ของคำศัพท์ เป้าหมาย กรณีศึกษาของนักเรียนไทยในระดับชั้นมัธยมศึกษาปีที่3 ที่เรียนภาษาอังกฤษในฐานะภาษาต่างประเทศ
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## บทคัดย่อ

วัตถุประสงค์ของการวิจัยครั้งนี้เพื่อศึกษาผลของการอ่านที่มีการควบคุมความถี่ของคำศัพท์เป้าหมาย ที่ส่งผลต่อการรับรู้คำศัพท์โดยไม่เจตนาและปัจจัยที่มีอิทธิพลในการเรียนรู้คำศัพท์ อีกทั้งสำรวจกลวิธีในการเรียนรู้คำศัพท์ที่ใช้บ่อยที่สุดของนักเรียนสิบคนที่มีผลสัมฤทธิ์สูงสุดในการเรียนคำศัพท์เป้าหมายจำนวน 30 คำ กลุ่มตัวอย่างเป็นนักเรียนชั้นมัธยมศึกษาปีที่ 3 จำนวนสามสิบคน ที่มีความสามารถทางภาษาอังกฤษในระดับปานกลาง ในการทดลองเป็นเวลาห้าสัปดาห์ โดยนักเรียนกลุ่มตัวอย่างอ่านเรื่องสิบเรื่องที่มีคำศัพท์เป้าหมายสามสิบคำเดิมในแต่ละเรื่อง เรื่องที่ใช้อ่านทั้งสิบเรื่องได้รับการดัดแปลงเพื่อสอดแทรกคำศัพท์เป้าหมายทั้งสามสิบคำลงในทุกๆเรื่อง โดยยังคงเนื้อเรื่องเดิมไว้ เครื่องมือที่ใช้ในการวิจัยมี 3 ชนิด ได้แก่ แบบทดสอบการแปลก่อนและหลังการทดลอง แบบทดสอบความเข้าใจคำศัพท์ในบริบทก่อนและหลังการทดลอง และการสัมภาษณ์ปากเปล่าหลังการทดลอง

ข้อค้นพบจากการวิจัยสามารถสรุปได้ดังนี้

1. นักเรียนรับรู้ความหมายของคำศัพท์เป้าหมายโดยเฉลี่ย 75.88% และเข้าใจคำศัพท์เป้าหมายในระดับเฉลี่ย 47.77% หลังการอ่าน
2. คำกริยา และ คำวิเศษณ์ พบว่าเป็นประเภทของคำที่ยากที่สุดในการรับรู้ของนักเรียน ผลจากการทดสอบการแปล คำคุณศัพท์เป็นประเภทของคำที่ง่ายที่สุดสำหรับนักเรียนในการทำความเข้าใจ คือที่ระดับ 85.9% และผลการทดสอบความเข้าใจคำศัพท์ในบริบทพบว่านักเรียนกลุ่มตัวอย่างเข้าใจคำศัพท์ที่ระดับ 60% ผลการทดสอบการแปลชี้ให้เห็นว่านักเรียนมีแนวโน้มในการรับรู้คำที่มีความหมายเชิงรูปธรรมได้ดีกว่า คือที่ระดับ 67.4% และจากผลการทดสอบความเข้าใจคำศัพท์ในบริบท ที่ระดับ 56.6% นอกจากนั้นยังพบว่าคำศัพท์ที่มีเพียงหนึ่งความหมายและเป็นคำที่มีหน้าที่ยของคำเพียงหน้าที่เดียวทำให้นักเรียนรับรู้คำศัพท์โดยไม่เจตนาได้ง่ายขึ้น และยังพบว่านักเรียนกลุ่มตัวอย่างรับรู้คำศัพท์ที่สะกดด้วยตัวอักษรเจ็ดถึงเก้าตัวอักษรซึ่งเป็นคำที่มีความยาวปานกลางได้ในอัตราสูงที่สุด คือที่ 79.78%
3. ผลจากการสัมภาษณ์ปากเปล่าแสดงให้เห็นว่าระหว่างกลวิธีการเรียนรู้คำศัพท์ทั้งสี่วิธี (แหล่งที่มาของข้อมูล การใช้พจนานุกรม การท่องจำและการฝึกใช้ และอื่นๆ) แหล่งที่มาของข้อมูล และการใช้พจนานุกรมเป็นกลวิธีที่นิยมที่สุดในกลุ่มผู้ที่มีผลสัมฤทธิ์สูงสุดทั้งสิบคน ซึ่งทั้งสองวิธีมีค่าเฉลี่ย 25% กลวิธีของการเดาคำศัพท์จากบริบทเพื่อหาความหมายของคำศัพท์ซึ่งเป็นกลวิธีย่อยในหมวดแหล่งที่มาของข้อมูล เป็นกลวิธีที่ใ้มากที่สุดจากผู้ให้คำตอบ โดยมีค่าเฉลี่ยที่ 60% นักเรียนใช้กลวิธีนี้เพราะเป็นวิธีที่เป็นรูปธรรมและสามารถ

นำไปประยุกต์ใช้ระหว่างการอ่านเพื่อทำความเข้าใจได้ ในทางกลับกัน กลวิธีอื่นๆ โดยเฉพาะสองกลวิธีย่อย กล่าวคือ จากการดูโทรทัศน์ และการเรียนรู้จากการอ่านฉลากสินค้าเป็นวิธีที่ใช้น้อยที่สุดคือเพียง 10%

4. ความถี่ของคำศัพท์ที่ปรากฏในเรื่องอ่านอย่างน้อยหกครั้ง (ค่าเฉลี่ย = 6.35) เป็นความถี่ที่นักเรียนสามารถรับรู้คำศัพท์แบบไม่ตั้งใจได้ โดยเฉพาะคำที่มีความหมายเชิงรูปธรรมและเป็นคำที่มีเพียงหน้าที่เดียว

งานวิจัยที่ศึกษาในแขนงนี้จะช่วยพัฒนาสื่อการสอนที่จัดเตรียมให้ดีขึ้น เพื่อส่งเสริมความรู้ด้านคำศัพท์ของผู้เรียน อย่างน้อยที่สุดในด้านความหมายของคำศัพท์ แต่เนื่องจากชนิดของจำนวนคำศัพท์เป้าหมายในการศึกษาครั้งนี้มีจำนวนต่างกัน จึงจำเป็นต้องได้รับการรับรองผลความถูกต้องจากการวิจัยครั้งต่อไปก่อนที่จะได้รับการสรุปผล ซึ่งการคัดเลือกคำศัพท์เป้าหมายอาจจะถูกควบคุมอย่างรอบคอบโดยใช้คำศัพท์ชนิดเดียวกันมาทดสอบ

<b>Thesis Title</b>	Incidental Vocabulary Acquisition through Word-Frequency Controlled Reading: A Case Study of Thai Grade 9 EFL Students
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<b>Major Program</b>	Applied Linguistics
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### **ABSTRACT**

The purposes of this study were to investigate the effect of word-frequency controlled reading on students' incidental vocabulary acquisition and the influential factors on word learning. It also explored vocabulary learning strategies which the ten most successful students frequently employed in order to acquire thirty target words. The subjects of this study were thirty participants with moderate English proficiency. Over a period of five weeks, the subjects read ten pieces of reading material, each containing the same thirty target words. The reading materials were adapted in order to incorporate the thirty target words into each text without changing their original contents. Data were collected utilizing three research instruments: pre- and post-translation production tests, pre- and post-word comprehension in context tests, and a post-oral interview.

The findings of the study can be summarized as follows:

1. The students acquired an average of 75.88% of the target words' meanings and comprehended an average of 47.77% after the reading treatment.
2. Verbs and adjectives were found to be the most difficult word classes for the students to acquire. Adverbs were the easiest word class for them to understand; 85.9% on the translation production test and 60% on the word comprehension in context test. Concrete words were acquired slightly better by the students, at a rate of 67.4% on the translation-production test than on the word comprehension in context test—at a rate of 56.6%. Moreover, words which had only one concept and which belonged to just one part of speech were easier for the students to acquire incidentally.

Finally, the words containing seven to nine letters (moderate length) were acquired at the highest rate, 79.78%.

3. Data interpreted from the oral interviews indicated that among the four vocabulary learning strategies (information sources, dictionary use, memorizing and practice, and others), information sources and dictionary use were the most popular strategies among the top ten most successful students, being used 25% of the time. Specifically, guessing word meaning from context, which was a sub-strategy in the information source category, was the most frequently employed by the respondents, at a rate of 60%. This particular strategy was chosen by the students because it was considered concrete and feasible to apply during the reading comprehension process. By contrast, other vocabulary strategies especially the two sub-strategies including encountering on TV and learning from a product label were employed the least at only 10%.

4. The majority of subjects reported that they would probably acquire the meanings of words which occurred in a treatment at least six times (mean = 6.35), especially words with less abstract meanings and those which belonged to only one part of speech.

Further research studies in this area would help develop better prepared materials to foster learners' vocabulary knowledge at least as regards meaning. Since a number of the target words used varied in function, such findings need to be verified by further research before any generalizations can be made. The selection of target words may be more carefully controlled by using the same class of word to be tested.

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# CHAPTER 1

## INTRODUCTION

This thesis presents a study on the effect of word-frequency controlled reading to develop Thai grade 9 EFL students' ability in vocabulary acquisition through the use of ten pieces of adapted reading material. The introduction consists of the research rationale, its purposes, the research questions, the significance of the study, the expected results, the scope and limitations, and a definition of key terms in the study.

### 1.1 Rationale for the Study

Lexical knowledge is considered an important part of the foundation of language learning including learning English as a Second Language (ESL) and English as a Foreign Language (EFL). Mastering a new word certainly involves such commonsense abilities as form recognition (pronunciation, spelling, derivations) and knowing its dictionary meaning. Knowledge of its specific grammatical properties, however, as well as the ability to use the word appropriately in certain contexts, and its functions (frequency and appropriateness), are all part of the mastery process (Nation, 1990; Oxford & Scarcella, 1994).

One way ESL/EFL learners acquire new words is through the use of their schemata, which include a repertoire of lexical sets. Exposure to target language inputs, particularly in the form of reading texts, is another way a learner's vocabulary develops (Laufer, 2001). Research has indicated that during the reading process, the language learning skill most frequently employed by students is the acquisition of new vocabulary (Hayes & Ahrens, 1988). Thus, vocabulary learning is presumably a part of a student's responsibility in EFL learning, and as such exposure to reading is the primary driver of vocabulary acquisition (Waring, 2000).

With regard to Thai EFL learners, deficiency of vocabulary knowledge has long been a significant problem for most students, both young and adults (Sawangwaroros, 1984; Navasumrit, 1989; Sripetpun, 2000; Opasruttanakorn, 2005). At primary and secondary levels, grammar and reading are the skills mainly emphasized in the typical EFL classroom in Thailand, with vocabulary receiving little direct focus, but instead being taught concurrently with the aforementioned skills (Sawangwaroros, 1984; Navasumrit, 1989; Moran, 1991). Time constraints on teaching, is the main reason for this ancillary instructional treatment (Moran, 1991). Clearly, if ESL/EFL learners possess only limited vocabulary, they can hardly employ target language structures or functions to achieve successful communication (Opasruttanakorn, 2005). It is due to this fact that Thai EFL learners usually encounter major problems in their studies. Inevitably, learners' lexical limitations lead to learners' minimal success (Navasumrit, 1989).

The circumstances in Thailand are not conducive to Thai learners acquiring the skill to use English realistically (Sripetpun, 2000). They usually have to read English printed texts in class in reading courses. These reading materials rarely control the frequency of target words occurring in the texts but rather recycle them in post-reading activities such as gap-filling exercises, multiple choice exercises, and short-sentence writing exercises. However, these activities do not provide adequate exposure to word learning because of limitations on teaching time and target word occurrence in reading materials.

Different techniques of direct vocabulary instruction have been employed to solve such problems, such as using the vocabulary card-card-box technique (Tassana-ngam, 1994), learning the individual meanings of target words, and deriving the meaning of words from context (Wimolkasem, 1992). Despite its proven effectiveness, direct vocabulary instruction suffers the criticism of decontextualization, and appears to be inadequate to equip learners in ESL/EFL classrooms with a basic vocabulary of 3000-5000 word families, demanded by most English textbooks used in most EFL classes in secondary/high schools (Nation & Waring, 1997). Therefore, incidental vocabulary learning through text processing is viewed as one solution.

The notion of incidental vocabulary acquisition can be said to correspond to implicit and/or explicit learning as it is discussed in second language (L2) and foreign language (FL) pedagogy. Incidental vocabulary acquisition generally refers to learning vocabulary while engaging in any activity which is not directly aimed at committing lexical information to memory (Hulstijn, 2001). One way of enhancing incidental vocabulary learning is to provide several reading activities so that ESL/EFL learners can discover new lexical items. Numerous studies have focused on vocabulary acquisition through text processing. Specifically, the frequency of exposure to the unknown words in a text has a significant impact on the retention of word meanings. Language learners usually acquire many words that are repeated often in a particular text. In order to better increase word learning, texts can be purposely organized so as to increase exposure to new vocabulary, and this can be done without affecting text content (Kim, 2006). One effective way of establishing and strengthening lexical knowledge is to simply use repetitions of words throughout several texts (Rott, 2007).

A moderate rate of word frequency in reading i.e. six to eight encounters have been shown to be sufficient for low to middle proficiency EFL learners to internalize an unknown word (Rott, 1999; Zahar et al., 2001). Incidental vocabulary acquisition, then, can be achieved by repeatedly encountering new words in multiple texts (Rott, 1999; 2007; Zahar et. al, 2001; Waring & Takaki, 2003). Previous research also suggests that the design of instructional materials for vocabulary acquisition should provide consistent and frequent exposure to the target vocabulary.

However, vocabulary exposure experiments encounter many deficiencies; particularly in quality control of test construction, target word exposure, and control of ability level (Waring, 2000). Most L2 incidental vocabulary acquisition studies (Saragi et al., 1978; Ferris, 1988; Dupuy & Krashen, 1993) have been criticized for a number of limitations (Raptis, 1997; Hunt & Beglar, 2005), most of which are also acknowledged by the researchers themselves. One example is the usage of measuring instruments which are unable to detect small gains in learning (Nation, 2001). For example, Pitts et al. (1989) commented that their measuring instrument was designed in such a way that

rendered the knowledge gained partially useless. Moreover, they did not adequately control text difficulty (Nation, 2001). In another study, Pitts et al. (1989), reported that over 50% of the participants failed to finish reading the assigned chapters. The number of target words has also been identified as an issue, for example; only seventeen words were tested by Day et al. (1991).

Even though the problem of target vocabulary control in designing reading materials requires intellectual intervention and time allocation, further revision of editorial versions would better facilitate natural learning of the target vocabulary. From this perspective, the same target words should be added to each text equally, so that learners can more easily acquire the vocabulary. In addition, previous studies distributed the target words throughout texts simply randomly, resulting in a lack of frequency control (Fukkink et al., 2001; Waring & Takaki, 2003; Pigada & Schmitt, 2006; Rott, 2007). Min (2008) suggested that when it comes to enhancing target vocabulary acquisition among EFL secondary students, reading texts accompanied by post-reading exercises, are more effective and efficient than reading texts alone. Previous research indicates that learners obtain some knowledge of new vocabulary items from reading a text alone, but the studies have little to say about how or why the words were learned.

The current study is, therefore, based on the assumption that an adequate and consistent frequency of words occurring in reading materials is an indispensable feature of acquiring a large amount of vocabulary in the language learning process. The study sets out firstly, to investigate the effect of providing ten word-frequency controlled readings with a variety of content, on students' vocabulary acquisition as well as examining their possible influential factors affecting word learning. Secondly, it aims to discover the most frequently used strategies employed by the top ten most successful students and how they achieved their lexical knowledge. It is hoped that the findings will provide some important implications for EFL pedagogy in Thailand.



## **1.2 Purposes of the Study**

(1) To investigate the effect of reading with controlled word frequency on the students' vocabulary acquisition, as measured by the scores of the subjects on the pre- and post-tests which include a word meaning test and a word comprehension test.

(2) To examine the factors affecting the subjects' incidental vocabulary acquisition.

(3) To explore the strategies the subjects use in acquiring target words.

## **1.3 Research Questions**

(1) Will the subjects incidentally acquire target words through reading with controlled word frequency? If so, what kind of vocabulary will they acquire the most and how?

(2) What strategies will the subjects use to determine the target word definitions and achieve word comprehension?

## **1.4 Significance of the Study**

The present study aims to investigate the ability of Thai grade 9 EFL students in incidentally acquiring target vocabulary contained in ten reading texts. The results of this research are expected to apply to other EFL students. Therefore it will assist EFL teachers in making decisions about preparing reading materials as well as adapting appropriate texts to aid vocabulary acquisition.

## **1.5 Expected Results**

It is expected that the results obtained from this study will be able to be applied in Thai EFL pedagogy to reevaluate the way English teachers teach reading and vocabulary, especially with regard to vocabulary acquisition from text processing. In particular, it is expected that:

(1) The subjects will incidentally acquire the thirty target words, in terms of their meanings and the subjects' comprehension of them, as a result of the word-frequency controlled readings.

(2) Factors affecting the subjects' incidental vocabulary acquisition such as parts of speech, word classes, word length in letters, and word concepts will be discovered.

(3) The vocabulary learning strategies which the top ten highest achievers employ to comprehend the thirty target words and determine their definitions will be discovered.

### **1.6 Scope and Limitations of the Study**

The following constraints need to be taken into account in the present study:

(1) The present study focused only on the subjects' ability in acquiring thirty target words through ten frequency-controlled readings. No other non-relevant vocabulary was tested.

(2) It was designed to investigate only two aspects of word knowledge: word meaning and word comprehension in context.

(3) It was limited to grade 9 EFL Thai learners in a secondary school in Hat Yai, where the situation and context might differ from those in other age groups, proficiency levels, and locations.

(4) The subjects of the study did not constitute a large group of students. Therefore, the findings should be taken as tentative rather than conclusive.

### **1.7 Definition of Terms**

(1) **Incidental Vocabulary Acquisition (IVA)** is implicit vocabulary learning in which learners are engaged in activities which focus on understanding a text rather than on vocabulary alone.

(2) **Word Frequency Controlled Reading** refers to the ten reading texts containing the thirty target words as well as the accompanying exercises. The thirty target words were included in each piece of reading material equally.

(3) **Translation Production Test** refers to the L2 to L1 meaning translation test designed to measure the subjects' ability to convert the word meanings of the thirty target words from English into Thai.

(4) **Word Comprehension in Context Test** refers to a gap-filling test requiring students to fill in the fifteen blanks by selecting from the fifteen provided target words and five additional distracters. It was designed to assess the students' ability to understand the fifteen random target words (their meanings, functions, and usage) in context when they were encountered during reading.

## **CHAPTER 2**

### **LITERATURE REVIEW**

The concept of vocabulary acquisition through reading is broad and involves many aspects of education. This chapter provides a related literature review to support the study of the effect of providing controlled word-frequency exposure in reading on the students' ability to learn the target vocabulary as well as explore the successful learners' strategies in acquiring these words. Five aspects relevant to this study are reviewed to provide a general background for the study. The terminological issues about intentional and incidental vocabulary acquisition in ESL/EFL learning, research on incidental word learning through reading, the role of exposure to word learning through reading, the function of context as an influence on vocabulary acquisition in reading, and the vocabulary strategies employed during the reading process are reviewed.

#### **2.1 Intentional and Incidental Vocabulary Acquisition**

The process of vocabulary acquisition in ESL/EFL pedagogy has been discussed in terms of language development and lexical growth. Related to this is a clear distinction between intentional and incidental vocabulary learning. The former refers to a learning process in which the student consciously plans to learn new words, and is actively engaged in word learning, for example, by establishing their L1 translations with the intent of memorizing their forms and meanings (Hutch & Brown, 1995). All prepared learning tasks and activities are considered intentional learning. In other words, performing an activity that is primarily intended to build lexical knowledge by memory could be considered as the definition of intentional vocabulary learning (Hulstijn, 2001). Intentional learning is quick, and therefore usually preferred by learners, but it is also superficial. Learners encounter vocabulary in an isolated, often basic form of words and remain largely incapable of using them correctly in

context. Moreover, intentionally learned vocabulary tends to fade quite quickly from memory.

Incidental vocabulary acquisition, on the contrary, stems mainly from reading and listening activities. In Ellis's view (1994), the notion of incidental vocabulary acquisition is an unconscious vocabulary learning process which is a by-product of an intentional activity conducted for a different purpose. The process generally occurs through contextual induction in target language reading or listening, where learners encounter new lexical items together with different syntactic strings, which help the learner in using the words in semantic and idiomatic ways. New vocabulary in context often appears repeatedly with different usages, and hence becomes engrained in learners' minds.

Nevertheless, it takes a long time until sufficient vocabulary for fluent conversations and reading is incidentally gathered. Another problem is that this induction works best when the new items are mostly surrounded by familiar vocabulary. In fact, it has been shown that our retention capacity declines when more than five to ten new items are encountered in close proximity (Miller, 1956; Aitchison, 2003).

Given the definition and nature of incidental vocabulary acquisition above, this process seems to occur unconsciously. Incidental vocabulary acquisition usually involves at least part of a learner's active mind since s/he explicitly focuses on understanding the material (Ellis, 1994). It seems that active effort by students to understand materials is an essential element for incidental vocabulary learning to occur (Hulstijn, 1998). In other words, notice and attention play an important role in intentional and incidental learning. Word forms can be recognized efficiently in intentional learning, while word meanings can be processed and acquired through incidental learning. Thus, in order to achieve complete vocabulary acquisition (both forms and meanings), new word forms should be implicitly learned by learners and new word meanings should be taught explicitly by teachers.

However, teaching methods and approaches used by teachers and researchers in these areas remain a crucial factor in vocabulary learning. In order to help students meet the challenge of vocabulary learning, it is important to ascertain the optimal level of EFL vocabulary acquisition. Given this concern, achieving a large vocabulary

of L2 lexicon is likely mediated by the learner's L2 literacy, i.e. by the exposure to the L2 vocabulary during the reading process. It is also desirable that vocabulary acquisition instruction should expose learners to every new item comprehensively, thereby embedding it deeply and solidly into their mental lexicon. Personalized vocabulary acquisition using authentic texts is therefore one of the most beneficial activities.

## 2.2 Incidental Word Learning through Reading

Reading is a major source of vocabulary knowledge. Even though learners may have difficulty reading in an L2/FL, it is widely believed that L2/FL learners will experience word learning benefits from reading, to a similar extent that L1 readers do. Current language-teaching scholars claim that "reading widely is one of the best ways to learn another language" (Willis, 1996, p. 8). While reading, new words are encountered in texts and their meanings are decoded from the written context, which is made easier if a learner continues to read and encounter the new words in context again. This beneficial by-product of reading is also assumed to be available when reading in a second language. Indeed, it has been claimed that one of the best ways to acquire new L2 vocabulary is by reading in that language (Krashen, 1989).

During the reading process, a process of constructing meaning also occurs through the reader interacting with the text while using their existing knowledge. The process by which readers connect prior knowledge and experiences to a text, and continue to read the text to confirm predictions is called the *top-down* process. An essential part of which is that the reader looks at a passage and then makes guesses. Conversely, when a reader reads words, sentences, and an entire text to construct meaning from the written input without relating it to his or her prior experience, the reader is using the so-called *bottom-up* process. Both the top-down and bottom-up processes are combined together to create an interactive model, which better approximates to the true reading process, especially for fluent readers (Farrell, 2002).

Theoretical views of incidental vocabulary acquisition from reading exposure have involved various reading methods. Almost all the researchers involved, agree that vocabulary is learned during reading activities. In Schema Theory (Carrell &

Eisterhold, 1983; Carrell, 1987), reading is viewed as a complex amalgam of several informational sub skills used by readers to accomplish comprehension. This theory reinforces the Interactive Model of Reading (Rumelhart, 1977), which combines the top-down and bottom-up approaches to ultimately suggest that language processing is organized in two levels, ranging from the recognition of individual letters to high-level schemata employing world knowledge.

The two dimensions of word knowledge are receptive and productive knowledge, which can be sub-divided into knowledge of the form, meaning and usage of a word. Lexical knowledge is best conceptualized as a continuum between the ability to recognize the meaning of a lexical item and the ability to use it productively; it is not merely the possession of a receptive set and a productive set of vocabulary items. Production performance can be increased by the practice of retrieving L2 lexical items, resulting in a strengthening and refining of the ability to decode and encode structural properties (Ellis, 1994).

To increase word knowledge through receptive skills, various learning elements are involved including knowledge of the degree of probability of encountering words in speech or print, an awareness of word constraints and word implications according to function and situation, a knowledge of word behavior syntactically, an ability to derive underlying word meaning, the skill of associating words with other words in a language, a knowledge of the semantic values of words, and an awareness of the meaning associated with words (Read, 2000).

Reading different texts, not only provides new vocabulary knowledge, but also extends and reinforces a students knowledge of the way language is processed and used (Nagy, 2007). Thus, incidental vocabulary acquisition involves skills in both deriving word meaning from context as well as in recognizing word forms in relation to their meanings. This process is dependent on both the ability of the learner and the understandability of the word's concepts (Fukkink et. al, 2001).

Importantly, comprehension and the use of word knowledge are different ways to distinguish receptive and productive vocabulary skills. Comprehension refers to understanding a word when it is encountered in context during reading, while use can be defined as using the word in speech or writing. To test word comprehension, it is best to have learners read a text and then fill in blanks with the correct target words

(Read, 2000). A whole text offers great opportunities to assess other aspects of word knowledge besides meaning, such as, the grammar of words, their appropriateness to the context and so forth. This type of word knowledge has rarely been examined in previous studies which have rather focused on testing the acquisition of the meanings of target words as a result of reading treatment.

Incidental vocabulary acquisition through reading has been directly studied by several researchers (Jenkins et al., 1984; Dupuy & Krashen, 1993; Hulstijn et al., 1996; Ferris, 1988; Fukkink et al., 2001; Kim, 2006; Min, 2008). In these studies, learners were typically instructed to perform reading tasks that involved processing vocabulary. They were not informed in advanced that they would be tested on their ability to recall the target words after the treatment. The results generally showed that learners made slight gains in learning the new words when they were reading for meaning.

Using native Greek speakers as participants, Pigada and Schmitt (2006) employed seventy nouns and sixty-three verbs in their study to investigate incidental vocabulary acquisition by using four graded readers in French. Because the texts were short, Pigada and Schmitt included only the most common parts of speech found in natural texts with the hope that further research would eventually include other word classes. They organized the two word classes into six different frequency groups according to the number of encounters, and tested three types of word knowledge (meaning, spelling, and grammatical characteristics). The researchers found that substantial word learning occurred during the extensive reading treatment, although the improvement was not uniform across the three types of word knowledge. Spelling was enhanced in all noun frequency groups and in all but two verb groups. For meaning, low-frequency nouns and verbs showed limited learning, and verbs were more limited than nouns. Knowledge of grammatical behavior improved in all frequency groups for nouns, but the grammatical mastery of verbs was much lower.

A comparison of nouns and verbs has been at the forefront of attention in modern studies of cognitive and linguistic development, literacy, and academic achievement in school-age children (Wechsler, 1991, cited in Marinellie & Johnson, 2004). According to Markman (1989), nouns are generally predictable semantically because they tend to occur in structured categories with hierarchical internal



organizations, while verbs and adjectives are found in lexical relationships that are less structured and predictable. Verbs may have nonhierarchical functions that make learning them more difficult, such as change, causality, and manner (Miller, 1991). Marinellie and Johnson (2004) observed that the definitions of nouns and verbs are taught with significantly different styles to upper-elementary school children. The teaching rate of noun definitions was significantly higher than that of verbs. The researchers speculated that this might be due to an inherent lexical organization of verbs that is less structured and less predictable than is that of nouns. In child language development, it is generally agreed that verbs are more difficult to learn than nouns, and thus verb vocabulary is acquired at a slower rate (Benedict, 1979; Gentner, 1978).

In a study by Kweon and Kim (2008), twelve Korean learners of English read authentic literary texts and were tested on their knowledge of the vocabulary before reading, immediately after reading and one month after reading in a post-test. Results showed a significant word gain between the pre-test and the first post-test, and also most of those gains those were retained at the time of the second post-test. Of the three different word classes that were used, nouns were a little easier to retain than verbs and adjectives. More frequently occurring words were more easily learned than were less frequent words across all three word classes.

Previous studies have discussed the importance of text comprehension to vocabulary improvement when reading. The direct relationship between reading and general lexical knowledge was demonstrated by Rott (1997). Her study conducted by using German FL learners, examining the effect that exposure frequency and reading comprehension had on the success of incidental vocabulary acquisition and retention. In the study, the text comprehension, word gains, and word retention of the German learners were all very positive; retention in particular lasted over four weeks. These results suggest that text comprehension affects lexical gains.

In another study, Swanborn and De Glopper (2002) examined the success of word learning that grade 6 L2 students in Denmark made from reading texts with different purposes. The results revealed that the proportion of words learned incidentally while reading to learn about a topic increased the most whereas the free reading condition caused fewer words to be learned. Also, the level of reading ability

was a significant factor in all situations; when reading for comprehension, low-ability readers hardly learned any words incidentally, whereas high-ability readers learned up to 27 of 100 unknown words.

In an L1 study, Moravcsik and Healy (1998) examined the effect that visually enhanced words had on text comprehension. They found that placing words in boldface led to worse performance on comprehension questions than highlighting all target words in a text. An effective way of establishing and strengthening lexical knowledge is to simply use repetitive word occurrence throughout several texts (Rott, 2007).

Many researchers have found that the amount of reading a student does is one of the best indicators of their vocabulary size (e.g. Brown, 1993; Huckin & Coady, 1999; Krashen, 1989). Examining students in grades 4, 5, and 6, Cunningham and Stanovich (1991) found that even after accounting for general intelligence and decoding ability, reading volume (amount of time spent on reading) was a significant and independent contributor to vocabulary knowledge, suggesting that most vocabulary is acquired incidentally. Cunningham and Stanovich (1998) further argue that, exposure to new words (written or oral) which are not in their existing vocabulary is the only opportunity for students to acquire new word meanings.

Krashen (2004) reviewed fifty-four comparison studies of sustained silent reading versus traditional, skills-oriented instruction. He came to the conclusion that more reading opportunities, when implemented properly, are superior to traditional skill-building approaches in terms of providing greater literacy development.

To sum up, almost any type of reading conducted will result in vocabulary growth. For students to get the most out of their reading, the conclusions of most researchers tend to suggest that they should read for various purposes and read texts at various levels of difficulty. Several factors in the text, such as the degree of contextual support, will influence how well a word is learned (Beck et al, 1983). Two other factors are the number of repetitions of each target word and the relative importance to the text as a whole, of the sentence in which they occur (Stahl, 1991). If a word is located in a sentence containing an idea relevant to the entire text structure, more information from the passage will be entailed in that idea and on the word. Because of this, readers tend to pick up new words that are vital to the meaning of a text more

quickly than they learn new words used in less crucial sentences (Kintsch & Van Dijk, 1978).

The amount and kind of reading administered may also affect incidental vocabulary learning and explain the general paucity of experimental results. Thus learning vocabulary through a variety of reading content as well as providing frequent reading opportunities for students may be major influences on incidental vocabulary acquisition.

### **2.3 The Role of Frequency of Exposure in Word Learning in Reading**

As noted earlier, incidental vocabulary learning is increasingly seen as occurring through exposure to reading. In the past decades, ESL/EFL studies have examined vocabulary acquisition through text processing. Given the findings of Hayes and Ahrens (1988), which pointed out that rare words are encountered with greater frequency in writing, rather than oral language, it is obvious that the quickest way to build vocabulary is to read more rather than to engage in oral language activities. West and Stanovich (1991) conducted an investigation in which American university students were tested on their ability to recognize the names of magazines and authors (a measure of their exposure to print) and the names of TV celebrities (a measure of their exposure to oral input). The results indicated that exposure to oral input resulted in far less vocabulary learning than exposure to reading. The difficulty of words used in magazines was associated with strong performance on a test of vocabulary size.

In order to aid word learning, text can be purposely organized so as to increase exposure to new vocabulary, and this can be done without affecting the text content (Kim, 2006). From an ESL/EFL pedagogical point of view, examining the role of word repetition in a text seems to be a worthwhile area of study. L2/FL learners usually acquire many words that are repeated often in a particular text, and usually do not acquire many of the words that occur less often.

Ellis (1997) asserted that one can develop stronger memory traces through frequent exposure to the spoken or written forms of words which may eventually lead

to habit formation. Nevertheless, mapping meanings onto forms is very unlike repetitious drilling because each encounter occurs in a new and different context, and each new context is likely to be processed in a different way. For instance, the first few encounters with a new word may simply serve to alert the reader to the existence of the unfamiliar item. The next encounter also might not be very informative, but it could cause the learner to wonder about possible meanings and build useful initial associations. This would be an instance of what Stein (1993) has termed "the healthy inadequacy of contextual definition" (p. 23): a question space is opened but the learner does not fix on a solution prematurely. The next encounter might keep the learner wondering about the word, but if the context is more informative, then the learner may possibly guess the meaning.

It is possible that the sequencing of encounters matters, and that encountering a word in a helpful context after several less helpful ones has the powerful gap-filling effect that Brown (1993) claims to have found in learning from video materials. However, the experiment was limited to just a few target words, placed in short, specially prepared texts.

Determining the number of exposures needed for mastery of a new word involves considering many factors, such as the salience of the words in context, the richness of the contextual clues, the learners' interest, and their existing repertoire of vocabulary. In addition, individual learners are likely to acquire new words differently. Some learners were able to master a new word the first time they looked it up, while others required multiple exposures, and even needed to use multiple dictionaries (Grabe & Stoller, 1997). This evidence indicates that extensive reading, and exposure to words in varying contexts is what allows proficient readers to effectively build their vocabulary (Blachowicz & Fisher, 2000).

In one study in which the frequency of word occurrences was manipulated, Rott (1997) discovered a fairly strong positive correlation between the ability to recall information about the text and the gain and retention of target words. Participants at intermediate level who achieved greater levels of text comprehension were more likely to retain new words over four weeks. Learners were exposed to unfamiliar words with different occurrence rates (two, four, and six times) during reading. Results indicated that only two encounters with unfamiliar words during reading

significantly affected learners' vocabulary growth. Moreover, two or four frequencies of exposure resulted in fairly similar word gain, but six exposures produced significantly more vocabulary knowledge. However, the experiment was limited to just a few target words, placed in short, specially prepared texts. Ferris's (1988) study implied that the learning effects of frequent encounters must be measured more carefully, and that this can be aided by allowing subjects access to sources of information about target words rather than the only the text itself.

In an empirical study, Jenkins et al. (1984) found yet a different figure: it took ten encounters for just 25% of learners to learn a word. It makes sense that learners with a larger vocabulary should require fewer encounters to learn another word, if only because they know a higher proportion of the words in the vicinity of the new word. Conversely, those learners with a smaller vocabulary will have to wait longer before encountering a context that is clear to them and that allows them to determine the new word's meaning.

It is obvious that the frequency of exposure to the unknown words in a text has a significant impact on the retention of word meaning. The primary reason for this is that the reappearance of a word will strengthen the form-meaning connection in the learner's mental lexicon. In a more technical experiment by Hulstijn et al. (1996), it was found that frequency of occurrence aided incidental vocabulary acquisition to a greater degree for advanced L2 students when definitional information was provided on the side (such as in the margins or in a dictionary). When no external information concerning the meaning of unknown words was provided, acquisition was slower. Therefore, supplementary materials which provide frequent exposure to target words seem to be essential to aiding EFL readers in acquiring new vocabulary efficiently.

Another clear example was found in a study by Fukkink et. al (2001). Primary-school readers were found to be less successful in deriving the meaning of words with low frequency of occurrence than those with higher frequencies. Although it seems likely that text comprehension and vocabulary acquisition through reading are shared processes, acquiring an understanding of the semantic features of new words is not necessarily accomplished by the same process whereas the level of analysis and building a cognitive representation from a text is (Pulido, 2004).

Incidental vocabulary acquisition, then, can be achieved by repeatedly encountering new words in multiple texts (Rott, 1999; Waring & Takaki, 2003; Zahar, 2001). These studies found that a relationship does indeed exist between acquisition and frequency of exposure, and it is especially strong for low to middle proficiency EFL learners who are exposed to target words at least eight times (Waring & Takaki, 2003).

It can be deduced from the aforementioned findings that frequency of exposure is a crucial part of word learning during the reading process. But that the number of times a word must be encountered in reading for it to be learned is not consistent. If all words were learned in eight encounters, but they appeared only twice in a given reading exposure, then acquisition would not occur and develop lexicon would not be acquired through reading.

It makes sense that learners with a large vocabulary probably require fewer encounters to learn a new word, if only because they already know a higher proportion of the words in the vicinity of the new word; conversely, those learners with smaller vocabulary may have to wait longer for a context that is clear to them. It is, therefore, considered likely that re-encountering target words in reading will enhance more incidental word learning. Further, in addition to the role of frequency, context in reading is another major factor in acquiring vocabulary during reading.

#### **2.4 The Role of Context Reading in Vocabulary Acquisition during reading**

The role of context in vocabulary acquisition is crucial, but it is not commonly regarded as being as important a method as memorization. The process of dealing with an unknown word in a reading text was well illustrated by Ruddell (1997). When encountering an unknown word while reading, a reader uses four dimensions to construct its meaning: context, structure, sound, and reference. This process is the easiest and the most direct way for a learner to acquire new words from context. Once the word makes sense to the reader, s/he will continue to read and comprehend the text better.

Complete vocabulary knowledge certainly involves the interpretation of context to determine meaning. Also, meta-cognitive strategies (strategies concerned

with the learning process itself) should be applied by learners to better comprehend newly encountered words while reading (Read, 2000). Research shows that although students learn new word meanings from context, they often require a great deal of pre-exposure, and possibly many realistic exposures, before they can accurately determine meaning from context (Jenkins et al., 1984). It follows that students will profit from instruction on how to use context effectively. Fukkink et al. (2001) also maintained that instructional effectiveness can further be raised by providing students with guidance in using different and specific types of context clues.

Assuming that a readers' primary purpose is text comprehension, the degree to which readers will try to determine the meaning of unknown words will primarily depend on how important the word is in helping them successfully construct textual meaning. If readers perceive that the word does not contribute towards text comprehension, they may be more likely to neglect it. If this omission influences their comprehension, readers will try to complete the meaning by using clues given in the surrounding context, or with their background knowledge.

When readers successfully determine the meaning of an unknown word, it is usually through contextual information, meaning that the reader is looking at the new word from the level of the meaning of the entire text or at least the surrounding paragraph (Brown, 1993). Consequently, a change of focus from the text level to the word level is required on the reader's part in order to ensure that total acquisition can take place. Firstly, the reader must actively focus on the word form. Secondly, s/he must transfer the contextual meaning to the word meaning level. Finally, the reader must form a mental connection between the word form and its meaning.

Word learning involves consciousness of both appropriate word usage and the cognitive process involved in the vocabulary-learning procedure (Fukkink, et al., 2001). The interaction of the components is involved in word meaning specification during the reading process, and has implications for incidental vocabulary acquisition. Initially, a learner is confronted with an unknown word in a text, which will leave a conceptual gap in the learner's mental model of the text's meaning. The more extensive the context, the greater the need for derivation of meaning to take place.

There are three distinct processes for an unknown word encountered in a text to become embedded into vocabulary repertoire (Huckin & Coady, 1999). Firstly, a

particular contextual meaning is discovered on the textual level through enhancement and focus. Secondly, an implied meaning from contextual information is derived, and this new information is integrated into existing knowledge structures. Finally, the recognition of the word form and of the connection between form and conceptual structure occurs through the learner's cognitive skills.

Carnine et al. (1984) conducted a study which showed that unknown words placed in context are easier to learn than if they are encountered in isolation. Contextual cues that are close to the target word make the process simpler. Also, synonyms (rather than inferential cues) help students derive the word meaning. Older students seem to be more able in deriving meanings for unknown words.

Another study dealing with the influence of context on word acquisition task was that of Li (1988) who focused on L2 learners. Although Li did not report the kind of cues he used, his subjects were better than most at deriving and retaining word meanings in sentences that provided adequate contextual cues. Mondria et al. (1991) conducted a study that dealt with the effect of contextual clues on word guessing and retention for second language learners. It also questioned the correctness of guessing strategies, and how these strategies affected retention. The data showed that a contextual context, especially in sentences in which cues are given by function words did indeed result in an improvement in guessing, but not in improved retention. Moreover, words that were correctly guessed in context were not remembered any more often than incorrectly guessed words.

Shelfbine (1990) shows that grade six students with smaller vocabularies acquire fewer word meanings from context, presumably because they are less capable of understanding contextual information that would help them in guessing unknown words and also because they have a less developed knowledge of even known words. In this study, it seems that word learning primarily occurred for the same words for both of the two groups of students studied; words already known by those with a large vocabulary did not seem easier to learn for the other students. Reasoning ability seemed to have no effect on the task. However, new concepts were harder to learn for students with a smaller vocabulary.

Zahar et al. (2001) conducted a vocabulary acquisition study on Quebec high school ESL learners at five levels of proficiency. First, learners read a text and were



tested on the new vocabulary it contained. Then, learned and unlearned words were compared for frequency of occurrence and the level of contextual support. Although both of these things were found to be associated with learner level, frequency of occurrence was more closely related. The study found a relationship among frequency of exposure, contextual richness, and vocabulary acquisition, particularly for words that appeared at least eight times. Readers might not allocate sufficient attentional resources, might not isolate the word from the context, or might establish incorrect associations with the word during each encounter. Therefore, enhanced instructional materials may be needed to stimulate the readers' vocabulary learning process in the hope for increasing their potential processing.

Gao (2007) conducted an experiment designed to investigate the effect of sentence context, or lack thereof, on the results of vocabulary tests on forty Chinese EFL students at university level. Two sets of vocabulary test paper were used including twenty multiple-choice questions one of which required the students to choose the word with the most similar meaning to the word presented, and the other taking the form of sentence contexts where the students were required to choose the word with the most similar meaning from four single word items to an underlined word in the sentence. A concurrent aim of the study was to examine the relationship between the subjects' performance and different types of context for vocabulary. The result demonstrated that context plays an important role in helping test-takers to work out the correct meaning of target words. In addition, this study concluded that the difficulty of target words should be carefully controlled in a future experiment and the choice of context for target words should receive a lot of attention.

In summary, it can be confidently concluded that vocabulary can be acquired incidentally through reading by means of guessing and inferring word meaning from context. However, vocabulary learning from context is not always effective due to several factors. These include an insufficient frequency of the occurrence of new words, the readers' decisions to ignore certain words, when readers mistakenly believe that they know words, and readers failing to make connections between new word forms and their associated meanings from context.

## 2.5 Vocabulary Learning Strategies in Reading

As can be seen from previous studies, limitations due to lack of vocabulary competence are a major negative factor affecting the development of vocabulary learning. Learning strategies in incidental vocabulary learning are rarely examined. A learning strategy is a series of actions a learner takes to facilitate the completion of a learning task. A strategy starts when a learner analyzes a task, the situation, and the options available in his or her own repertoire. The learner then goes on to select an action, utilize it, monitor its effectiveness, and evaluate the actions' results, allowing the learner to decide if s/he needs to revise the plan and action. Cohen (1998) distinguishes language learning strategies from language use strategies. The former revolve around the acquisition of language, and include such tactics as memory, while the latter is employed for the production of language such as speaking in an L2.

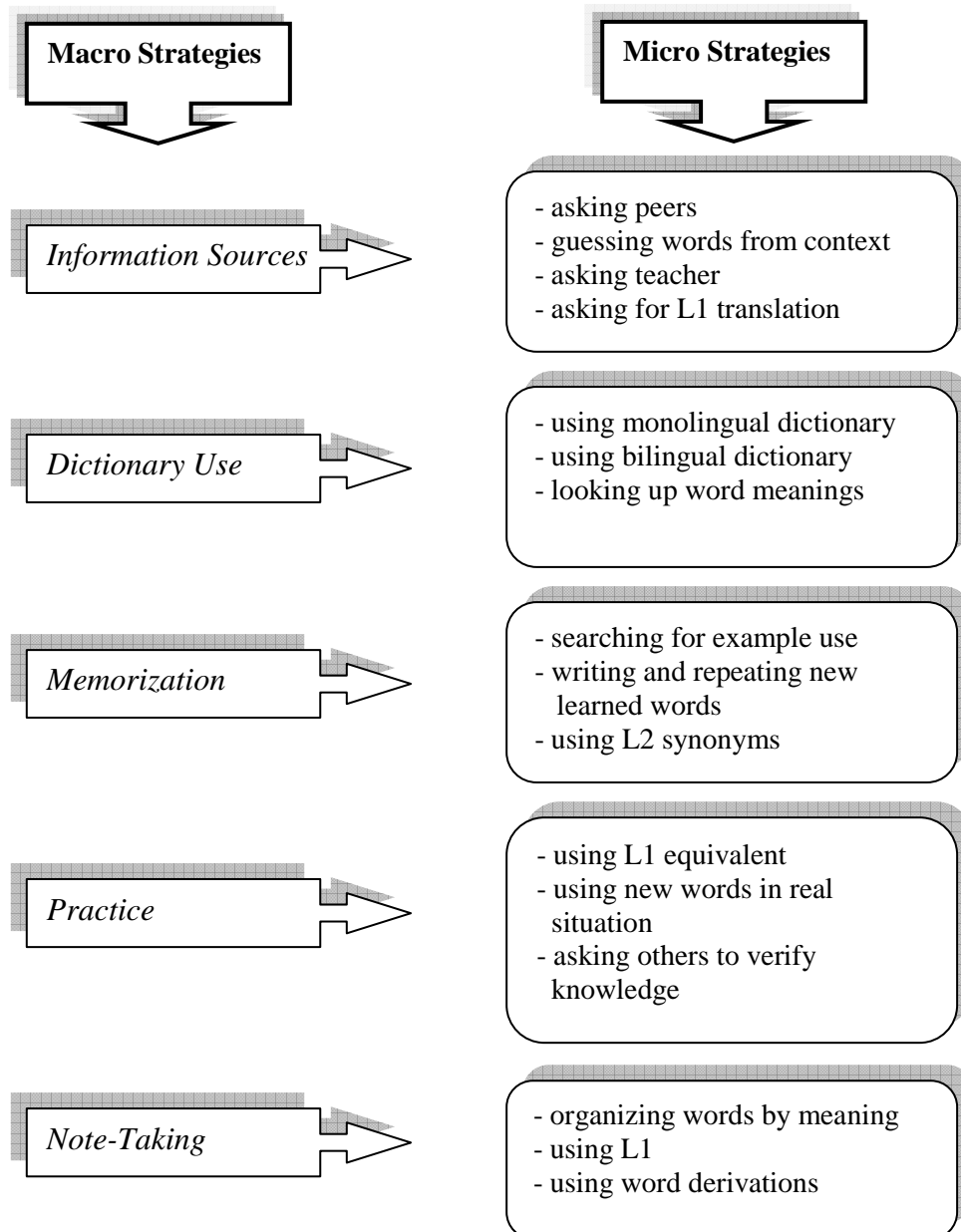
Learning strategies can be defined as the unique thought patterns and processes used by students to facilitate the comprehension, learning, or retention of new information (O'Malley & Chamot, 1990). Studies of the techniques and strategies used by proficient language learners (Skehan, 1989) suggest that these students possess a greater repertoire of strategies and also utilize them with greater frequency than do their less proficient classmates. A major outcome of the research into the strategies used by successful language learners was the conclusion that learners should be taught not only the language but also the learning strategies themselves. As Rubin (1990) pointed out, poor learners often have no idea how their more proficient peers, arrive at correct answers, and this frustration leads them to believe that they can never reach that level themselves. Learners consulting electronic (Knight, 1994; Laufer & Hill, 2000) or paperback (Luppescu & Day, 1993) dictionaries for the definitions of unfamiliar words while reading tested higher on word retention on both immediate and delayed tests. They also received higher scores for both receptive and productive skills (Knight, 1994) than students who did not consult dictionaries.

In the reading process, beginning readers may encounter a number of unfamiliar words. With a view to comprehending the texts, learners need to apply lexical processing strategies when exposed to unfamiliar words (Fraser, 1999). While

attempting to acquire vocabulary by reading a number of passages, learners will definitely encounter lexical items with unknown meanings. To overcome this lexical challenge, they employ strategies, which can be characterized as a series of deliberate, conscious, problem-solving actions (Wenden & Rubin, 1987). Various types of lexical processing strategies have been identified to date. Goodman (1996), for instance, approaches this issue from the linguistic point of view. He divides language into three levels: graphophonics, lexico-grammar, and meaning/pragmatics. Consequently, the cues at these linguistic levels—graphophonic, syntactic and semantic—are available to assist readers in making sense of the text and mastering unknown words.

Ahmed (1989) suggested two major categories of vocabulary learning strategies: macro strategies and micro strategies. Macro strategies are broad general approaches to vocabulary learning. Examples of macro strategies are the use of information sources, dictionary use, memorization, practice, note-taking, and preferred sources of information. Micro strategies, in contrast, are more detail-oriented and are concerned with specific learner behaviors that develop out of macro strategies. The two major types of vocabulary learning strategies are shown in Figure 1.

**Figure 1: Two Major Categories of Vocabulary Learning Strategies (Ahmed, 1989: 10-11)**



Particularly, when learners undertake a reading task, these strategies dictate how they acquire new words after processing a text. The use of dictionary look-up behavior and translation as well as strategies concerned with anticipating content, guessing word meanings from contextual clues, integrating information, using relevant background knowledge, and understanding overall reading content are involved when a reader tries to make sense of a text being read. If word meanings do not directly appear in the text, the reader must use these strategies to infer or search for their meanings (Rott, 2007).

Fraser (1999) proposed a different categorization of vocabulary strategies: making inference (which is an overarching concept for syntactic and semantic cues), using a dictionary, and skipping words. In her study she found that participants started by attempting to make an inference to determine a new word's meaning. If that failed, they moved to consulting a dictionary, and if that proved unhelpful, they would ignore the words, despite unwillingness to do so. This pattern of strategy use holds true for both reader preference and for the actual order of reading strategies employed by the learners. However, in terms of the effectiveness of the strategies in acquiring unfamiliar words, dictionary use was found to outperform making inferences, since full comprehension of word meaning results 78% of the time from efforts to consult a dictionary, but only 52% of the time from inference.

Based on thirty-seven studies conducted by different researchers using verbal protocols as the method of collecting data, Pressley and Afflerbach (1995) compiled a comprehensive list of strategies that a reader might employ while reading a text, and therefore demonstrated that reading comprehension is highly strategic. Among these reading strategies, they highlighted those used by readers to find the meaning of unknown words. They argued that when stumbling onto an unfamiliar word or phrase, readers generally make a decision about the relative importance of the lexical item to the comprehension of the entire text. Attributing little or no significance to the item may cause the reader to remain ignorant of its meaning as he or she finishes reading the passage. However, if the reader decides that the lexical item has an important function to the overall meaning of the text s/he will take steps to work out its meaning. The lexical item then becomes the focus of attention, and the reader either uses a dictionary to select the relevant meanings or applies various types of context

clues in attempt to infer the unfamiliar word or phrase. The meaning is further evaluated for its conformity to the context and meaning of the entire passage: failure to determine the appropriate meaning can result in either another attempt or in surrender on the part of the reader.

In choosing vocabulary learning strategies, the frequency of occurrence of a word becomes a crucial consideration. Nation (1994) suggests that teaching students strategies is especially important when dealing with low-frequency words. He argues that vocabulary instruction must be looked at from a cost/benefit viewpoint: high frequency words are so essential that the cost of teaching them is justified by the resulting benefit, but low frequency words will not generally be encountered enough to warrant their explicit teaching. Since teaching time spent on these words is not justified, Nation instead suggested teaching three strategies to help students deal with them: guessing from context, using mnemonic techniques, and using word parts.

Nassaji (2003) examined the relationship between on one side, the knowledge and use of inferential lexical strategies and on the other side, their success, based on introspective and retrospective think-aloud protocols. The study was conducted on twenty-one intermediate EFL learners in Canada who attempted to infer new word meanings from context. The findings suggested that the rate of success was low, even when the subjects used the strategies and knowledge sources they had at their disposal. The study also found that different strategies contributed to inferential success, or lack thereof, in different degrees, and that success was related more to the quality, rather than the quantity of the strategies used. Among knowledge sources, students used prior general knowledge most frequently. Among strategies, verifying and self-inquiry resulted in making successful inferences more often than other strategies. These results provide evidence of the important role that these meta-cognitive strategies play in lexical inference.

Using interviews and diaries, Wen and Johnson (1997) examined the usage of vocabulary learning strategies in their study of the relationship between learner variables and English achievement. Their study dealt with seven items covering four kinds of vocabulary learning strategies: (1) memorizing words in prescribed reading; (2) memorizing words in self-initiated reading; (3) consulting a dictionary to find out information about the collocations of new words and the various meanings of those

words; and (4) specific techniques for memorizing new words. The study attempted to discover the differences between high and low achievers. The results showed that there was no significant difference between high and low achievers in the first and the fourth types of vocabulary learning strategies.

Gu and Johnson (1996), in a study of the vocabulary learning strategies and language learning outcomes of Chinese students learning English as a foreign language, concluded that “both direct and indirect approaches to vocabulary learning can be useful” (p. 668). The direct approaches included such strategies as oral repetition of words, reading words in context, and using various other strategies to aid learning. The approaches they found ineffective, but were overused by the group of students who did not perform well in the study, included memorization and the placement of great emphasis on visual repetition of word lists.

With respect to the findings discussed earlier, the strategies employed by high achievers need to be examined along with the question of how success in achieving lexical gains interacts with, and is mediated by contextual support in texts. The strategies which learners decide to use should be determined by their analysis of the task at hand, their own learning characteristics, and the learning context. Vocabulary learning strategies should include strategies for using, as well as for knowing a word. Unfortunately, incidental vocabulary learning is still a fairly new area of pedagogical research and the majority of research to date has concentrated on the product (gains) rather than the process (how these gains are learned) of acquisition (Mcneill, 1990)

To sum up, learning new vocabulary is a challenge to L2/FL students, but it can be overcome by having access to a variety of vocabulary learning strategies. Learners should receive formal training in strategies they lack. To this end, teachers should consider learners’ willingness and readiness to receive training, and should think of the most appropriate way to present strategies. Thus, teachers may first need to make an appraisal of learners’ current vocabulary learning strategies, and then work to help them realize the value of other types of strategies.

The review of literature above provides relevant findings for learning vocabulary incidentally while reading. Based on cognitive views of ESL/EFL vocabulary acquisition and related empirical research, the degree of vocabulary acquisition during reading tasks depends on several conditions: the frequency of

exposure, the role of context, the role of information sources, individual vocabulary learning strategies, and variety of content. Only a few studies have shown how words were learned incidentally. Besides, none of these studies provided equal frequency of reading exposure. The challenge is to construct a theoretical background and research findings to support practical work in the classrooms of schools in Thailand.

The strong and established relationship between students' vocabulary knowledge and their ability to successfully comprehend what they read places a heavy demand on classroom teachers, curriculum planners, program developers, organizers of staff development plans, reading researchers, and parent outreach programs. This demand calls for significant attention on the development of students' vocabulary knowledge. Attention to vocabulary development is important for all students, but is especially important for students who are at risk of not learning to read well, particularly in the case of EFL learners.

The problem, then, is how to expand a student's vocabulary knowledge to the point where s/he recognizes enough of the words in a text to be able to guess unfamiliar words from context. In other words, what is needed is a strategy for bridging the gap between knowledge of the kinds of high-frequency words found in texts, and knowledge of the words necessary for a student to be successful with incidental vocabulary learning.

In light of this, providing significant reading exposure with controlled target words in texts of substantial length which contain many repetitions of the words may provide more effective results. In pursuance of the goal of facilitating vocabulary acquisition, carefully designing reading materials by providing high exposure to the target words and equally distributing the target words in each reading should be a fundamental priority.

The review above of incidental vocabulary acquisition provides a framework for the present study. However, only a few a studies have focused on the idea of controlling word frequency in a text and the studies rarely examine possible influential factors which might affected incidental word gains as well as how these gains were acquired.

Based on this view, the current study attempts to investigate the effect of word frequency controlled reading on the incidental vocabulary learning of grade 9



secondary students in Hat Yai. The study seeks to examine four possible influential factors: word class, abstractness and concreteness of words, the number of parts of speech and word concepts that the word could embody, and word length in letters, and how they affect incidental word learning. Moreover, it examines the strategies used by the top ten highest achievers who successfully acquired the target words. The findings of this study indicate an alternative method of teaching reading which can increase the vocabulary repertoire of students at a secondary school level and maximize the potential benefits of exposure through reading; in short, a useful way to acquire new words incidentally.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

This study investigated the effect of word-frequency controlled reading on incidental vocabulary acquisition for Thai grade 9 students who studied English as a Foreign Language (EFL) during the 2008 academic year at Hatyairatprachasun School. This chapter explains the research procedures used in the study. It provides information about the subjects, research instruments, data collection, and data analysis. A summary of the chapter is also provided.

#### **3.1 Subjects of the Study**

Thirty grade 9 EFL students at Hatyairatprachasun School which is a government secondary school located in Songkhla, Thailand, participated in this study (N=30). For reasons of convenience, the researcher selected a class of grade 9 students (M. 3/11). On average, the students were at a moderate English proficiency level according to their results from a standardized test known as the National Test (NT) from the academic year 2007. Their NT mean score on English was 52.50%. In addition, their English mean scores on the final test (semester 1, 2008) administered by the school was 68.94%.

#### **3.2 Preliminary Study**

A preliminary study was conducted in order to select the thirty most appropriate target words for the main study. To ensure that the participants in the study had no or little knowledge about the target words, a vocabulary checklist (See Appendix A) was constructed one month prior to the design of the research material. The researcher and two experienced English teachers selected possible words based on 3 word lists: the Headwords of The Academic Word List, the 1<sup>st</sup> 2000 Words of English, and the Second 1000 Words of the General Service List (Nation, 2002) in order to identify words of which the subjects were ignorant. From the three lists, twenty words, possibly unknown

words to the students were selected. Thus there were a total of sixty candidate unknown words including verbs, nouns, adverbs, adjectives, and prepositions.

The vocabulary checklist was, then, administered one month later to a class of 52 grade 9 students at another high school in Hat Yai. This session was conducted within a single 50-minutes period. The students were selected based on to their scores on the National Test. Their NT mean score was 56.40% seemed to be close to the subjects of the present study. The students were asked to identify those words for which they did not know the meanings. As a result, the top thirty unknown words were selected as appropriate target words for the main study.

The result of the administration of the list of 60 words suggested that the participants in the preliminary study had little or no knowledge of the thirty words selected for the final study from the vocabulary checklist (See Appendix C). Therefore, these thirty words were appropriate to be used as target words. The list of thirty target words included 16 verbs, 8 adjectives, 4 adverbs, 1 noun, and 1 preposition (See Appendix D).

### **3.3 Instruments**

In order to obtain information for the study, the following research instruments and data collection instruments were used.

#### **3.3.1 Research Instruments**

##### **(1) Target Words (See Appendix D)**

After the target words were selected, the process of inserting these words into ten texts was completed in September, one month before the main study was conducted. The target words were varied in their functions. Generally, verbs are the most common parts of speech found in natural texts, so the target words included a large number of verbs. The target words were integrated into the readings without being highlighted, underlined, or presented in bold face type (Moravcsik & Healy, 1998).

## (2) The Reading Materials (See Appendix E)

The top thirty unfamiliar words among the original sixty listed vocabulary items were integrated into ten written texts. Three of the ten reading materials were selected and adapted from *an unpublished course book written by the English Department of the school* (“McDonald’s,” “Mozart,” “The Eiffel Tower,” and “Speed Dating”). The other came from the two books: *Adventures in Reading & Writing 3* (“Back to Cambodia,” “Dear Amanda,” and “Home Sweet Home”) and *Inside Out for Pre-Intermediate* (“Golfing Genius,” “What People Really Want for Their Birthday ”and“ Great Love Affairs”). These books were selected based on the requirements of the curriculum.

The researcher and two experienced English teachers chose these reading texts on the basis of the topics, difficulty, and length being considered suitable for the learners’ level and all the thirty target words were integrated into each of them. Text length, appeal, and level of grammatical complexity were also taken into consideration. The texts were used as part of the students’ English course syllabus. A supervisor, a co-supervisor, and an experienced native-speaking English teacher provided advice and commented on the adapted versions of the texts. The ten short texts (approximately 500 words each) were slightly rewritten in order to insert the target words but the topics were not altered. The target words were not explicitly designated by underlining, highlighting, or presentation in bold face type.

The reading materials closely corresponded to materials in the students’ English textbooks, rendering them instructionally appropriate. They were designed carefully so that the students could understand them with the least difficulty possible. In addition, each text as accompanied by comprehension exercises, including short answer, multiple choice, true/false, and text summary items which were created for each reading text. The creation of these exercises was overseen by the supervisor, the co-supervisor, the native-speaking English teacher, and two experienced English teachers, all of whom contributed advice.

### **3.3.2 Data Collection Instruments**

#### **(1) The Tests of Lexical Gains**

The tests of lexical gains consisted of two tests: (1) a word translation-production test, and (2) a word-comprehension in context test. Both were used as pre- and post-tests in the experiment. Prior to the experiment, both tests were given to the subjects in order to measure their ability to supply the correct meanings of the thirty target words as well as to comprehend fifteen randomly selected target words in context. The two tests were administered at the beginning and the end of the experiment to measure the subjects' incidental vocabulary acquisition of the target words.

##### **(1.1) The Translation-Production Test (L2-L1)**

This test was designed to assess incidental word gains from the reading of the thirty target words by measuring the students' ability to produce English-to-Thai word translations (See Appendix F and G). There were thirty items on the test, one for each target word. The participants were asked to supply a short translation, definition, or explanation of each target word in their L1 (Thai). Despite this L1 production requirement, this test was designed to measure the subjects' L2 word-meaning knowledge. In the post-test (See Appendix G), all thirty items were rearranged into reverse order in order to avoid test recognition effect.

##### **(1.2) The Word Comprehension in Context Test**

Two versions of a gap-filling test were used as both a pre- (See Appendix H) and a post-test (See Appendix I). Each consisted of a text which contained fifteen blanks designed to assess the students' ability to understand the fifteen randomly selected target words (meaning, function, and usage) in context when encountered during reading. Being mindful of the test design, time constraints, and the possibility of the test-takers suffering stress, only fifteen target words were tested. The subjects were required to make use of contextual information in the test in order to provide the correct answers to complete the blanks. The fifteen words tested were from all word classes. A reading passage of approximately 150 words in length was adapted in order to insert the words to be tested. The test was designed to measure receptive word knowledge, particularly the comprehension of word meanings and their application.

### **(1.3) Oral Interview**

An oral interview was conducted to obtain in-depth information on how the top ten highest achieving students acquired the target words. Six interview questions were written aimed at probing their individual strategies and finding out if there were any factors influencing incidental word learning. To ensure the reliability of the interview the questions, and back translations of them were checked by experts who also checked their content validity. The Thai-version of the interview questions translated from the English version by the researcher was translated back into English by two bilingual Thai associate professors of English. Afterward, the back translation was compared by the researcher's supervisors with the initial English-version questions to see whether the two matched. The content validity was checked by two experts in applied linguistics.

During the interview session, the list of thirty target words was presented to each interviewee. The interviewees were asked to explain what strategies they frequently employed during the reading process in order to unlock the target words' meanings and to comprehend them. The interviews were conducted in the subject L1 (Thai) to avoid misunderstanding of any directions and the interview form was also prepared in Thai to assist the researcher in eliciting more detailed responses from the interviewees. The interview sessions occupied approximately 20 minutes per interviewee. The six guideline questions are presented as follows:

#### **Six Guideline Interview Questions**

1. What did you do when you encountered unfamiliar words while reading?
2. Apart from reading the texts, how did you know the meaning of these target words ?
3. Did you notice and pay attention to all the target words in the ten pieces of reading material?
4. Do you think that seeing each word ten times helped you to remember/ learn the word?
5. Do you think these reading activities helped you to acquire a number of new Vocabulary items?
6. What are your problems in reading EFL texts?

A summary of the data collection instruments and purposes are displayed in Table 3.1

**Table 3.1: Summary of Instruments and Purposes**

<b>Instruments</b>	<b>Purposes</b>
<b><i>1. Research Instruments</i></b>	
<i>a. Target Words</i>	To be used as the tested words and their learning by the subjects to represent the accurate results of the tests
<i>b. Reading materials</i>	To provide frequent opportunities for the subjects to learn the target words by using word-frequency controlled reading as the reading treatment.
<b><i>2. Data Collection Instruments</i></b>	
<i>a. Pre-tests</i>	
1.1 Translation production	To obtain data on participants' target vocabulary knowledge and knowledge of their individual meanings, their comprehension, and their usage in context at the beginning of the reading treatment.
1.2 Word comprehension in context	
<i>b. Post-tests</i>	
1.1 Translation production	To obtain data on participants' target vocabulary knowledge and knowledge of their individual meanings, their comprehension, and their usage in context at the end of the reading treatment.
1.2 Word comprehension in context	
<i>c. Oral interview</i>	To obtain information in depth about the top ten most successful participants' use of vocabulary learning strategies that might influence vocabulary acquisition.

### **3.4 Data Collection Procedure**

The experiment was carried out with one class of students at a secondary school in Hat Yai, Songkhla, Thailand. During the experiment, the students undertook a total of eight hours and thirty minutes of an EFL reading course (their usual class). The researcher conducted the reading treatment and taught the subjects herself. The experiment involved having the subjects read ten texts (two per week) over a two month period and the emphasis in the class was reading comprehension. Each text had been supplemented with thirty target words. But no specific vocabulary instruction was conducted. The tests were designed to measure the receptivity of the subjects to new word knowledge, including both meaning and comprehension in context.

The overall research procedure consisted of the following four phases: (1) administering the pre-test, (2) providing reading treatment, (3) administering the post-test, and (4) conducting the oral interview.

#### **Phase 1: Administering the Pre-Test**

The goal of this phase was to test the subjects' prior knowledge of the thirty target words across two dimensions: word meanings and word comprehension in context. The thirty subjects were all required to take the pre-tests: the translation-production test and the word comprehension in context test. They were both administered on October 27, 2008. The tests were proctored by the researcher and the class teacher and together they lasted one hour. The test results were then rated and scored for further analysis.

#### **Phase 2: Providing Reading Treatment**

The ten input texts (each approximately 500 words in length) were adapted from three books (see Reading Materials, p.32) to integrate the thirty target words. No special background or cultural knowledge was required in order to comprehend the texts. The subjects were informed that they would read these ten reading texts and complete the reading exercises, covering two texts per week. The researcher conducted the reading treatment in the English Reading and Writing class, over a period of five weeks (ten periods). Each reading chapter was presented in a fifty-minute period. The subjects were informed that the purpose of this course was to improve their reading skills by



emphasizing reading comprehension. As such, the subjects were required to read each text with the goal of understanding the content, and thereafter they were assigned various reading exercises to enhance their comprehension. Within the fifty-minute period, the subjects were allowed to review the reading materials as much as they wished. All the exercises accompanying the reading materials were collected by the researcher, and returned to the subjects in the following class

The reading procedures were divided into three stages; the pre-reading stage, the while reading stage, and the post-reading stage. The three stages are explained and supported with examples:

### **(1) Pre-reading stage**

In the pre-reading stage, the researcher gave an explanation and information about the topic of the reading lesson to the students. The researcher used various ways to give the information, for example:

- Asking the students about the reading passage ("*How many paragraphs are there in the passage?*" or "*what you do see in the pictures ?*")
- Writing the key words of the topic on the board and explaining them to the students.
- Giving simple information about the reading topic, providing guidance on cultural issues related to the topics ("*What to do when one goes to a party,*" "*How to choose a present for different friends*")

### **(2) While reading stage**

This stage was divided into three sub stages:

**(2.1) Reading comprehension:** The researcher asked the students to write down what the topic was about or asked them to identify difficult sentences in the passages so that they could discuss the meanings later.

**(2.2.) Discussion:** In this stage, the researcher provided the students with guided questions for them to discuss in detail among themselves in groups of five. The questions were related to the reading passages.

**(2.3) Reading aloud:** The students were required to read the passages aloud either one by one or in groups. The purpose was to achieve accuracy and fluency in pronunciation.

### (3) Post-reading stage

This was an evaluation stage and occupied approximately 10 minutes which consisted of answering comprehension exercises and questions relating to the reading passages. The researcher and the students summarized the passages together. During this session the students were able to ask further questions to clarify any issues relating to the passage. The procedures for the reading treatment are detailed in Tables 3.2-3.3.

**Table 3.2: Summary of Teaching Procedure**

Teaching Stage	Procedure
1. Introduction of Reading Chapter	- Elicit students' general knowledge about the subject matter of the reading text and provide relevant background (5 minutes).
2. Reading Process	- Require students to comprehend the overall context (20 minutes).
3. Follow-Up Activities	- Ask students to do the given comprehension exercises (10 minutes).
4. Evaluation	- Let students check the correct answers to the exercises (5 minutes).
5. Summary	- The teacher summarizes the overall reading content without direct vocabulary instruction (5 minutes).

The reading treatment schedule is presented in Table 3.3.

**Table 3.3: Reading Treatment Schedule**

<b>Period</b>	<b>Reading Chapter</b>	<b>Reading Tasks</b>	<b>Time (minutes)</b>
2 days before the reading treatment	Introductory Phase	- giving a brief introduction to the course - taking pre-tests	120
1	Back to Cambodia	- completing each sentence with a word from the picture - story prediction - reading comprehension - scanning for answers - writing the missing words	50
2	Dear Amanda	- completing each sentence with a word based on a picture - story prediction - reading comprehension - writing the missing words	50
3	Home Sweet Home	- completing each sentence with a word based on a picture - story prediction - reading comprehension - making inferences	50
4	McDonald's	- eliciting background knowledge - identifying main idea - using words from the story in sentences - matching phrases - choosing right words for each meaning. - reading comprehension - completing sentences	50
5	Golfing Genius	- searching for information from the Internet - writing full forms of numbers - using numbers in the text - writing superlative forms - completing questions with superlative adjectives	50

Period	Reading Chapter	Reading Tasks	Time (minutes)
6	What People Really Want for Their Birthday!	<ul style="list-style-type: none"> <li>- eliciting background knowledge</li> <li>- reading comprehension</li> <li>- rearranging the words to make sentences</li> <li>- finding adverbs of frequency</li> <li>- matching words with phrases</li> <li>- rewriting sentences using verbs with two objects</li> </ul>	50
7	Mozart	<ul style="list-style-type: none"> <li>- eliciting background knowledge</li> <li>- identifying main idea</li> <li>- completing sentences with words from the text</li> <li>- matching words with opposite pairs</li> <li>- guessing word meanings</li> <li>- choosing right words for the right meanings</li> </ul>	50
8	The Eiffel Tower	<ul style="list-style-type: none"> <li>- eliciting background knowledge</li> <li>- identifying main idea</li> <li>- completing sentences with given words</li> <li>- matching phrases</li> <li>- reading comprehension</li> </ul>	50
9	Speed Dating	<ul style="list-style-type: none"> <li>- eliciting background knowledge</li> <li>- matching words and their meanings</li> <li>- reading comprehension</li> <li>- vocabulary reinforcement</li> <li>- completing passage</li> </ul>	50
10	Great Love Affairs	<ul style="list-style-type: none"> <li>- eliciting background knowledge</li> <li>- reading comprehension</li> <li>- rewriting sentences with past simple affirmative and negative forms</li> </ul>	50

### **Phase 3: Administering the Post-Test**

One week after the conclusion of the reading treatment, the subjects were required to take a post-test to measure lexical gains from the ten, word-frequency controlled readings. The subjects spent approximately one hour in completing the test. The translation-production test was revised by reversing the presentation of the test items. The rearranged content was used in the word comprehension in context section but nevertheless utilized the same fifteen random words.

**Phase 4: Conducting the Oral Interview**

Three days after administering the post-test, an oral interview was conducted in which the top ten highest achievers were asked to respond concerning the extent to which they could identify the number of encounters necessary to learn each target word. Answers were given on a scale of 1-10 times, the least to the most word occurrence in the reading materials. The open-ended questions aimed to probe the strategies the subjects used to determine word definitions and word comprehension. The interview also included questions asking for the students' opinions, comments, and suggestions about any aspect of vocabulary learning through using reading materials. The data were recorded and interpreted using frequencies and percentages in order to determine the optimal frequency level needed as well as to present the most and least employed vocabulary learning strategies used by the top ten highest achievers. Furthermore, the top ten students on the post-test were also asked to comment informally concerning their vocabulary learning strategies. The students were asked to give reasons for their preferred strategies, and to explain how they used these to acquire the target words. The interviews lasted approximately twenty minutes for each subject. The data collection procedures are summarized in Table 3.4.

**Table 3.4: Summary of Data Collection Procedure**

<b>Data Collection</b>	<b>Time</b>
<i>Introductory Phase</i>	<b>A week before the pre-test</b> (50 minutes)
<b>1. Pre-Test</b>	<b>One week before the reading treatment</b>
- The Translation-Production Test	(60 minutes)
- Word Comprehension in Context	
<b>2. Reading Activities</b>	<b>First to fifth week</b>
3.1. <i>Back to Cambodia</i>	- giving two reading activities per week in English Reading-Writing class (50 minute-periods) over the course of 5 weeks.
3.2. <i>Dear Amanda</i>	
3.3. <i>Home Sweet Home</i>	
3.4. <i>McDonald's</i>	
3.5. <i>Golfing Genius</i>	
3.6. <i>What People Really Want for Their Birthday</i>	
3.7. <i>Mozart</i>	
3.8. <i>The Eiffel Tower</i>	
3.9. <i>Speed Dating</i>	
3.10. <i>Great Love Affairs</i>	
<b>3. Post-Test</b>	<b>Two days after the reading treatment</b>
- The Translation-Production Test	(60 minutes)
- The Word Comprehension in Context Test	
<b>4. Oral Interview</b>	<b>Three days after the post-test</b> ( 20 minutes for each student)

### 3.5 Data Analysis and Statistical Procedures

To appropriately answer the research questions, the following statistical techniques were used in analyzing the data from this study:

#### 3.5.1 Scoring (See Appendix J)

##### (1) The Translation-Production Test (L2 to L1)

The maximum total score possible in this test was thirty points. A point was awarded for each correct word definition. There were two levels of scoring, governed by the following criteria: (a) one point for a totally correct meaning, (b) a half point for

mentioning a partially related meaning, and (c) zero points for no mention of any correct or related meaning.

### **(2) The Word Comprehension in Context Test**

The maximum total score possible for this test was fifteen points. The students were asked to select target words from a box to complete blanks in a passage. One point was given for a correct answer and zero points for an incorrect answer.

### **3.5.2 Data Analysis Procedures**

To answer the research questions addressed and detailed in Chapter 1, the data obtained from the pre-test and the post-test (both word meaning and word comprehension in context) were quantitatively analyzed using the SPSS / PC (Statistical Package for Social Science / Personal Computer) program. In addition, the information obtained from the interviews was categorized and quantified using frequencies and percentages to identify the strategies the subjects employed for incidental vocabulary acquisition through reading.

**(1) Research Question I:** Will the subjects incidentally acquire the target words through reading with controlled word frequency? If so, what kind of vocabulary will they acquire the most and how?

In order to answer Research Question I, the pre-test and the post-test were scored. One point was allotted for a correct answer and zero point for an incorrect answer. Afterward, the data were collected, tallied and analyzed with the SPSS / PC program. Percentages and mean scores on the pre-test and the post-test were calculated to identify the gains from the ten, word-frequency controlled readings. A paired sample t-test was utilized in order to determine significant differences between the mean scores on the pre- and post-tests. Furthermore, the thirty target words on the translation-production test and the fifteen random target words on the word comprehension test were categorized according to their highest to lowest scores using four criteria: (1) word class, (2) abstractness and concreteness of the word, (3) number of parts of speech and number of concepts that the word could embody, and (4) word length in letters to determine their influences on vocabulary acquisition.

(2) **Research Question II**: What strategies will the subjects use to determine the target word definitions and achieve word comprehension?

The data obtained from the interview were analyzed by categorizing and further quantified using frequencies and percentages to provide support in answering Research Question II. The qualitative and quantitative data from the interview session were combined and quantified to calculate the mean values of the most frequent strategies the top ten highest achievers used. In order to determine which strategies the interviewees used in incidental vocabulary acquisition through reading, the mean values were used to determine the most frequently used type of vocabulary learning strategy employed overall by the subjects, as well as its frequency.



## CHAPTER 4

### FINDINGS AND DISCUSSION

The outcome of the data analysis procedure described in chapter 3 is reported and discussed in this chapter and the answers to the research questions raised in chapter 1 are presented. The results and discussion are ordered according to the two research questions addressed in chapter 1. The major findings are presented below.

#### 4.1 Degree of Incidental Vocabulary Acquisition from the Reading Treatment

#### 4.2 Factors Affecting the Degree of Incidental Vocabulary Acquisition through the Reading Treatment

##### 4.2.1 Word Class

##### 4.2.2 Abstractness and Concreteness of Words

##### 4.2.3 Number of Parts of Speech and Word Concepts

##### 4.2.4 Word Length in Letters

#### 4.3 Discussion

#### 4.4 Vocabulary Learning Strategies Influencing Word Processing

#### 4.5 Effect of Controlled Frequencies

#### 4.6 Discussion

#### 4.7 Summary

### **4.1 Degree of Incidental Vocabulary Acquisition from the Reading Treatment**

The first research question concerned the investigation of the effect of word-frequency controlled readings on students' ability in acquiring the target words. The formal research question was:

*Will the subjects acquire vocabulary incidentally through word-frequency controlled reading? If so, what kind of vocabulary will they acquire the most and how?*

In order to answer the first research question, the percentages and mean scores of the pre- and post-tests (both the translation-production test and the word comprehension in context test) were analyzed. The scores of each test were then compared using paired sample t-tests to determine if the students' knowledge of the target words was significantly different before and after the experiment. The results are presented as follows:

**Table 4.1.1: Comparison of the Mean Scores Students Obtained in Pre- and Post-Translation Production Test (in Percentage %)**

N	Post-Test (30 points)		Pre-Test (30 points)		Paired Differences		df	t	Sig. (2-tailed)
	Mean	SD.	Mean	SD.	Mean	SD.			
30	75.88	13.08	1.50	0.41	74.38	12.17	29	33.47	.000**

\*\* Significant at  $p < .001$  level

With respect to the data presented in Table 4.1.1, the pre- and post-test mean scores of the translation production test were significantly different at the .001 level ( $t=33.47$ ,  $p<.001$ ). Most of the subjects knew the meaning of a few words at the time of the pre-test, (mean: 1.50%), while on the post-test, the subjects showed a huge gain in vocabulary meaning knowledge the mean figure being 75.88%. The score increased by 74.38%. This indicates that after the subjects undertook the reading treatment, their target words' meanings improved significantly.

In order to further investigate the degree of improvement in the subjects' word comprehension, the percentages, mean scores and the comparison from pre- and post-test on word comprehension in context tests are presented below. The mean scores of word comprehension in context between the pre- and post-tests show a dramatic improvement in the subjects' new words as can be seen in Table 4.1.2.

**Table 4.1.2: Comparison of the Mean Scores Students Obtained on the Pre- and Post-Word Comprehension in Context Test (in Percentage %)**

N	Post-Test (15 points)		Pre-Test (15 points)		Paired Differences		df	t	Sig. (2-tailed)
	Mean	SD.	Mean	SD.	Mean	SD.			
30	47.77	15.66	1.77	6.76	45.99	14.04	29	17.94	.000**

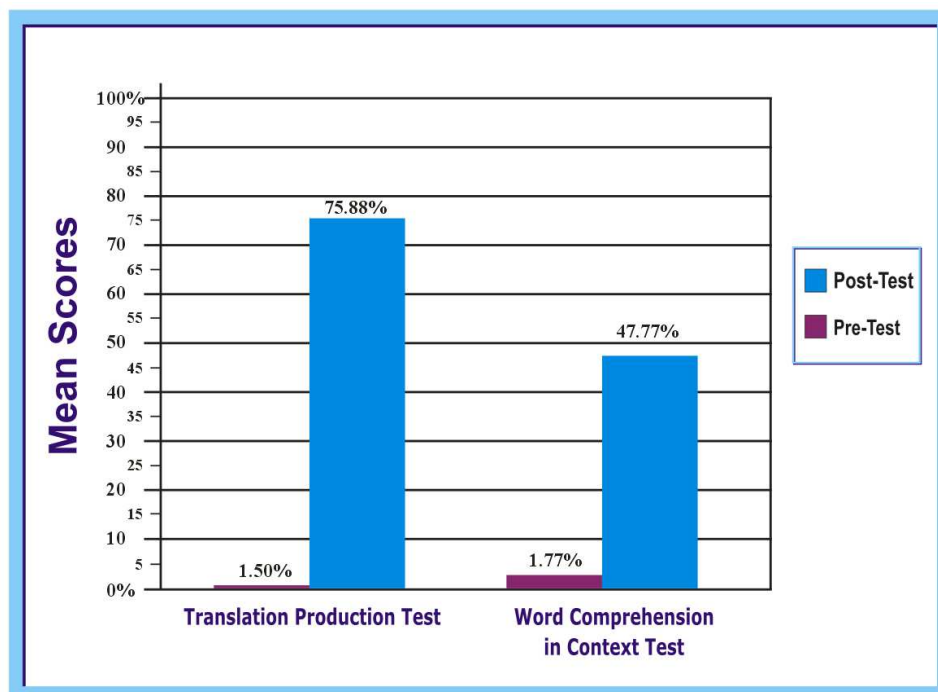
\*\* Significant at  $p < .001$  level

According to the data in Table 4.1.2, the mean score of the pre-test was 1.77 %, which indicates that the students had little or no existing knowledge of the target words. However, the post-test mean score increased by 46% to 47.77%, which demonstrates that the students were able to understand the random target words in context more effectively after the treatment. The results from the t-test confirmed that the difference between the pre- and post-scores on word comprehension was statistically significant ( $t = 17.94$ ,  $p < .001$ ), which also indicates a noticeable improvement in the students' word comprehension abilities.

Based on the significantly higher post-test scores on both the translation-production test and the word comprehension in context test, it is evident that the use of word-frequency controlled readings enhanced the students' incidental vocabulary acquisition. It should be noted that students performed better in the areas of both vocabulary meaning and comprehension.

With respect to the results obtained from the analysis of data pertaining to the pre- and post-tests, it can be concluded that although the differences between the mean scores of both the translation-production test and the word comprehension in context test were statistically significant, the findings seem to indicate that the reading treatment affected the students' understanding of word meaning in isolation and their word comprehension in context differently. Also, word meaning seemed to be acquired to a greater degree by the subjects after the treatment than did word comprehension in context as shown in Figure 2.

**Figure 2: Students' Vocabulary Acquisition on Translation Production and Word Comprehension in Context Tests**



However, the number of words tested in the translation production and the word comprehension in context tests differed in that the word comprehension in context tests contained only 15 random target words while the translation production tests contained all 30 target words. To confirm the results, only the 15 words on each test were compared, as shown in Table 4.1.3.

**Table 4.1.3: Comparison of the Mean Scores Students Obtained on the Pre- and Post-Translation Production tests (TPT) and the Pre- and Post-Word Comprehension in Context Tests (WCT)**

N	Test	Post-Test (15 points)		Pre-Test (15 points)		Paired Differences		df	t	Sig. (2-tailed)
		Mean	SD.	Mean	SD.	Mean	SD.			
30	TPT	77.80	13.55	0	0	77.80	13.55	29	30.35	.000**
30	WCT	47.77	15.66	1.77	6.76	45.99	14.04	29	17.94	.000**

\*\* Significant at  $p < .001$  level

The data presented in Table 4.1.3 demonstrate that in both the pre- and post-tests, almost none of the students had acquired the fifteen random target words (mean scores: 0% on translation-production test and 1.77% on the word comprehension test). Obviously, after reading the treatment, the students gained significantly higher scores on both tests: at 77.80% on the translation-production test and at 47.77% on the word comprehension test. This confirmed the results shown in Figure 2 that word meanings were more easily acquired by the students than word comprehension in context.

Furthermore, it is worth investigating what factors influenced the subjects' vocabulary acquisition, both meaning and comprehension. The thirty target words on the translation production test and the fifteen random target words on the word comprehension test were categorized using four criteria: (1) word class, (2) abstractness and concreteness of word, (3) number of parts of speech and number of concepts of the word, and (4) word length in letters. This was done in order to determine their influence on the subjects' vocabulary acquisition.

## **4.2 Factors Affecting the Degree of Vocabulary Acquisition through the Reading Treatment**

### **4.2.1 Word Class**

Word class is viewed as one factor which affects some levels of processing; the way in which information is stored and accessed in the brain may differ for the types of words.

Therefore the thirty target words were classified according to word class in order to examine this effect and the results are presented in Table 4.2.1.1.

**Table 4.2.1.1: Mean Scores Obtained from Pre- and Post-Translation Production Tests Categorized by Five Word Classes**

No.	30 Target Words	Pre-Test (%) 30 points	Post-Test (%) 30 points	Classes of Word Gained (%)
<b>1. prepositions</b>				
1	despite	0	96.7	<b>96.7</b>
<b>2. adverbs</b>				
2	eventually	0	76.7	<b>85.9</b>
3	however	3.3	83.3	
4	probably	0	86.7	
5	therefore	0	96.7	
<b>3. nouns</b>				
6	achievement	0	76.7	<b>76.7</b>
<b>4. adjectives</b>				
7	complex	0	66.7	<b>71.25</b>
8	entire	0	86.7	
9	familiar	0	93.3	
10	obvious	0	70	
11	particular	0	70	
12	spontaneous	0	53.3	
13	various	0	73.3	
14	unique	0	56.7	
<b>5. verbs</b>				
15	affect	0	50	<b>67.72</b>
16	concentrate	0	23.3	
17	consider	0	83.3	
18	contribute	0	66.7	
19	encourage	0	90	
20	establish	0	56.7	
21	fascinate	0	90	
22	gather	0	66.7	
23	indicate	0	86.7	
25	involve	0	70	
26	occur	0	90	
27	process	0	80	
28	provide	0	70	
29	reveal	0	73.3	
30	settle	0	66.7	
<b>Total</b>		<b>0.11</b>	<b>72.34</b>	

As shown in Table 4.2.1.1, the thirty target words were categorized into five classes: prepositions, adverbs, nouns, adjectives, and adverbs. The five classes of words

are presented from the highest score to the lowest level score obtained on the post-test.

With regard to the data in Table 4.2.1, it is apparent that the students acquired the word meanings overall at a rate of 77.97%. Although the subjects acquired prepositions at a rate of 96.7%, and nouns at a rate of 76.7%, the preposition and noun categories contained only one word for each. This was due to the decisions taken at the time of the selection of the target words. The data regarding preposition and noun categories will therefore be disregarded.

However, the subjects acquired adverbs at a high rate at 85.9%. By contrast, verbs and adjectives were much harder for the students to acquire. The students acquired verbs least well at a 62.72% rate, and adjectives were acquired at a rate of 71.25%.

In order to further investigate the effect of word class on both the acquisition of word meaning and word comprehension, the mean scores obtained on the post-tests of both translation-production and word comprehension are compared in Table 4.2.1.2.

**Table 4.2.1.2: Score Comparison of the Pre- and Post-Translation-Production (TPT) and the Pre- and Post-Word Comprehension in Context Test (WCT), Categorized by Five Word Classes**

No.	15 Tested Words	Pre-Test (%)				Post-Test (%)			
		TPT	Mean	WCT	Mean	TPT	Mean	WCT	Mean
<b>1. prepositions (1)</b>									
1	despite	0	0	0	0	96.7	96.7	70	70
<b>2. adverbs (2)</b>									
2	eventually	0	0	0	0	76.7	86.4	66.7	60
3	therefore	0		0		96.7		53.3	
<b>3. verbs (4)</b>									
4	consider	0		0		83.3		86.7	
5	fascinate	0	0	0	0	90	80.8	46.7	55
6	involve	0		0		70		66.7	
7	process	0		0		80		20	
<b>4. nouns (5)</b>									
8	achievement	0	0	6.7	6.7	76.7	76.7	20	20
<b>5. adjectives (7)</b>									
9	complex	0		6.7		66.7		63.3	
10	entire	0		6.7		86.7		33	
11	familiar	0	0	0	2.9	93.3	71	20	42.3
12	particular	0		0		70		33.3	
13	spontaneous	0		0		53.3		10	
14	various	0		6.7		70		73.3	
15	unique	0		0		56.7		63.3	
<b>Total</b>		<b>0</b>	<b>0</b>	<b>1.8</b>	<b>1.8</b>	<b>77.8</b>	<b>68.3</b>	<b>48.4</b>	<b>49.5</b>

The data shown in Table 4.2.1.2 demonstrates that the highest level of vocabulary acquisition occurred with adverbs (86.4%) and verbs (80.8%) on the post-translation production test. Meanwhile, on the word comprehension in context (post-test), students correctly understood adverbs (60%) and verbs (55%) in the contexts provided. Meaning can be defined as knowledge of a word which can be stored and retrieved to construct lexical knowledge. The overall results of the translation post-test production test revealed that students incidentally acquired the five word classes moderately well at 68.3%.

On the contrary, the five word classes for word comprehension were acquired less effectively by the subjects although it can be seen that the overall word comprehension for the five word classes increased by 49.5%. For word comprehension, the highest mean scores came from adverbs at 60% and verbs at 55%. When compared to the translation production post-test, there was a noticeable difference between the two tests of 18.8%. The results of both tests were in agreement that the easiest word classes for the subjects



in this study were adverbs since their meanings were the easiest to be acquired while verbs and adjectives were the most difficult.

#### 4.2.2 Abstractness and Concreteness of Words

The researcher and a native experienced English teacher rated the semantic features of the thirty target words i.e. how abstract or concrete they were according to their imagineability and context availability in the ten reading texts. The context-availability ratings were determined by the researcher and the experienced native English teacher to rate a specific attribute (for example, how easy is it for you to think of a meaning for this word?) that was conceptually related to the contextual support. If the two persons found it difficult to place a word into a sentence, then it was assumed to be difficult to retrieve relevant information from prior knowledge for that word so the word was regarded as abstract.

The abstractness of a word refers to an idea or concept which is a function of perceptual observability and is characteristic of contextual constraints, specific to the ten word-frequency controlled readings such as the words *involve* and *complex*. To make the meaning of these abstract words clearer, some examples and contextual clues are needed. The concreteness of a word in this study, on the other hand, refers to the perception or consideration of an idea or a concept which is of a more specific type of information and its meaning is stable in all contexts such as *despite*, and *however*. The thirty target words were then analyzed according to the effect of the abstractness and concreteness of the words on vocabulary acquisition.

The data presented in Table 4.2.2.1 divided the thirty target words into two categories: fifteen abstract words and fifteen concrete words. The findings were then analyzed according to the effect of the abstractness and concreteness of the words on students' vocabulary acquisition. Overall, there was a slight difference in the acquisition of the two groups of words. The subjects acquired the abstract words at a rate of 57.5%, and they acquired the concrete words at a slightly higher rate—67.4%.

**Table 4.2.2.1: Abstractness and Concreteness of Words as an Influence on Word Meaning Gains on the Translation Production Test**

No.	Target Words	Difficulty of Word Meanings (%)			
		Abstractness	Mean	Concreteness	Mean
<b>1. prepositions</b>					
1	despite	-	-	96.7	<b>96.7</b>
<b>2. adverbs</b>					
2	eventually	76.7		-	
3	however	-	<b>81.1</b>	83.3	<b>90</b>
4	probably	86.7		-	
5	therefore	-		96.7	
<b>3. nouns</b>					
6	achievement	76.6	-	-	-
<b>3. adjectives</b>					
3	complex	66.7		-	
4	entire	-		86.7	
5	familiar	93.3	<b>71.1</b>	-	<b>71.3</b>
6	obvious	-		70	
7	particular	-		70	
8	spontaneous	53.3		-	
9	various	-		73.3	
10	unique	-		56.7	
<b>5. verbs</b>					
15	affect	50		-	
16	concentrate	23.3		-	
17	consider	83.3		-	
18	contribute	66.7		-	
19	encourage	-		90	
20	establish	56.7		-	
21	fascinate	-	<b>57.4</b>	90	<b>78.8</b>
22	gather	-		66.7	
23	indicate	-		86.7	
24	involve	70		-	
25	occur	-		90	
26	process	80		-	
27	provide	-		70	
28	reveal	-		73.3	
29	settle	46.7		-	
30	tend	40		-	
<b>Total</b>		<b>64.7</b>	<b>57.5</b>	<b>80</b>	<b>67.4</b>

When examining individual word classes, verbs categorized as abstract were acquired by the subjects at a moderate rate of 57.4%. Moreover, abstract adjectives were

the most difficult to acquire, at 71.1%. The highest abstract word gains occurred in the adverb group at 81.1%.

Further, for all word types the concrete words had much higher mean scores. The table illustrates that abstractness and concreteness of words was a crucial factor in vocabulary acquisition. The more abstract the word, the more difficult it was to acquire. More importantly, if a verb was abstract, the students would have great difficulty learning its meaning.

**Table 4.2.2.2: Abstractness and Concreteness of Words as an Influence on the Word Comprehension Gains on Word Comprehension in Context Test**

No.	Target Words	Difficulty of Word Meanings (%)			
		Abstractness	Mean	Concreteness	Mean
<b>1. prepositions</b>					
1	despite	-	-	70	<b>70</b>
<b>2. adverbs</b>					
2	eventually	66.7	<b>66.7</b>	-	<b>53.3</b>
3	therefore	-		53.3	
<b>3. verbs</b>					
4	consider	86.7		-	
5	fascinate	-	<b>57.8</b>	46.7	<b>46.7</b>
6	involve	66.7		-	
7	process	20		-	
<b>4. adjectives</b>					
8	complex	63.3		-	
9	entire	-		33	
10	familiar	20	<b>31.7</b>	-	<b>56.5</b>
11	particular	33.3		-	
12	spontaneous	10			
13	various	-		73.3	
14	unique	-		63.3	
<b>5. nouns</b>					
15	achievement	20	<b>20</b>	-	-
<b>Total</b>		<b>43</b>	<b>44.1</b>	<b>56.6</b>	<b>56.6</b>

Turning now to word comprehension, the results were in agreement with those for word meanings. Abstract words were acquired at a rate of 47.8%, whereas concrete words were comprehended at a slightly higher rate of at 51.6%. It can also be said that it was harder for the students to achieve word comprehension than to acquire word

meaning, as shown in Table 4.2.2.2. However, there was a difference in the level of acquisition of different word classes, as compared to Table 4.2.2.1. For word comprehension, abstract nouns were the most difficult to acquire, at a rate of only 20% with abstract adjectives at only 31.7% although this might be due to the fact that the number of words in each word class was not the same.

Therefore, a further investigation was conducted to take into account the number of words for each part of speech and the number of word meaning concepts in order to obtain more revealing explanations.

#### **4.2.3 Number of Parts of Speech and Word Concepts**

Although, the target words were carefully tailored to be used as only a single part of speech, and with a single conceptual meaning in the ten texts, when the students encountered unknown words, they sometimes looked up their meanings in a dictionary. They probably found that some of the target words belonged to more than one part of speech (for example, *complex* was used as an adjective in this study but in a dictionary it also appears as a noun) and had multiple concepts or various meanings (for example, *process*, in this study refers to dealing with something in a particular way but in a dictionary it also has other meanings). It is, therefore, interesting to examine how this factor affected the study.

**Table 4.2.3.1: Comparison between the Scores obtained on the Translation Production Post-Test (TPT) and the Word Comprehension in Context Post-Test (WCT), Delineated by Number of Parts of Speech**

No.	Target Words	One Part of Speech (%)				More Than one Part of Speech (%)			
		TPT	Mean	WCT	Mean	TPT	Mean	WCT	Mean
	<b>1. prepositions</b>								
1	despite	96.7	<b>96.7</b>	70	<b>70</b>	-	-	-	-
	<b>3. adverbs</b>								
2	eventually	76.7	<b>86.7</b>	66.7	<b>60</b>	-	-	-	-
3	therefore	96.7		53.3					
	<b>2. verbs</b>								
4	consider	83.3		86.7					
5	fascinate	90	<b>81.1</b>	46.7	<b>40.5</b>	-	<b>80</b>	-	<b>20</b>
6	involve	70		66.7					
7	process	-		-		80		20	
	<b>5. nouns</b>								
8	achievement	76	<b>76</b>	20	<b>20</b>	-	-	-	-
	<b>4. adjectives</b>								
9	complex	-		-		66.7		63.3	
10	entire	86.7		33		-		-	
11	familiar	-	<b>70.8</b>	-	<b>42.6</b>	93.3	<b>72.2</b>	20	<b>41.7</b>
12	particular	70		33.3					
13	spontaneous	53.3		33.3		-		-	
14	various	73.3		73.3					
15	unique	-		-					
	<b>Total</b>	<b>79.4</b>	<b>82.4</b>	<b>53</b>	<b>46.7</b>	<b>74.2</b>	<b>76.1</b>	<b>41.7</b>	<b>30.9</b>

The fifteen random words on the word comprehension in context test were compared with the results from the translation-production test in order to establish the overall picture. Table 4.2.3.1 illustrates that target words which were used as only one part of speech were, on average, acquired at a rate of 82.4% for word meaning and 46.7% on word comprehension. Specifically, preposition (which contained only one word) and adverb vocabulary was the most successfully acquired in both tests. Despite the words' characteristics pertaining to their part of speech in the dictionary, their meanings were not overly difficult for the students to grasp. As shown in the analyzed data, the students comprehended the target words' meanings on the translation-production test at a high rate: 82.4% for the words belonging to just one part of speech but only at 46.7% for the words belonging to more than one part of speech. However, an adjective and a verb belonging to more than one part of speech in the dictionary *process* and *familiar* were

surprisingly acquired at the highest rate for their meanings; *familiar* was acquired the highest at 93.3% followed by *process* at 80%.

On the contrary, the target words belonging to more than one part of speech were acquired at a lower rate on the word comprehension in context test (30.9%). On this test, verbs serving as more than one part of speech were acquired at the lowest rate by the students (only 20%).

Verbs and adjectives seemed to be quite difficult word classes to acquire on both tests due to their characteristic abstractness, as well as their length in number of letters. It should be noted that students performed better in the acquisition of words which are used as only one part of speech and which are concrete.

**Table 4.2.3.2: Comparison between the Score obtained on the Translation Production Post-Test (TPT) and the Word Comprehension in Context Post-Test (WCT), Delineated by Number of Concepts of Meaning**

No.	Target Words	One Concept (%)				More Than One Concept (%)			
		TPT	Mean	WCT	Mean	TPT	Mean	WCT	Mean
<b>1. prepositions</b>									
1	despite	96.7	<b>96.7</b>	76.7	<b>76.7</b>	-	-	-	-
<b>3. adverbs</b>									
2	eventually	76.7	<b>86.7</b>	66.7	<b>60</b>	-	-	-	-
3	therefore	96.7		53.3					
<b>2. verbs</b>									
4	consider	83.3		86.7		-			
5	fascinate	90	<b>86.7</b>	46.7	<b>66.7</b>		<b>75</b>		<b>43.4</b>
6	involve					70		66.7	
7	process					80		20	
<b>5. nouns</b>									
8	achievement	76.7	<b>76.7</b>	20	<b>20</b>	-	-	-	-
<b>4. adjectives</b>									
9	complex	-		-		66.7		63.3	
10	entire	86.7		33		-		-	
11	familiar	-	<b>67.9</b>	-	<b>42.6</b>	93.3	<b>80</b>	20	<b>41.7</b>
12	particular	70		33.3					
13	spontaneous	53.3		33.3					
14	various	73.3		73.3					
15	unique	56.7		63.3					
<b>Total</b>		<b>78.2</b>	<b>67.3</b>	<b>52.7</b>	<b>51.9</b>	<b>77.5</b>	<b>77.5</b>	<b>42.5</b>	<b>42.6</b>

Likewise, for number of word meaning concepts, as shown in Table 4.2.3.2, the mean scores obtained from the translation production post-test and the word

comprehension in context post-test indicate that the target words which had only one concept were acquired at a rate of 67.3% on the former and at 51.9% on the latter. Surprisingly, the words with more than one concept were acquired at the slightly higher rate of 77.5% on the translation-production test, but only at 42.6% on the word comprehension in context test.

It is apparent that adverbs and prepositions which belonged to a single concept were acquired at a high rate on both tests. Adjectives and verbs were gained by the subjects at a moderate rate. On the translation-production test, the subjects acquired adverbs and verbs which belonged to one concept equally at 86.7%. Nevertheless, knowledge of nouns and adjectives with one concept improved differently for the subjects between the two tests. In the case of adjectives with a single concept, the subjects also produced higher scores on the translation production test (67.9%) than on the word comprehension in context test (42.6%).

It can be noticed that the target words which belonged to more than one concept were more difficult for the subjects to acquire. Specifically, on the word comprehension in context test, the subjects partly comprehended two word categories at a moderate rate: verbs at 43.4% and adjectives at 41.7%. However, their meanings were not overly difficult to grasp by the subjects as seen in the categories of adjectives (80%) and verbs (75%) on the translation-production test. This indicates that the students performed better in supplying a correct word meaning than using it in context.

#### **4.2.4 Word Length in Letters**

As far as the difficulty of words is concerned, word length in letters is certainly one attribute which affected the target words' acquisition. Word length in letters is assumed to influence students' ability in recognizing target words and processing them while reading.

After calculating the scores on the post-test, the target words were classified into three categories according to their length in letters: four to six letter words, seven to nine letter words, and ten to twelve letter words, in order to examine their different influences on word learning.

With regard to the analyzed data in Table 4.2.4.1, it can be seen that after the reading treatment, the words in total, were gained at a rate of 69.4%. The words which had seven to nine letters were acquired at the highest rate, 79.78%, while the words with ten to twelve letters were acquired at the lowest rate, 61.10%. It is worth noting that the words with four to six letters were only gained at a moderate rate.

Regarding four to six letter words, the words “tend” (40%) and “affect” (50%) were probably not acquired at a high rate by the subjects because these words have more than one meaning in a dictionary.



**Table 4.2.4.1: Word Length in Letters as an Influence on Word Meaning Gains  
on the Translation Production Test**

No.	Word Length in Letters	Score on Translation Post-Test (%)	Mean
<i>4-6 Letters (9 words)</i>			
1	affect (v.)	50	<b>67.43</b>
2	despite (prep.)	96.7	
3	entire (adj.)	86.7	
4	gather (v.)	66.7	
5	occur (v.)	90	
6	reveal (v.)	73.3	
7	settle (v.)	46.7	
8	tend (v.)	40	
9	unique (adj.)	56.7	
<i>7-9 Letters (15 words)</i>			
10	consider (v.)	83.3	<b>79.78</b>
11	complex (adj.)	66.7	
12	encourage (v.)	90	
13	establish (v.)	56.7	
14	fascinate (v.)	90	
15	familiar (adj.)	93.3	
16	however (adv.)	83.3	
17	indicate (v.)	86.7	
18	involve (v.)	70	
19	obvious (adj.)	70	
20	probably (adv.)	86.7	
21	process (v.)	80	
22	provide (v.)	70	
23	therefore (adv.)	96.7	
24	various (adj.)	73.3	
<i>10-12 Letters (6 words)</i>			
25	achievement (n.)	76.7	<b>61.10</b>
26	concentrate (v.)	23.3	
27	contribute (v.)	66.7	
28	eventually (adv.)	76.7	
29	particular (adj.)	70	
30	spontaneous (adj.)	53.3	
<b>Total</b>		<b>72.34</b>	<b>69.44</b>

**Table 4.2.4.2: Word Length in Letters as an Influence on Word Comprehension  
Gains on the Word Comprehension in Context Test**

No.	Word Length in Letters	Score on Word Comprehension Post-Test (%)	Mean
<i>4-6 Letters (3 words)</i>			
1	despite (prep.)	70	<b>35.44</b>
2	entire (adj.)	33	
3	unique (adj.)	63.3	
<i>7-9 Letters (7 words)</i>			
4	complex (adj.)	63.3	<b>50.96</b>
5	consider (v.)	86.7	
6	familiar (adj.)	20	
7	fascinate (v.)	46.7	
8	involve (v.)	66.7	
9	process (v.)	20	
10	therefore (adv.)	53.3	
<i>10-12 Letters (5 words)</i>			
11	achievement (n.)	20	<b>40.66</b>
12	eventually (adv.)	66.7	
13	particular (adv.)	33.3	
14	spontaneous (adj.)	10	
15	various (adj.)	73.3	
<b>Total</b>		<b>48.42</b>	<b>42.36</b>

Regarding word length in letters as an influence on word comprehension, there was a noticeable difference between the overall mean score from the word comprehension in context test and that of the translation production test. Table 4.2.4.2 shows that the overall mean score of the three groups for word length was 42.36%, which was noticeably less than that from the translation production test (27.08%).

However, there was agreement between the results of the two tests in that the words with seven to nine letters were acquired at the highest rate, which was 50.96% in the word comprehension in context test. The words with ten to twelve letters were acquired at the moderate rate of 40.66% in the word comprehension in context test.

### 4.3 Discussion

From the results of this study, it is evident that providing word-frequency controlled reading had a profound effect on students' ability to acquire vocabulary incidentally. The analyses of the post-tests on word meaning and word comprehension illustrate that the subjects' controlled exposure to words during the reading process was very similar to real-life exposure to target words in that one has to encounter a word several times before eventually acquiring its meaning. Most students were generally able to supply correct meanings and apply the target words in certain contexts.

It seems that the comprehension of words by the subjects was only partially successful from the readings, but it was not as successful as the acquisition of meaning. This was especially true for words with abstract meanings, such as verbs, where very little meaning uptake seemed to have occurred. The findings refer to the word forms and common meanings that must be recognized automatically by a reader, regardless of the context, for a minimum of comprehension to be achieved.

Even though the students' ability to construct both knowledge of meanings and comprehension of the target words increased significantly, they increased by different degrees. The students acquired the target words' meanings at a much higher rate than they achieved comprehension in context. The findings therefore agreed with the results of the study by Pigada and Schmitt (2006), where meanings were quickly acquired for all classes of words as a result of frequency. Knowledge of verbs was much lower than that of other word classes due to their grammatical difficulty. There are two reasons for this. Firstly, it may be because word meanings are primarily acquired from contextual information provided by controlled frequency in readings. Encountering the target words in several different reading contexts could have been a contributing factor to the students' gains in acquiring meaning. The second reason could be that the students found the application of word usage, and proper usage in context, much more complicated than the acquisition of meaning. As Read (2000) postulated, merely recognizing words is much simpler than actually comprehending and utilizing those words. This process is also dependent on the ability of a learner to understand word concepts while reading (Fukkink et al., 2001).

Regarding the types of words, the study distinguished four major possible factors which might influence a student's ability to acquire vocabulary. Word class is the first factor to consider. In this study, verbs, adjectives, and adverbs were the most difficult for the subjects to acquire. The results of this study are in agreement with the studies conducted by Gentner (1982), Markman (1989), and Kweon and Kim (2008), in that verbs present more of a learning challenge than nouns, and thus learners develop verb vocabulary at a slower rate. The mapping between form and meaning for verbs is more difficult than for nouns because of the argument structure information of verbs. For example, how many and what kinds of arguments (e.g. theme, goal, or location) should be tackled in the learning process of verbs, a consideration which is not necessary when learning nouns. Furthermore, the results corresponded to the studies by Benedict (1979) and Gentner (1978) that verbs are more difficult to learn than other types of words. Since, verb vocabulary was acquired at a lower rate.

The second factor is the concept of a word in context. The ability to communicate abstract concepts in a language depends on the surrounding contextual support. It is, however, generally thought that this ability is secondary to, or dependent upon, the ability to use language to refer to concrete concepts. It is currently widely accepted that concrete words are unconditionally easier than abstract words for a learner to process (Gentner, 1982). "Achievement" and "spontaneous," for instance, were difficult for the subjects due to their abstract concepts in context and their word lengths, even though in this study they belonged to a single part of speech category. On the contrary, the word "despite" was easier for the subjects to learn from context because it mostly occurred in sentences as a signal word in a context which showed a subsequent contrasting idea.

The third factor is the number of parts of speech to which a word belongs, and the number of meanings a word has. These factors were consistent in the study, but are changeable in other situations. One word can have more than one function and more than one meaning. If a word can be used in several senses, then the word is necessarily associated with several different sets of word classes and meanings, each of which corresponds to one of the meanings of the word. If the students can determine which words correspond to a given verb, they can use those words for discovering the right meaning of the verb in a given sentence. The individual words "tend" and "familiar,"

were classified as having more than one concept, depending on context. In this study, these words were used with the same concept in each context on a consistent basis. Also, they are not very abstract; therefore most students were able to acquire them in the experiment. However, it is difficult to apply the appropriate meaning and function of the same word in some contexts, even if the word has already been encountered several times. The process of applying a word in context requires more than just recognition, but also the ability to determine the appropriate word usage (Read, 2000).

The last factor influencing vocabulary acquisition in this study is word length in letters. Orthographics plays an important role in the translation from word form to word meaning. The students scored low on words with ten to twelve letters on both the translation production test and on the word comprehension in context test. If these words happened to be abstract, it was even harder for the students to acquire them, as was the case with the words “achievement,” “spontaneous,” and “particular.” The words “concentrate,” “spontaneous,” and “contribute” were the most difficult in the category of ten to twelve letter words because their meanings were less easy for the subjects to guess, even though they were surrounded by contextual clues. It is noteworthy that the length of words is a very crucial factor in the success of students’ vocabulary acquisition.

#### **4.4 Vocabulary Learning Strategies as an Influence on Word Processing**

The second research question was designed to explore the strategies the subjects employed in acquiring the target words. The formal research question was:

*What strategies will the subjects use to determine the target word definitions and achieve word comprehension?*

This research question attempted to identify the most frequently used strategies that the top ten highest achievers employed in learning the target words both during and after the readings. It also sought to examine the most successful strategies that they used. The findings are discussed according to the results obtained from the oral interviews, which presented an overall picture of the strategies used by the subjects. The strategies were categorized to help identify the specific strategies which were successful for the top ten highest achievers

The results from the responses in the oral interview are presented in Table 4.4.1. It can be seen that overall, strategies were employed for almost eight target words (mean = 7.5) by the ten most successful students. Each category of vocabulary learning strategy was employed by one to two students on average (mean = 1.93). The most frequently employed strategies were consulting information sources and dictionary use, both at 25% especially the sub-strategies of guessing from context, which was the most frequently used at 60%, asking peers, and using a bilingual dictionary at 30%. The least employed strategy was in the “other” category, at 12.5%. Sub-strategies in this category included encountering the word on TV, learning it from a product label, and encountering it while learning other subjects, all at 10%, and encountering the word while taking other tests, at 20%. Meanwhile, the memorization and practice category was only a moderately-used strategy by the successful students, at 15%. This included searching for examples of use, writing and repeating new learned words, and learning from familiar roots/stems, at 20%.

**Table 4.4.1: Summary of Four Types of Vocabulary Learning Strategies, from Data Obtained from the Oral Interview Sessions**

Type	Vocabulary Learning Strategies	No. of Target Words	No. of Subjects
<b>1</b>	<b>Information Sources</b>		
	1.1 guessing from context	22	6 (60%)
	1.2 asking peers	15	3 (30%)
	1.3 asking tutors	3	2 (20%)
	1.4 asking siblings	5	2 (20%)
	1.5 asking teacher	1	1 (10%)
	1.6 asking parents	1	1 (10%)
	<b>Mean</b>	<b>7.48</b>	<b>2.5 (25%)</b>
<b>2</b>	<b>Dictionary Use</b>		
	2.1 using bilingual dictionary (Eng-Th)	26	3 (30%)
	2.2 using monolingual dictionary (Eng-Eng)	5	2 (20%)
	<b>Mean</b>	<b>15.50</b>	<b>2.5 (25%)</b>
<b>3</b>	<b>Memorization and Practice</b>		
	3.1 searching for example use	6	2 (20%)
	3.2 writing and repeating new learned words	8	2 (20%)
	3.3 learning from familiar roots/stems	7	2 (20%)
	3.4 learning from synonym/antonym	1	1 (10%)
	3.5 analyzing the word by its suffix	2	1 (10%)
	3.6 determining type of word	3	1 (10%)
	<b>Mean</b>	<b>4.50</b>	<b>1.5 (15%)</b>
<b>4</b>	<b>Others</b>		
	4.1 encountering while taking other tests	4	2 (20%)
	4.2 encountering while learning other subjects	4	1 (10%)
	4.3 encountering on TV	1	1 (10%)
	4.4 learning from a product label	1	1 (10%)
	<b>Mean</b>	<b>2.50</b>	<b>1.25 (12.5%)</b>
	<b>Total</b>	<b>7.50</b>	<b>1.93 (19.3%)</b>

#### 4.4.1 Information Sources

With regard to guessing from context, the students agreed that using contextual cues was a useful strategy to obtain the meaning of unfamiliar words. Sixty percent of the ten most successful students indicated that they had acquired the target words by guessing from context. Six out of ten used context cues most of the time when unfamiliar words impeded their attempts at comprehending a text. Students A, B, and C tended to make intelligent guesses about a word's meaning before using any other strategies.

Student B found nine unfamiliar words within two passages, and she always tried to infer their meanings from the context. She re-read the surrounding sentences for a particular word she did not know the meaning of, in order to pick up clues that might be helpful in figuring out the meaning of that word. The students also reported that they did not attempt to use contextual clues if they lacked basic knowledge about the surrounded context. According to the interview, the participants pointed out that:

Student A

*“I tried to guess certain target words’ meanings in sentences in which the words were surrounded by familiar vocabulary and context.”*

Student B

*“I usually figured out the target words’ meanings in order to understand what the sentence was about in general.”*

Student C

*“ At the beginning, I tried to figure out the context of a particular word. Then I guessed its meaning to obtain the exact meaning.”*

Guessing from context made up a significant part of the students’ strategy use in dealing with unknown words. However, 60% of all respondents pointed out that they first tried to guess word meanings from context if they were reading an English sentence with several unfamiliar words. Guessing from context is probably one of the most useful skills ESL/EFL learners can acquire and apply, both inside and outside the classroom. In order to improve and develop the development of this skill, vocabulary guessing tasks should be integrated as often as possible into reading activities. This can be more effective after a global or gist understanding of a text has been established.

Likewise, Students D and E made good use of context, but they also employed many other vocabulary strategies. This was in contrast to Student F, who consistently employed the strategy of using context cues every time an unfamiliar word hindered her. As she stated:



Student F

*“I always guessed the meanings of unknown words from contextual clues in a text by considering the general idea of each sentence. I would gradually come to know their meanings after encountering them a few times (at least three times).”*

Furthermore, three participants (30%) relied on the strategy of asking their peers about some of the unfamiliar words they read in the passages. One of them reported that:

Student H

*“When reading, I usually asked my classmates for the meanings of unknown words. If this did not work out, I would look up their meanings in a dictionary.”*

Two subjects indicated that they asked their siblings to verify the meanings of eight of the target words: *“affect, concentrate, consider, complex, contribute, indicate, involve, and occur.”* Student G relied on asking her sister for the meanings of these eight words, whereas Student H only asked her brother to clarify what the word *“indicate”* meant.

Student G sometimes asked her tutor about certain unknown words, even though she deemed them to contribute little to the overall meanings of the texts. She admitted that she could still grasp what the texts were about without expending effort to understand these words. She originally considered the unknown words important and paid a lot of attention to them; however, as she read on to subsequent sentences, she soon forgot about the words. Initially, she had attempted to guess the meanings of the words from context, but after generating possible meanings, she did not deem them acceptable and decided to ask her tutor for clarification of the unknown words.

The teacher was generally respected as a knowledgeable authority by the other students. When one student (Student H) failed to find an appropriate meaning of a word in a dictionary, she would sometimes consult her teacher for an explanation of its meaning and appropriate usage. Previously, if she could not fit a dictionary meaning to a word in the context of a passage, she was inclined to give up and not to continue her efforts to find the meaning of the unfamiliar word. Therefore, asking her teacher was a good strategy for quickly assisting her reading comprehension, especially for the words

which she misread. For instance, she confused the words *affect* and *effect*, and she did not really understand the concepts behind these words because she thought she already knew the meaning of the word *affect*, although her idea was incorrect. Therefore, she finally asked her teacher to explain the different meanings and usage of the two words.

#### 4.4.2 Dictionary Use

Twenty-five percent of the students reported that translation was very useful for vocabulary learning. They commented that dictionary use was the best way to quickly translate word meanings, as well as helping them to easily understand word definitions. Bilingual dictionary use was the most frequently employed strategy by the respondents (30%). However, the students admitted that monolingual dictionaries were also useful to them.

Students A, B, and E occasionally turned to a monolingual turned to a monolingual dictionary rather than a bilingual one. Interestingly, this observation could indicate that these three participants, unlike their peers who always preferred a bilingual dictionary as their primary strategy, actually processed the written input entirely in the target language (English). They did not see any need to translate the concepts they absorbed from the text; instead, they invariably “considered” in English, and if they were significantly obstructed by lexical items, only then did they turn to a dictionary, but always a monolingual one.

##### Student A

“I chose a monolingual dictionary to look up the use of the word “consider” because I thought it provided more examples than the bilingual one.”

Of the ten participants, three mainly relied on a bilingual (English-Thai) dictionary to deal with unfamiliar words. Although a monolingual (English-English) dictionary was available, they preferred the bilingual one. Student I, for example, almost always consulted a bilingual dictionary. She identified target words and other content words as unfamiliar, and frequently consulted the dictionary. For four of the words-- *familiar*, *gather*, *however*, and *therefore*- she used context cues, and for three others she combined the use of a dictionary and context clues or skipped the words altogether.

Similarly, Student J encountered more than thirty unknown words in the two passages, and consulted a bilingual dictionary for only twenty of the words. For the rest, she combined the bilingual dictionary and a monolingual dictionary, or simply skipped them. Such a pattern of strategy use was very similar to the one employed by Student H, who found thirty words which she did not know the meanings of.

The students reported that their reason for generally relying on a bilingual dictionary was the ease of understanding what the word actually meant. For them, it was more convenient to learn the meanings of English words by finding equivalent ones in their native language. They admitted they did not need to translate the meanings from English to Thai if they looked them up in a bilingual dictionary. This reflected the way they comprehended English texts: they translated the printed English words into their native language, Thai. This was especially apparent in one of the participants, Student I. She interpreted the texts in chunks of ideas, usually a phrase or a sentence. Immediately after reading each chunk, she translated it into her mother tongue. As she indicated:

Student B

*“I usually checked the meanings of unknown words in a bilingual dictionary again after reading. I consider this strategy the best for me to understand the words.”*

Two participants used a monolingual dictionary as their main vocabulary strategy. Of the thirty unfamiliar words they encountered, five were dealt with by means of a monolingual dictionary. They also consulted a bilingual dictionary to look up the meanings of some other difficult words. Occasionally, when having difficulty in fitting one of the meanings into the context in the passage, one of the students turned to the bilingual dictionary, hoping that the translated meaning would be less problematic.

One of the students said, “When I wanted to find out the different shades of meaning and to understand which meaning was used in which context, I would choose a bilingual dictionary to find the appropriate usage of a word” (Student E).

Student J also mainly depended on an English-English dictionary for the same reason as Student I, i.e. she did not need to think about the same concept twice- in her native language and the target language, respectively. In addition, she mentioned more

comprehensive entries and a clearer definition as reasons why consulting a monolingual dictionary was her preferred vocabulary strategy.

#### 4.4.3 Memorization and Practice

Twenty percent of the respondents reported that they kept personal vocabulary notes in which they wrote new words, their definitions, translations, and examples. Twenty percent pointed out that they wrote down all new words they came across and tried to search for examples of their usage. In addition, 20% of the students noticed word roots and stems, from which they felt that multiple meanings and multiple dimensions of meanings (referential, syntactic, pragmatic, and emotional) could be decoded. As student F pointed out:

Student F

*“When I saw unknown words, I often looked at coordinating words and the context in general. If I still could not get the meaning, I sometimes looked at their roots. Then I tried to guess the meanings from these roots”.*

Ten percent of the respondents predicted the meaning of unfamiliar words when they were used with an example of a familiar word and the unknown words were paired with synonyms or other closely related words during reading. One student reported that she attempted to comprehend some words by first recognizing stems, to which affixes (prefixes or suffixes) had been added. Student C reported that:

Student C

*“I sometimes used references for particular words. I sometimes determined the words’ prefixes (pre-meanings) and suffixes (post-meanings) to get their meanings. I think this way is easier than memorization alone.”*

One student out of ten felt that thinking of a picture or imagining a look-alike word helped her to remember a word and its meaning. She could break the word down into a more familiar word. She could then associate the word “however,” for example, with introducing different idea. Moreover, she also analyzed texts by inferring the

authors' moods (ironic, funny, and serious), which helped her to obtain the meanings of unknown words. As she said:

Student D

*“Many English words have similar meanings and pronunciations. Therefore, I listed some words which might be related to the unknown words. I also studied them, and their synonyms and antonyms.”*

When the students tried to comprehend the words, 10% of them determined the words' type by looking at their semantic functions in context. For instance, the words “achievement,” “spontaneous,” and “eventually” were guessed by the students as being noun, adjective, and adverb respectively, due to their usage in sentences. One of the participants reported that:

Student B

*“At the beginning, I tried to determine the part of speech of an unknown word. Then I would try to guess its meaning. If I could not understand it, I would then look up its meaning in a bilingual dictionary.”*

#### **4.4.4 Others**

Another way of learning the target words was from having encountered them while taking other tests. Twenty percent of the students had noticed the words “complex,” “however,” “establish,” and “indicate” on their National Test (NT). This test is an effective measurement of English proficiency, administered at the end of each academic year. The student concluded that the words she encountered on the test might be important for her to pass her school's own tests, so she noted them to study later on. As she indicated:

Student I

*“When I encountered the word “process” during the reading treatment, I realized that I had seen it on the NT. Thus, I thought I could understand what the word meant.”*

Interestingly, 10% of the top ten highest achievers indicated that they encountered the words “concentrate” and “process” while studying in a science class. They gradually learned these words from their science teacher, so this exposure helped them comprehend the words better. The two participants reported that:

Student C

*“I had encountered the two target words in science class before attending the reading treatment, so I recorded them in my notebook to find out their meaning.”*

Student J

*“When I encountered the words “process” and “concentrate” during the reading treatment, I suddenly realized that I had encountered them before in science class. Therefore, I thought I could guess their meanings from the texts.”*

As useful aids to learning English, one student noted that TV programs, product labels, and other course books helped him learn new words incidentally. One of the ten students pointed out that she had heard the words “complex” and “reveal” from cosmetics’ advertisements on TV. Incidentally, she determined the word meanings from pictures and their descriptions on TV. Furthermore, one participant (10%) saw on a product label (for ice cubes), the word “unique,” so this helped her figure out its meaning. Two respondents reported that:

Student E

*“I myself like watching cable TV; this helped me learn the word, “complex” and “reveal,” from an advertisement about women’s skin products.”*

Student G

*“I always saw the word “unique” on a product label for ice cubes, so I thought I could guess its meaning.”*

#### 4.5 The Effect of Controlled Frequency

In addition to the other contributing factors, the students also commented on their need for word-frequency occurrence, for each target word, in the reading texts. Table 4.5 shows the response percentages for each word, divided by frequency.

Based on the data shown in Table 4.5, the results indicate that, on average, the top ten highest achievers were able to acquire a word after approximately six encounters (mean= 6.35) with it in the texts. Upon further investigation, it was revealed that the students all required ten exposures (mean = 10) for the word “spontaneous” (100%). Other extreme results included “affect” (80%), “encourage” (30%), “obvious” (30%), “reveal” (20%), “establish” (10%), “fascinate” (10%), and “particular” (10%). The lowest required frequencies of occurrence (mean= 3.30) were for the words “entire” (20%), “however” (20%), “consider” (10%), “eventually” (10%), and “occur” (10%). The students also reported that they actually started noticing the target words by the third reading. They guessed that those words might be used in their examinations later on. The fifth and sixth exposures further alerted them to the necessity of learning the words, and therefore caused them to turn to memorizing the target words’ meanings after the reading treatment

**Table 4.4.2: Students' General Perception of Their Need for Frequency of Word Occurrence in the Reading Treatment from the Oral Interview**

Target Words	Need for Word Occurrence (%)										Mean	SD.
	1	2	3	4	5	6	7	8	9	10		
1. achievement (n.)	-	-	-	50	10	30	10	-	-	-	5	1.16
2. affect (v)	-	-	-	-	-	-	-	10	10	80	9.70	.68
3. concentrate (v)	-	-	-	-	-	40	30	20	10	-	7	1.05
4. consider (v.)	-	10	10	40	30	-	10	-	-	-	4.30	1.33
5. complex (adj.)	-	-	-	20	50	10	10	10	-	-	5.40	1.27
6. contribute (v.)	-	-	10	-	50	20	20	-	-	-	5.40	1.17
7. despite (prep.)	-	-	-	20	-	20	40	20	-	-	6.40	1.43
8. encourage (v)	-	-	-	-	-	10	10	40	10	30	8.40	1.35
9. establish (v)	-	-	-	-	-	-	30	50	10	10	8	.94
10. entire (adj.)	-	20	30	40	10	-	-	-	-	-	3.40	.97
11. eventually (adv.)	-	10	60	20	10	-	-	-	-	-	3.30	.82
12. fascinate (v.)	-	-	-	-	-	-	-	30	60	10	8.80	.63
13. familiar (adj.)	-	-	10	30	50	10	-	-	-	-	4.60	.84
14. gather (v.)	-	-	50	40	10	-	-	-	-	-	3.60	.70
15. however (adv.)	-	20	30	50	-	-	-	-	-	-	3.30	.82
16. indicate (v.)	-	-	10	40	30	20	-	-	-	-	4.60	.97
17. involve (v.)	-	-	-	-	-	40	30	30	-	-	6.90	.88
18. occur (v.)	-	10	60	10	20	-	-	-	-	-	3.40	.97
19. obvious (adj.)	-	-	-	-	-	-	-	40	30	30	8.90	.88
20. particular (adj.)	-	-	-	-	-	-	-	50	40	10	8.60	.70
21. probably (adv.)	-	-	-	-	-	10	20	40	30	-	7.90	1.0
22. process (v.)	-	-	-	-	40	40	20	-	-	-	5.80	.79
23. provide (v.)	-	-	-	40	40	10	10	-	-	-	4.90	1.0
24. reveal (v.)	-	-	-	-	-	-	-	10	70	20	9.10	.57
25. settle (v.)	-	-	-	-	10	60	10	10	10	-	6.50	1.18
26. spontaneous (adj.)	-	-	-	-	-	-	-	-	-	100	10	.00
27. tend (v.)	-	-	-	-	-	-	60	40	-	-	7.40	.51
28. therefore (adv.)	-	-	-	-	10	20	70	-	-	-	6.60	.70
29. various (adj.)	-	-	-	-	30	50	20	-	-	-	5.90	.74
30. unique (adj.)	-	-	-	-	10	10	20	20	30	-	7.50	1.35
<b>Total</b>	-	14	30	52	25.6	25	24.7	27.3	27.3	36.3	<b>6.35</b>	<b>.41</b>



## 4.6 Discussion

The second research question attempted to investigate the use of vocabulary learning strategies among the top ten highest achievers in order to understand the pattern of their strategy use and their reasons for using certain strategies. The results were consistent with previous research with respect to the types of vocabulary strategies subjects employ: context cues, monolingual and bilingual dictionaries, and asking others to verify word meanings (Ahmed, 1989; Pressley & Afflerbach, 1995; Fraser, 1999; Nassaji, 2003).

Obviously, when learners undertake a reading task, these strategies dictate how they acquire new words after processing the text. The use of dictionary look-up behavior and translation, as well as strategies concerned with anticipating content, guessing word meanings from contextual clues, integrating information, using relevant background knowledge, and understanding overall reading content are all involved when a reader tries to make sense of a text. If word meanings are not readily identifiable in a text, these strategies are what will allow a reader to infer or search for their meanings (Rott, 2007).

The most frequently used strategy for learning words was by guessing word meanings from context, at 60%. The top ten most successful students indicated that they liked to learn words from context, which they felt was an efficient way to remember words deeply and use them freely. They mentioned that when they came across new words, they would first try to guess the meanings according to contextual clues, and only if this was not successful, and they still needed to know their meanings, would they turn to dictionaries. As pointed out by Hulstijn (2003), a reader must be familiar with 98% of the words in a passage in order to successfully guess an unfamiliar word's meaning from context. This conclusion was also confirmed in the interviews. One student from the group remarked, "When I started the first reading, I encountered too many unknown words in one paragraph; I was discouraged and gave up guessing their meanings from their context. I decided to look up their meanings in a dictionary instead."

Dictionary use was also very popular with the students for comprehension and vocabulary learning. Sometimes, they consulted dictionaries only when the unfamiliar words appeared repeatedly or when the new words were crucial to their understanding of

the passages. Dictionaries were used to aid comprehension. More extended dictionary usage strategies involve not only the meanings of new words, but also set phrases, word usage, and other pertinent information about the words.

It appeared to be quite problematic—if not impossible—to determine a uniform pattern of strategy use. Each subject had his or her own preferences for strategies to employ when tackling unfamiliar words, although the students were equally skilled in comprehending the English texts, as indicated by the results of the post-test. This study, therefore, supported the view that every person is relatively complex in terms of how they deal with new words (Ivey, 1999). Each subject was unique in terms of the patterns of vocabulary strategies that they employed, often favoring one strategy over another because it was the most effective one to deal with unfamiliar words in a particular situation.

In vocabulary acquisition, there is a frequency factor for learning new words. If students encounter the same words quite often in different texts, they can learn those words better. This finding was in agreement with the studies by Rott (1999), Zahar et al. (2001) and Waring & Takaki (2003) that a rate of frequency of around six to ten times was the most efficient for learners to acquire word knowledge, at least, word meanings on multiple-choice tests.

This finding has some implications for the teaching of reading at the secondary level. First, it is essential that vocabulary learning strategies be inserted into the syllabi of reading courses in secondary schools, especially in Thailand. This has also been recommended in many anecdotal and personal reports from the reviewed literature mentioned in the initial part of this paper. Currently, as students barely know how to cope with unfamiliar words, they definitely require some instruction on this topic. Explicit instruction may be expected to assist them in gaining higher levels of proficiency in reading. Second, it might be misleading to consider all learners alike and to assume that all of them can use the same vocabulary strategies with an equal degree of effectiveness. One particular vocabulary strategy may work best for a certain learner, but another learner might achieve the same level of success in obtaining meaning by means of a completely different strategy. It is therefore suggested that learners be encouraged to

practice different types of vocabulary strategies to find out which are the most suitable for them.

In conclusion, the findings for the two research questions indicate the role of frequency of exposure in acquiring lexical items. Building upon existing notions and the classification of the most noticeable strategies employed by the top ten highest achievers, this study provides further support for and confirmation of previous findings, as addressed in the following details.

Based on the results concerning the frequency of vocabulary strategies employed by successful students, four essential issues were revealed. First, the overall strategies the top ten highest achievers used most frequently suggested that they considered comprehension of the target words in the reading texts important to processing the texts.

Second, vocabulary acquisition can be best conceived as a process in which ESL/EFL learners negotiate word meanings from a textual level to a word level. This shift is necessary so that the learner can form a mental connection between the word form and his or her conception of its meaning. ESL/EFL learners who use scaffolding strategies, such as inferring word meanings through contextual clues and determining word meanings through dictionary reference, stand to benefit. A single encounter with a low-frequency word is not likely to lead to its acquisition, as evidenced from the responses of the majority of respondents. Several instances of encountering and processing the same word are necessary for a learner to form the connection between a word's form and its theoretical structure. This process requires motivation on the part of the learner; in other words, there is a need for the learner to acquire the word deliberately. The learner also needs to form word associations and must repeatedly be confronted with the word. An organized attempt to memorize the form and meaning of a word with the assistance of bilingual dictionaries expedites the procedure by which ESL/EFL learners increase their vocabulary.

On the contrary, many ESL/EFL learners with higher language ability acquired words incrementally as they encountered them in context through reading and listening activities, in a quite similar way to that in which native speakers of a language expand their vocabulary. This could be regarded as incidental vocabulary learning. Based on the responses of the top ten most successful EFL learners who participated in this study, it

can be assumed that providing a frequency of approximately six exposures to new words in reading promotes its acquisition. This valuable finding can be used to suggest methodologies to teachers that can be used in the classroom to facilitate ESL/EFL learners' understanding of English texts. Since the key to vocabulary acquisition can be seen as a mediation of meaning, teachers can assume roles to mediate such acquisition by using methodologies and techniques that help to focus the attention of ESL/EFL learners on improving their vocabulary.

## **CHAPTER 5**

### **SUMMARY, IMPLICATIONS AND RECOMMENDATIONS**

This chapter presents a summary of the research and its implications, and recommendations based on the findings set out in chapter four. With respect to the empirical research, implications for teaching and recommendations for further studies are suggested.

#### **5.1 Summary of Research Findings**

This study investigated the effect of providing ten word-frequency controlled readings on grade 9 students' ability to acquire vocabulary incidentally. It also sought to reveal the influential factors which contributed to the students' success in acquiring the words. The quasi-experimental research was conducted using thirty grade 9 students at Hatyairatprachasun School, Hat Yai. Quantitative and qualitative data were collected during the two-month long experiment. The data were then examined in an attempt to identify the influential factors in the success of the students. Two types of data analyses were conducted: quantitative analysis on vocabulary acquisition and qualitative analysis on students' vocabulary learning strategies. The first involved an analysis of the overall vocabulary acquisition by calculating percentages and mean scores using paired sample t-tests. The latter dealt with an analysis of the frequencies of vocabulary learning strategies employed and the word frequency needs in reading of the top ten highest achievers.

The main research findings can be summarized as follows:

5.1.1 After providing ten word-frequency controlled readings, which contained a variety of reading contents and a high frequency of target word occurrence, the translation-production test showed that the students acquired an impressive 75.88% of the thirty target words. The word comprehension in context test showed that the subjects comprehended 47.77% of fifteen random target words two days after the reading

treatment. Additionally, the number of word meanings gained compared with the amount of word comprehension gained was significantly different. That is, the students performed significantly better on the translation-production post-test than on the word comprehension in context post-test. Although, students' word comprehension knowledge tested lower than their word meaning knowledge, word comprehension gains were nevertheless significant in this study. In addition, this study resulted in a sizeable increase in students' vocabulary knowledge compared to previous studies concerning incidental vocabulary acquisition. It can be said that the word-frequency controlled readings had a positive effect on vocabulary learning both for word meaning and word comprehension. In other words, providing students with frequent exposure to words in various contexts helps raise their level of vocabulary knowledge.

5.1.2 The study further examined four influential factors which affected the acquisition of target words. The results are summarized as follows.

#### **(1) Word Class**

Of the five word classes used (nouns, prepositions, adjectives, adverbs, and verbs), three classes of target words were gained particularly well by most of the students: adverbs at 85.85% as seen on the translation production post-test. By contrast, the students had more difficulty acquiring the other two main classes of words included in the study: verbs at 62.72% and adjectives at 71.25%. Word meanings were rapidly acquired almost immediately after the treatment.

On the word comprehension in context post-test, the students correctly understood 60% of the adverbs and 55% of the verbs, whereas adjectives were more difficult to be acquired by the students at only 42.3%. Adjectives seemed to be the most difficult for students to comprehend and properly apply in context.

#### **(2) Abstractness and Concreteness of Words**

The abstractness and concreteness of words was another crucial factor which influenced vocabulary acquisition in this study. Words which were less abstract and more concrete were generally acquired more easily by the students as seen in both the translation-production post-test and the word comprehension in context post-test.

Moreover, it was found that adjectives and verbs were considered to be the most difficult word classes for the students to acquire.

### **(3) Number of Parts of Speech and Word Concepts**

Besides word class and word abstractness, the number of parts of speech and meanings a word had were considered to be two other influences. Concerning numbers of parts of speech, words which existed as only one part of speech were acquired more easily in both types of test. On the contrary, nouns, verbs, and adjectives were shown to be more difficult to acquire by the results of the post-test due to their greater abstractness and frequency of belonging to multiple parts of speech. Likewise, for number of word concepts, words which had only one concept were acquired at a slightly higher rate by the students. It should be noted that words with only one concept and which belonged to only one part of speech were easier to acquire incidentally than words with more than one concept and those belonging to several parts of speech.

### **(4) Word Length in Letters**

In terms of word length in letters, there was a clear finding that the meanings of words with seven to nine letters (moderate length) were acquired most readily at 79.78%, whereas they were comprehended at a rate of only 50.96% in regards to their usage in context. The longest length words (ten to twelve letters) were considered to be most difficult and were thus acquired the least on both tests: 61.10% for meaning gains and 40.66% for comprehension gains.

These four factors therefore were thus the major influences that affected vocabulary acquisition during the reading process. It can be concluded that verbs and adjectives respectively, were the hardest and least hard word classes for the students to acquire with adverbs of medial difficulty. Moreover, if the words in these classes were abstract of long length, and/or belonged to more than one of part of speech, then they were more difficult for the subjects to learn.

5.1.3 From the interpreted data obtained from the oral interview sessions, it was found that among the four vocabulary learning strategies (information sources, dictionary use, memorization and practice, and others), the use of information sources was the most

popular among the top ten most successful students, being employed at a rate of 25% by the top ten achievers. Specifically, the strategy of guessing from context to work out word meaning, which was one of the vocabulary strategies in this category, was the most frequently employed strategy by the top ten highest achievers, at a rate of 60%. This particular strategy was chosen by the students because it was one of the strategies, which was concrete and feasible to apply during the reading comprehension process.

5.1.4 In this study, it was found that besides guessing from context, the students also preferred using bilingual dictionaries (English to Thai) to look up word meanings for unknown items which they had already encountered three times. The students reported that the meanings of these words were difficult to guess from context and they supposed that they might appear on a test later, so using a bilingual dictionary was the quickest vocabulary learning strategy for them.

5.1.5 The successful students further mentioned that the frequency of occurrence of new words when reading influenced their vocabulary acquisition. The first to third occurrences alerted them to pay more attention to learning the word. The fifth to sixth encounters positively affected their ability to recognize the word forms and their meaning in context. The subjects also felt that they would probably acquire the meanings of words which occurred in a treatment at least six times (mean = 6.35), especially words with less abstract meanings and those belonged to only one part of speech.

## **5.2 Pedagogical Implications**

Since this study was carried out with a group of only thirty junior-high school students, it is difficult to generalize or draw the conclusion that providing word-frequency controlled readings for all Thai junior-high school students would have identical results. However, the results of the current study may provide some useful information for classroom teaching, and also for designing reading materials focused on promoting incidental vocabulary acquisition as a potential alternative method of teaching reading and vocabulary to Thai students. This section suggests the following pedagogical implications.



5.2.1 It was found that word meanings were gained to a greater extent than was word comprehension during the reading process, because students used the strategy of guessing from context. It is suggested that English teachers make use of word-frequency controlled readings to foster students' vocabulary size. The findings of this study showed that students quickly acquired word meanings after reading, whereas word comprehension may require elaboration through direct teaching instruction to be acquired properly. After the reading treatment in this study, the students gained a certain level of word comprehension knowledge as a result of frequent exposure to the words. Hence, teachers need to be aware that frequent exposure to target words during the reading comprehension process is necessary for the development of the student's vocabulary knowledge. Furthermore, teachers should encourage students to employ a variety of vocabulary learning strategies, rather than primarily relying on guessing from context when they encounter words with meanings that cannot easily be inferred from contextual information.

5.2.2 Taking word classes into account, it was noted that verbs seemed to be the most difficult groups of words to learn with adjectives and adverbs somewhat easier. At some levels of processing, the way in which information is stored and accessed in the brain may differ for the different types of words. In the typical EFL classroom in Thailand and elsewhere, the main focus is on the direct teaching of nouns. Lack of instruction about verbs vocabulary instruction can cause a failure in English communication because verbs are expressions of action and process, and without them students cannot construct meaningful sentences. Consequently, it is teachers' responsibility to teach verbs along with other word classes, so that students will be able to communicate in English more effectively.

It is fair to say that teachers should be expected to teach students not only what to learn, but also how to learn. For example, when practicing the guessing of word meaning from context, teachers should warn learners not to rely on word morphology too much and not to attempt to comprehend sentences on the basis of individual words, as some of these words may appear to be familiar even though they are not. Instead, meanings should be discovered from a wider context.

5.2.3 The subjects investigated felt that the English learning environment is changing for the better, and that more English reading materials are becoming available. They were also well aware of the importance of incidental vocabulary learning and the associated learning strategies. These positive feelings towards incidental vocabulary learning are helpful for learners' vocabulary development. Teachers should be encouraged to help students to expand their conscious involvement in the learning process. Teachers should be sure to choose teaching materials, teaching methods, and techniques that match learners' interests, as well as promoting their learning proficiency. Therefore, incidental vocabulary learning can be a great supplement to intentional learning. Learners should be aware that opportunities for incidental vocabulary learning can occur in places other than in textbooks. The employment of incidental vocabulary learning strategies is complex, and it is necessary for teachers to give appropriate guidance on incidental vocabulary learning. In addition, teachers should focus on helping learners to develop strategies to better comprehend and learn vocabulary incidentally, and the final goal of these strategies should be to help the learners continue to learn new words and increase their vocabulary size.

### **5.3 Recommendations for Further Research**

The following suggestions for further research aim to compensate for the limitations of this study and to achieve a better understanding of the effect of word-frequency controlled reading on incidental vocabulary acquisition.

In order to develop a thorough understanding of the potential that word-frequency controlled readings have to aid incidental vocabulary learning, to confirm findings, and to produce new findings, some recommendations for further studies are made.

5.3.1 This study was intended to examine the effect of word-frequency controlled reading on the incidental vocabulary acquisition of Thai grade 9 EFL students, by having them undertake ten reading comprehension activities. Since the subjects were at about the same level of English proficiency, they demonstrated similar vocabulary learning strategies, such as, guessing from context and using a bilingual dictionary, which were the most frequently employed strategies. Subjects with a different level of reading

proficiency might produce different findings in the areas of word knowledge gained and vocabulary learning strategies used. Thus, it would be useful to conduct similar research using a larger number of subjects, with various levels of reading proficiency, in order to investigate whether students with different levels of reading proficiency show different gains in the knowledge of word meanings and/or in word comprehension. If further studies involve more subjects with different levels of proficiency, it will be possible to examine whether or not word-frequency controlled reading has different degrees of influence on learners with different backgrounds. In that way, more generalizable results could be obtained.

5.3.2 The results of this study suggest that a word-frequency of ten exposures has a positive effect on the learning of word meanings, though there nevertheless remain some more difficult dimensions, like word comprehension. Further investigation needs to provide more in-depth information on the role of exposure in vocabulary learning which influences the role of word comprehension in context. Such research needs to engage ESL/EFL readers in various tasks to provide a more reliable picture of the relationship between both factors.

5.3.3 In addition to theory development, future studies need to concentrate on three major areas. The first is the notion that the selection of target words should be carefully controlled, using only vocabulary of the same function. Second, further research may need to investigate whether some word comprehension can occur and can be replicated. Finally, considering the results of this investigation, future studies should further examine the production of new vocabulary knowledge in writing tasks or speaking situations. In addition, it is worth investigating the word gains from reading exposure can also be measured by writing and speaking tests. EFL classroom instructors should provide reading materials which can aid in promoting lexical gains be used to foster learners' vocabulary knowledge, especially their meanings.

5.3.4 The information on vocabulary strategies which the subjects employed was obtained purely from oral interviews. Therefore, other collection methods such as questionnaires and observation should be included in further investigations to determine if the results are the same.

5.3.5 Since this study aimed at examining the vocabulary learning strategies employed by the ten most successful students, the findings may not be able to describe the students with low scores. Further investigation should consider how unsuccessful students employ vocabulary learning strategies in the reading process and compare those strategies to the highest achievers in order to gain a better understanding of the two groups of learners.

5.3.6 For a better understanding of the usage of vocabulary learning strategies by Thai learners, further experimental research should be conducted. It should observe how effective Thai students' vocabulary learning strategies are for reading comprehension, and their influence on incidental word learning.

5.3.7 Longitudinal studies need to be conducted. The whole experiment took place within the regular school curriculum for about a two-month period only. A further longitudinal study would be able to identify the influence of incidental vocabulary acquisition on students' word retention over a longer period of time.

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## Appendix A

### Vocabulary Checklist (Thai Version)

**คำชี้แจง:** จงเติมเครื่องหมาย (✓) ในช่องที่อธิบายระดับความรู้คำศัพท์ของนักเรียนในแต่ละคำได้ตรงตามความเป็นจริงที่สุด โปรดตอบตามความเป็นจริง และเลือกเติมเครื่องหมาย(✓) เพียงช่องเดียวเท่านั้น หากเลือกช่อง “*รู้ความหมาย/ ใช้ในประโยคได้*” โปรดเขียนความหมายของคำลงในช่องว่าง

คำศัพท์	ไม่รู้จัก	เคยได้ยิน/ เคยเห็น	รู้ความหมาย/ ใช้ในประโยคได้
1. achievement			
2. across			
3. among			
4. affect			
5. along			
6. against			
7. ancient			
8. beyond			
9. concentrate			
10. consider			
11. complex			
12. contribute			
13. context			
14. during			
15. desert			
16. discovery			
17. despite			
18. encourage			
19. establish			
20. entire			
21. eventually			

คำศัพท์	ไม่รู้จัก	เคยได้ยิน/ เคยเห็น	รู้ความหมาย/ ใช้ใน ประโยคได้
22. expert			
23. exactly			
24. exit			
25. familiar			
26. fascinate			
27. frequency			
28. further			
29. gather			
30. gate			
31. generally			
32. however			
33. image			
34. indicate			
35. involve			
36. major			
37. occasionally			
38. occur			
39. obvious			
40. option			
41. particular			
42. probably			
43. process			
44. provide			
45. quality			
46. rarely			
47. reveal			
48. settle			

คำศัพท์	ไม่รู้จัก	เคยได้ยิน/ เคยเห็น	รู้ความหมาย/ ใช้ในประโยคได้
49. several			
50. spontaneous			
51. similar			
52. tend			
53. therefore			
54. through			
55. toward			
56. trouble			
57. various			
58. unique			
59. upon			
60. usually			

## Appendix B

### Vocabulary Checklist (English Version)

**Directions:** For each word, place a check mark (√) in one column that describes your knowledge of the word. Please be honest and put only one checkmark in each column. If you choose “I can define/ use it”, please write a meaning of the word in the column.

Word	I don't know	I've heard/ seen it	I can define/ use it
1. achievement			
2. across			
3. among			
4. affect			
5. along			
6. against			
7. ancient			
8. beyond			
9. concentrate			
10. consider			
11. complex			
12. contribute			
13. context			
14. during			
15. desert			
16. discovery			
17. despite			
18. encourage			
19. establish			
20. entire			
21. eventually			



<b>Word</b>	<b>I don't know</b>	<b>I've heard/ seen it</b>	<b>I can define/ use it</b>
22. expert			
23. exactly			
24. exit			
25. familiar			
26. fascinate			
27. frequency			
28. further			
29. gather			
30. gate			
31. generally			
32. however			
33. image			
34. indicate			
35. involve			
36. major			
37. occasionally			
38. occur			
39. obvious			
40. option			
41. particular			
42. probably			
43. process			
44. provide			
45. quality			
46. rarely			
47. reveal			
48. settle			

<b>Word</b>	<b>I don't know</b>	<b>I've heard/ seen it</b>	<b>I can define/ use it</b>
49. several			
50. spontaneous			
51. similar			
52. tend			
53. therefore			
54. through			
55. toward			
56. trouble			
57. various			
58. unique			
59. upon			
60. usually			

**Appendix C**  
**Selecting of the 30 Appropriate Target Words**

Word	Percentage (%)		
	I don't know	I've heard/ seen it	I can define/ use it
1. <i>achievement</i>	73.47	26.53	0
2. <i>affect</i>	14.29	83.68	0
3. <i>concentrate</i>	61.23	38.78	0
4. <i>consider</i>	44.90	55.11	0
5. <i>complex</i>	24.49	12.25	0
6. <i>contribute</i>	87.76	12.25	0
7. <i>despite</i>	73.47	26.53	0
8. <i>encourage</i>	83.68	16.33	0
9. <i>establish</i>	97.96	2.04	0
10. <i>entire</i>	61.23	34.70	0
11. <i>eventually</i>	81.64	18.37	0
12. <i>fascinate</i>	26.53	73.47	0
13. <i>gather</i>	55.11	44.90	0
14. <i>familiar</i>	48.98	51.02	0
15. <i>however</i>	53.07	46.94	0
16. <i>indicate</i>	44.90	55.11	0
17. <i>involve</i>	79.60	20.21	0
18. <i>occur</i>	85.72	14.29	0
19. <i>obvious</i>	81.64	18.37	0
20. <i>particular</i>	71.43	28.58	0
21. <i>probably</i>	53.07	46.04	0
22. <i>process</i>	28.58	71.43	0
23. <i>provide</i>	26.53	73.47	0
24. <i>reveal</i>	46.98	51.02	0
25. <i>settle</i>	26.53	73.47	0

Word	Percentage (%)		
	I don't know	I've heard/ seen it	I can define/ use it
26. <i>spontaneous</i>	100	0	0
27. <i>tend</i>	44.90	55.11	0
28. <i>therefore</i>	83.68	16.33	0
29. <i>various</i>	87.76	12.25	0
30. <i>unique</i>	71.43	28.58	0
31. usually	0.00	53.07	46.94
32. expert	24.49	71.43	4.09
33. frequently	83.68	14.29	2.04
34. exit	0.00	73.47	26.53
35. image	10.21	57.15	32.66
36. rarely	83.68	14.29	2.04
37. similar	24.49	71.43	4.09
38. major	53.07	44.90	2.041
39. discovery	10.21	87.76	2.04
40. context	77.56	71.43	4.09
41. across	6.13	57.15	36.74
42. trouble	53.07	20.41	2.04
43. ancient	81.64	16.33	4.09
44. further	38.78	55.11	6.13
45. desert	40.82	51.02	8.17
46. generally	59.19	38.78	2.04
47. quality	18.37	77.56	4.09
48. exactly	20.41	57.15	32.66
49. option	63.27	30.62	6.13
50. against	10.21	71.43	16.33
51. along	20.41	69.39	10.21
52. occasionally	10.21	71.43	18.37
53. several	69.39	24.49	2.04
54. upon	18.37	77.56	4.09
55. during	20.41	77.56	2.04

<b>Word</b>	<b>Percentage (%)</b>		
	<b>I don't know</b>	<b>I've heard/ seen it</b>	<b>I can define/ use it</b>
56. toward	81.64	16.33	2.04
57. through	6.13	57.15	32.66
58. beyond	20.41	77.56	2.04
59. among	53.07	44.90	2.04
60. gate	12.25	71.43	16.33

## Appendix D: Target Words

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### A List of Thirty Selected Target Words

1. achievement (n)	16. indicate (v.)
2. affect (v)	17. involve (v.)
3. concentrate (v)	18. occur (v.)
4. consider (v)	19. obvious (adj.)
5. complex (adj.)	20. particular (adj.)
6. contribute (v.)	21. probably (adv.)
7. despite (prep.)	22. process (v.)
8. encourage (v.)	23. provide (v.)
9. establish (v.)	24. reveal (v.)
10. entire (adj.)	25. settle (v.)
11. eventually (adv.)	26. spontaneous (adj.)
12. fascinate (v.)	27. tend (v.)
13. gather (v.)	28. therefore (adv.)
14. familiar (adj.)	29. various (adj.)
15. however (adv.)	30. unique(adj.)

### Summary of Target Words

16 verbs

8 adjectives

4 adverbs

1 noun

1 preposition

## **APPENDIX E**

### **The Ten Reading Materials**

Name \_\_\_\_\_

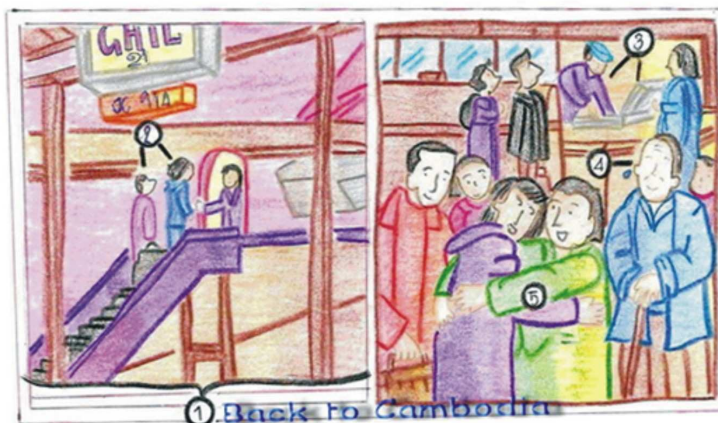
No. \_\_\_\_\_

Date \_\_\_\_\_

Score \_\_\_\_\_

# Chapter 1

## Back to Cambodia



### 1. Key Vocabulary

a airport   b boarding   c customs   d crying   e hugging

Complete each sentence with a word from the picture.

- The people on the left are walking up the stairs and \_\_\_\_\_ the plane.
- After everyone boarded the plane, it left the \_\_\_\_\_.
- At \_\_\_\_\_, workers look through suitcases, they don't want people to bring bad things into the country.
- The women are \_\_\_\_\_ for the first time in many years. They put their arms around each other to say hello.
- The man is \_\_\_\_\_. There are tears on his face.

### 2. Before you read



Look at the title and picture. What country is the couple going to?  
Read the story to check your answer.

Country: \_\_\_\_\_



Adapted from Billings et al., 2002: 7-10.



Nol Soth stood in front of his restaurant in San Francisco. The restaurant, called Lucky Moon, was very popular. Americans loved the unique Cambodian food served at Lucky Moon. Some customers had to wait one hour before they could eat. Nol just didn't have enough tables for everyone.

"We need to consider what to do", Nol told his wife Narum. It is obvious that if we stay here in San Francisco, we will need to make our restaurant bigger. Therefore, we will need a better kitchen and we'll need to provide more tables. Otherwise, people will probably stop eating here.

"Yes," agreed Narum. "I think it's time we made the restaurant bigger."

"Or we could leave San Francisco and return to Cambodia," said Nol spontaneously.

"What?" asked Narum. "Why go back to Cambodia?"

"We came to America many years ago, but I still think of Cambodia as my home," Nol told her. "I would eventually like to go back. I would like to contribute towards helping Phnom Penh become a strong city again."



"But what would we do there," asked Narum, "and what would making such a big chance involve?"

"If we can establish a restaurant in America, we can do the same thing in Cambodia," said Nol.

Over the next few weeks, Narum and Nol talked a lot about what to do. Narum revealed that she missed Cambodia too. She wanted to see old friends and family who still lived there.

"It won't be easy to start an entire new business again. We will have to concentrate very hard on forming a good plan. It will be a complex process," Narum told Nol, "however, I would like to try."

Nine months later, after having tended to all their affairs in America, Nol and Narum went to the San Francisco International Airport to fly to Phnom Penh. Both of them cried as they were boarding the plane. They were happy to be going home, but they were scared about the future. Were they making a mistake? Were they too old to start over and settle down again? Would the people in Phnom Penh welcome them back?

*Adapted from Billings et al., 2002: 7-10.*





## Back to Cambodia

4. Narum wants to return to Cambodia because \_\_\_\_\_.
  - a. the Lucky Moon isn't popular
  - b. she doesn't like America
  - c. she misses her friends and family
5. Customers will wait an hour to get a table at the Lucky Moon. That shows the Lucky Moon \_\_\_\_\_.
  - a. has slow service
  - b. has good food
  - c. Is the only restaurant in the area



#### 4. Reading Skill: Scanning

Scan the ad below for the answer.

1. What is the phone number at the Lucky Moon? \_\_\_\_\_.
2. What are the dinner hours? \_\_\_\_\_.
3. Name two food items in the ad.
  - (1) \_\_\_\_\_
  - (2) \_\_\_\_\_



### The Lucky Moon

6633 Pacific Ave., San Francisco (415) 555-2244

*Excellent Cambodian Food*

Lunch buffet from 11:30 a.m. to 3:00 p.m. every day

Dinner served from 3:00 to 9:00 p.m. every day

**“The best Cambodian food in the city!”** Henrietta Freeman- The San Francisco Times

Lucky Moon Features traditional Cambodian food,  
for instance, curries, soups, noodle salads, and rice.



*Adapted from Billings et al., 2002: 7-10.*



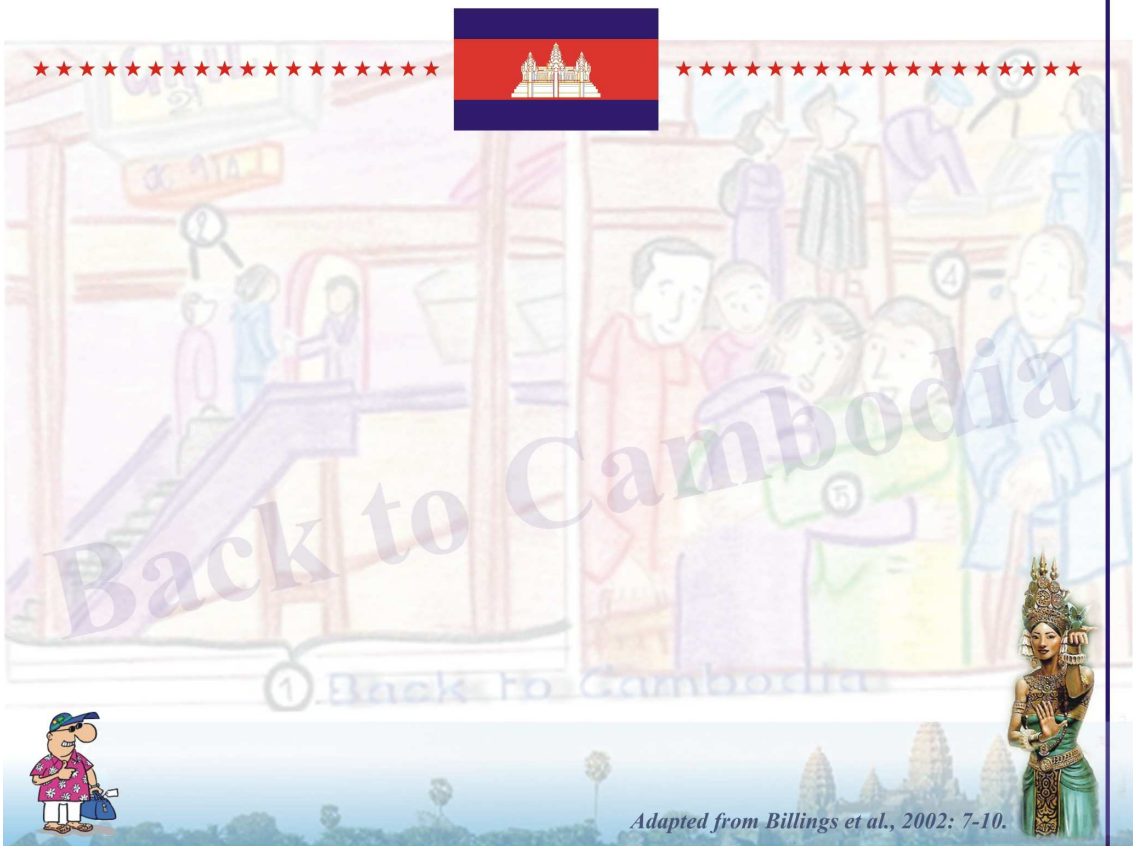
## 5. Vocabulary Review

## Back to Cambodia

Complete the sentences. Write the missing word.

1. airport   2. boarding   3. customs   4. crying   5. hugging

1. People coming from other countries must go through \_\_\_\_\_ to show what is in their suitcases.
2. People who are \_\_\_\_\_ put their arms around each other.
3. I took my friend to the \_\_\_\_\_. He was taking plane to Tokyo.
4. The sad woman said goodbye to her son. She was \_\_\_\_\_.
5. The passengers were \_\_\_\_\_ the plane at 11:30 p.m. The plane took off at 11:50 a.m.



Name \_\_\_\_\_

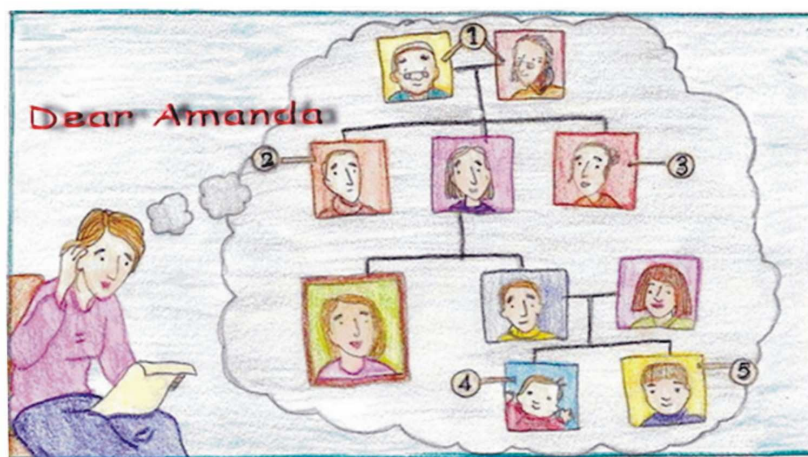
No. \_\_\_\_\_

Date \_\_\_\_\_

Score \_\_\_\_\_

## Chapter 2

## Dear Amanda



### 1. Key Vocabulary

Match the sentences to the items in the picture.

1. Your mother or father's parents are your grandparents. \_\_\_\_\_
2. Your mother or father's sister is your aunt. \_\_\_\_\_
3. Your mother or father's brother is your uncle. \_\_\_\_\_
4. Your brother or sister's daughter is your niece. \_\_\_\_\_
5. Your brother or sister's son is your nephew. \_\_\_\_\_



### 2. Before you read

Scan the story. There are two young women in the story.  
What university do they go to? Read the story to check your answer.

University: \_\_\_\_\_.



Adapted from Billings et al., 2002: 25-28.




## Dear Amanda

LuAnne Kinney sat in her apartment and waited for her roommate Sherry to return from class. When Sherry got home, LuAnne handed her a piece of paper.

“What’s this?” asked Sherry.

“You know I’m adopted,” said LuAnne. “Well, I found my birth mother, the woman who gave birth to me. This is a letter to her. I’ve been concentrating on writing it all day. However, I don’t know if it will sound good or not. Will you read it aloud so I can hear how it sounds?”

Sherry nodded and said “I’ll be happy to contribute any way I can, though I tend to be a slow reader.” She sat down on her bed, and began to read.

*Dear Amanda Perkins,*

Nineteen years ago, you gave birth to a baby girl at the North Side Hospital in Atlanta, Georgia. Two days later, a couple came and adopted your baby. That baby was me.

I don’t know what your life is like, but I will tell you about my life.

A wonderful family adopted me, and we settled down in Virginia Beach, Virginia, which is where I grew up. My parents are great. I always knew I was adopted. I often thought about you. Do you and I look the same? Do we act the same? I want to know about my birth father, grandparents, aunts, and uncles. Do I have brothers and sisters? spontaneous after nineteen years, but I would like to talk to you. Will you consider writing me back?

I started looking for you last year when I was a senior in high school. Now I go to James Madison University. I hope this letter makes you happy. I know it may be a little

LuAnne Kinney  
Your birth daughter,

“What do you think?” LuAnne asked.

“I think it’s terrific,” encouraged Sherry. “It’s obvious that you put a lot of time into the process of writing this particular letter, and it’s not overly complex. You should probably mail it right away.”

LuAnne thanked her for providing feedback and mailed the letter. Then she tried to forget about it,

but at various times every day she ran to the mailbox to look for a letter from her birth mother.

At last LuAnne opened her mailbox and saw a letter from her birth mother. She took the letter back to her room.

“Here,” she said to Sherry. “I’m too nervous to open it. Can you read it to me?”



*Adapted from Billings et al., 2002: 25-28.*



## Dear Amanda

“Okay,” said Sherry.

Dear LuAnne,

Your letter was great! I was looking for you, too! It was fascinating to hear about what has occurred in your life!”

After you were born, I never stopped thinking about you, despite our separation. Every year on your birthday, I hope you are having a good life. It sounds like you are. I'm so happy you grew up in a good family and are now in college. I am sure your parents are wonderful and love you.

I'm proud to reveal that you have a wonderful older brother named Mark. One day I hope you can meet him and his family. Mark and his wife Karen have a son and a daughter. They are your nephew and niece!

I want to talk to you, too. Therefore, I hope that you'll write me again soon. Perhaps eventually we can gather the entire family together. Please send me your telephone number and indicate some good times for me to call.

With love,

Amanda Perkins

When Sherry finished reading the letter, LuAnne was crying, because of how deeply it had affected her. She whispered, “What a unique opportunity to finally become familiar with the family I never knew. Thanks Sherry. And thank you, Amanda.”

“Congratulations, you have established contact with your birth mother after all these years” said Sherry. “I'm glad that I could be involved; what a wonderful achievement!”



### 3. Comprehension

*True or false? Fill in the correct bubble.*

- |  | True                     | False                    |
|--|--------------------------|--------------------------|
| 1. A young woman looks for and finds her birth mother.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. LuAnne is a freshman at the University of Virginia.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. LuAnne was nervous about writing to her birth mother. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Amanda Perkins wants to learn more about LuAnne.      | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Amanda Perkins did not give up her son for adoption.  | <input type="checkbox"/> | <input type="checkbox"/> |





## Dear Amanda



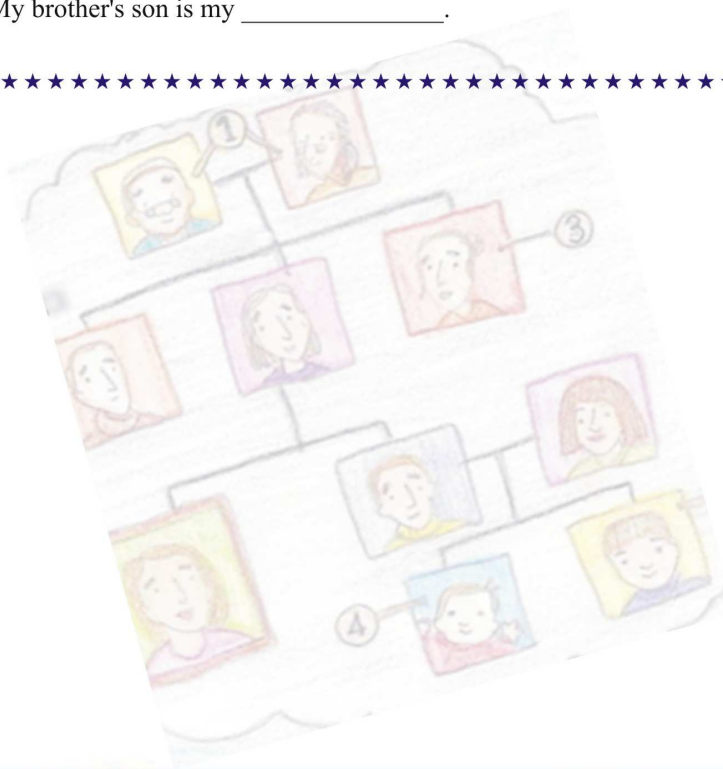
### 4. Vocabulary Review

Complete the sentence. Write the missing word.

aunt    grandparents    nephew    niece    uncle

1. My father's sister is my \_\_\_\_\_.
2. My \_\_\_\_\_ is my mother's brother.
3. My father's mother and father are my \_\_\_\_\_.
4. My sister's daughter is my \_\_\_\_\_.
5. My brother's son is my \_\_\_\_\_.

\*\*\*\*\*





Name \_\_\_\_\_ No. \_\_\_\_\_ Date \_\_\_\_\_ Score \_\_\_\_\_

# Chapter 3

# Home Sweet Home



### 1. Key Vocabulary

- a janitor   b landscaper   c hairdresser   d bus driver   e carpenter

Complete each sentence with a word from the picture.

1. A \_\_\_\_\_ drives a bus.
2. A \_\_\_\_\_ cuts the grass and waters the flowers.
3. A \_\_\_\_\_ cuts and styles hair.
4. A \_\_\_\_\_ cleans buildings and takes out the garbage.
5. A \_\_\_\_\_ use a hammer and nails to build with wood.

### 2. Before you read

Scan the story to complete the sentence below. Read the story to check your answer.

Charles is a \_\_\_\_\_.

- a. hairdresser   b. bus driver   c. landscaper



Adapted from Billings et al., 2002: 43-46.





## Home Sweet Home

Charles and Kate Perry loved living in Hawaii. They loved the beautiful, warm ocean. They loved walking on the beach and watching dolphins play in the water. But they didn't love how expensive Hawaii was.

When the Perry first moved to Hawaii, it soon occurred to them that money would be a problem.

"Everything here is so expensive," Charles said. "It will be a real achievement if we can find a way to stay."

However, Charles and Kate were lucky. After a month of concentrating all their time on job hunting, Charles got a job as a bus driver, and Kate became a successful hairdresser. Many people came to her shop for haircuts. These were encouraging successes, and they eventually decided to settle down for good. They bought a house on Oahu.

"Not everyone is as lucky as we are," Kate told Charles. "I want to help people who can't buy their own house. Consider how positively that could affect the community as well."

Charles agreed, so he and Kate made a spontaneous decision and started to volunteer for Habitat for Humanity. This particular organization helps build and provide homes for families who otherwise would probably never be able to buy one.

"We build people a house and let them pay us back a little at a time," the director told Charles and Kate. "But they have to help build the entire house. Therefore, we require each family to put in 500 hours of work. And, as I'm sure it's obvious, all our workers are volunteers," he indicated. "No one gets paid to help us."

"We gathered that," said Charles, "and we would love to get involved. However, building a home is a very complex process, and Kate and I certainly aren't construction workers," he revealed.

he director told them that experienced construction workers would be there to help them and tend to their questions and concerns. On the next Saturday morning, Charles and Kate went to a building site. Other volunteers were ready to begin building the house. All weekend, Kate and Charles worked with the other volunteers. The carpenters knew how to build houses. The landscapers made the grass and gardens beautiful. Others were businesspeople, teachers, or janitors who were good cleaners.

People with construction experience told the volunteers what to do, so that everyone helped, despite their lack of experience. Charles spent most of the day cutting wood. Kate spent her time hammering nails.



*Adapted from Billings et al., 2002: 43-46.*





## Home Sweet Home

After that first weekend, Charles and Kate contributed a lot of their free time volunteering for Habitat for Humanity. They learned to do more and more things, and became familiar with various aspects of home construction. They also met many unique people, and even established some lifelong friendships.

“Everyone is so nice,” Kate said. “I like spending time with people who want to help other people.”

The best part was working with the new homeowners. Kate and Charles were fascinated with how hard these families worked. Husbands, wives, and children all helped build their new houses. As the houses were going up, the families became more and more excited.

“It’s wonderful,” Charles said. “We’re making people’s dreams come true.”



### 3. Comprehension

*Complete the sentences. Fill in the correct bubble.*

- Kate and Charles move to Hawaii, become successful, and \_\_\_\_\_.  
a. help build home      b. go to the beach      c. start a business
- Charles and Kate are afraid Hawaii is too \_\_\_\_\_.  
a. beautiful      b. expensive      c. hot
- Habitat for Humanity builds \_\_\_\_\_.  
a. roads      b. hotels      c. homes
- Kate and Charles learn a lot about \_\_\_\_\_.  
a. building      b. teachers      c. hair dressing
- Habitat for Humanity believes everyone who wants one of their houses should \_\_\_\_\_.  
a. help build it      b. go to Hawaii      c. be a janitor

### 4. Reading Skill : Making Inferences

Making inferences helps you understand more about a story. To make an inference, use what is written in a story to guess what is not written.



*Adapted from Billings et al., 2002: 43-46.*





# Home Sweet Home

Fill in the bubble with the correct inference.

1. Charles and Kate were lucky. Soon Charles got a job as a bus driver, and Kate was a successful hairdresser.

**Inference :** It's \_\_\_\_\_.

- a. easy to get good jobs in Hawaii
- b. hard to get good jobs in Hawaii

2. “We build them a house and let them pay us back a little at a time,” said the director. “But they have to help build the house. Each family has to put in 500 hours of work.”

**Inference :** Habitat for Humanity \_\_\_\_\_.

- a. gives people free house
- b. helps people build their houses

3. All weekend, Charles and Kate worked with the other volunteers. Some were carpenters and landscapers. Others were businesspeople, teacher, or janitors who were good cleaners.

**Inference :** Habitat for Humanity volunteers \_\_\_\_\_.

- a. don't need construction experience
- b. Must have construction experience





## Chapter 4

## McDonald's



### 1. Pre-reading activity

1. Do you like to eat McDonald's food?  
\_\_\_\_\_.
2. Why do you think so many people like McDonald's?  
\_\_\_\_\_.
3. Where is your nearest McDonald's?  
\_\_\_\_\_.



### 2. New Words

- own ▶ I always go sailing because I own a boat.
- counter ▶ If you want to pay for that dress, take it to the counter.
- waiter ▶ Waiter, can you please bring me a glass of water?
- washing- up ▶ Let's go to a restaurant so we don't have to do the washing-up afterwards.
- hamburger ▶ Children like to eat hamburgers because they taste good.
- fries ▶ To make fries, chop potatoes into long, thin pieces and cook them in hot oil.



Adapted from English Reading & Writing Course Book, 2005: 61-65.



There were two McDonalds Mac and Dick and they were brothers. In 1948, they owned a restaurant in California. No one could have dreamed how they would eventually affect the restaurant business. They liked being involved in the restaurant business; however, they got tired of the customers ordering so many different things to eat. This forced them to contribute more time and effort to the business than they would have liked. It occurred to them to concentrate on making some spontaneous changes, so that running the restaurant would be less complex.



'If we provided customers a smaller menu, we could make some of the food before they come, and they wouldn't have to wait so long for their meals,' revealed one of the brothers. The other brother agreed and added, 'And if we made the customers come to the counter, we wouldn't need any waiters or waitresses to gather their orders and tend to them. We could also use plastic plates, and therefore eliminate the washing-up process.'

Despite the fact that these were unique ideas at the time, the McDonald brothers used them, and the customers were very pleased. They got their meals very quickly in less than a minute and they paid only 15 cents for hamburgers and 10 cents for fries. The first McDonald's restaurant had no seats for customers to sit on. This meant that people had to take their food away, and that no one had to clean up any tables.

Then a man called Ray Kroc came to the brothers and indicated that he wanted to buy their business. He was fascinated by their achievements, and felt that he could make the business even bigger. They settled on a selling price of \$27 million for the entire business. After that, people paid Ray Kroc to open their own restaurants using the McDonald's name and menu. Before long, there were McDonald's restaurants all over the United States, and nowadays, they are established all over the world even in China and Russia. The success of McDonald's encouraged many other people to start similar restaurants, but McDonald's is still the most popular. Most people probably consider McDonald's to be the most famous and familiar restaurant in the world.



The most successful McDonald's business is in Hong Kong. The Hong Kong McDonald's sells more hamburgers every day than any other McDonald's anywhere else in the world. McDonald's restaurants are so successful because children in particular love going to them. It's obvious that they not only like the food, but that they like the various toys and games they can get at McDonald's as well.





### 3. Main Idea

Circle the correct answer.  
The story is about ...

1. a successful restaurant.
2. how customers got cheaper meals.
3. how to start your own restaurant.
4. where to find your nearest McDonald's.
5. how McDonald's keeps children happy.



### 4. Word Usage

1. Complete these sentences using words from the box.

wait      order      plastic      quickly      added

- a. I'm hungry. I think I'll \_\_\_\_\_ now.
  - b. Customers are happy when they get their meals \_\_\_\_\_.
  - c. Please \_\_\_\_\_ for me here.
  - d. He told that she had the job and then \_\_\_\_\_ that she had to work hard.
  - e. \_\_\_\_\_ plate never break.
2. Match the phrases in A to the phrases in B to make sentences.

★  
**A**

1. If you own something
2. When people agree on something
3. A restaurant is
4. Counters are found in
5. You eat food from

★  
**B**

- a. they think the same way about it.
- b. a plate.
- c. shops not houses.
- d. a place to eat.
- e. It belongs to you.

3. Name food that is made out of potatoes.

\_\_\_\_\_.





4. Find these words and phrases in the story and choose the right word for each meaning.

brother

customer

got tired of

seats

- did not like something any longer= \_\_\_\_\_.
- chairs= \_\_\_\_\_.
- men or boys with the same father and mother= \_\_\_\_\_.
- People who buy something in a shop or restaurant= \_\_\_\_\_.



#### 5. Reading Comprehension

- When did the first McDonald's restaurant open?  
\_\_\_\_\_.
- Why did the McDonald brothers want the customers to come to the counter?  
\_\_\_\_\_.
- How much did the first hamburgers cost?  
\_\_\_\_\_.
- Who bought the McDonald's business?  
\_\_\_\_\_.
- Where is the most successful McDonald's?  
\_\_\_\_\_.
- Name four countries where you can find McDonald's restaurant?  
\_\_\_\_\_.
- Who does the word 'they' refer to in line 3?  
\_\_\_\_\_.



Adapted from English Reading & Writing Course Book, 2005: 61-65.





6. Complete the following sentences. Use the information from the passage

- a. The McDonald brothers did not like \_\_\_\_\_.
- b. They used plastic plates because \_\_\_\_\_.
- c. There were no seats in the restaurant so that \_\_\_\_\_.
- d. Ray Kroc paid the McDonald brothers \_\_\_\_\_.
- e. The Hong Kong McDonald's is successful because it sells \_\_\_\_\_.



*Adapted from English Reading & Writing Course Book, 2005: 61-65.*

 Name _____	No. _____	Date _____	 Score _____
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## Chapter 5

## Golfing Genius



### 1. Before Reading

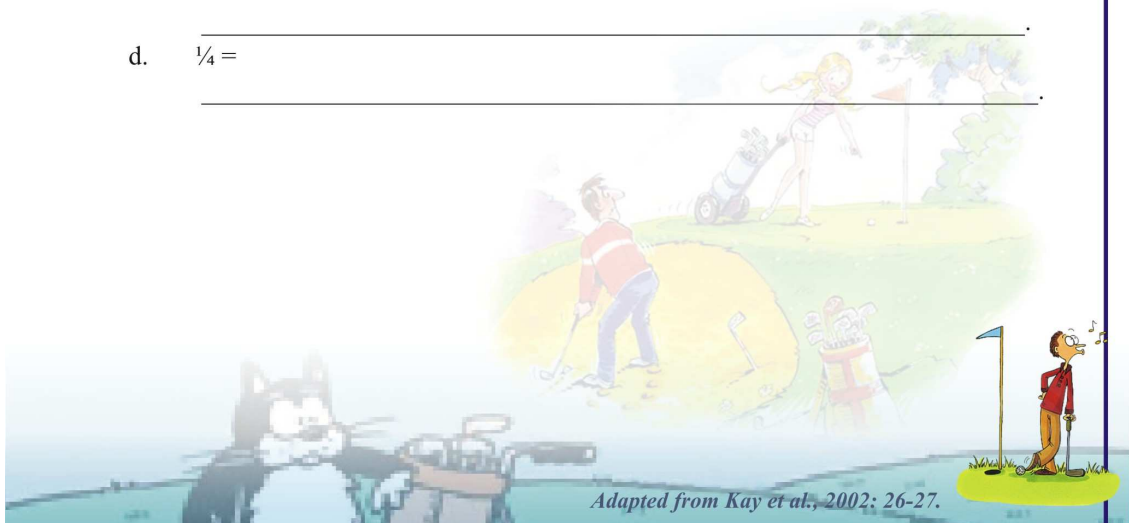


Who is Tiger Woods? Find at least three facts about him on Internet

1. \_\_\_\_\_.
2. \_\_\_\_\_.
3. \_\_\_\_\_.

The following numbers come out of a short article about Tiger Woods. Write out the numbers in their full form and then use them to complete the text.

- a. 30/12/75 = 30th December 1975
- b. 1st = \_\_\_\_\_.
- c. 16 = \_\_\_\_\_.
- d.  $\frac{1}{4}$  = \_\_\_\_\_.



Adapted from Kay et al., 2002: 26-27.



## Golfing Genius

e.  $08/04/01 =$

---

f.  $1 \frac{1}{2} =$

---

g.  $50,000,000 =$

---

h.  $1/8 =$

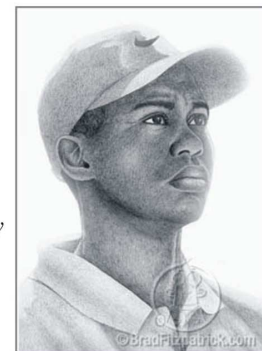
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*Tiger Woods was born on (1) 30th December, 1975, in California, USA, of mixed heritage: he describes himself as a (2) \_\_\_\_\_ black, a quarter Thai, a quarter Chinese, an eighth white and an (3) \_\_\_\_\_ American Indian. His father, Earl Woods, indicated that he named his son Tiger after a friend who saved his life in the Vietnam War.*

*Golf is a complex game that requires both skill and an ability to concentrate. As a boy, it quickly became obvious that Tiger was fascinated with the game of golf. However, no one could have predicted how he would affect the sport. He was only nine months old when he started to play golf, and he played his first game at (4) \_\_\_\_\_ years old. His father was his first teacher, and contributed much time and effort to encourage Tiger to develop his unique skill.*

*At the age of eight, Tiger won his first tournament, despite being so young. He eventually went on to gather five more wins before he was (5) \_\_\_\_\_. On (6) \_\_\_\_\_, Tiger Woods made golfing history. He became the (7) \_\_\_\_\_ golfer to win all four majors the most important tournaments within the same year, and in the process revealed his talent to the entire world.*

*Tiger has helped to make golf more familiar to, and popular with, people of all ages and levels. Therefore, many more people have gotten involved with the sport. Most people agree that, because of his achievements, he is probably considered the greatest golfer of all time. Certainly, he has already established himself as one of the richest.*



*Adapted from Kay et al., 2002: 26-27.*



He now earns more than \$  
(8) \_\_\_\_\_ a year.

He has a \$100 million deal with Nike in particular, and also has deals with American Express, Buick, Rolex and Wheaties. These various sponsorships provide Tiger with the majority of his income. He has many financial advisors who tend his affairs and settle his sponsorship contracts for him.

What advice would he give prospective parents of golf champions? 'Don't force your kids into sports. It has to be fun.' This fact may not occur to some eager parents, but Tiger believes that having a spontaneous curiosity in a sport is essential for children to excel at it. The best advice he ever got? From his dad: 'Always be yourself.'



**2. Close Up**

- A. Write out the superlative forms for the following groups of adjectives
- B. Underline the superlative adjective which is form different way from the other three.

**Adjective**

**Superlative Forms**

e.g. old/ rich/ exciting/ great the oldest/ the richest/ the most exciting/ the greatest

- 1. valuable/ big/ hot/ thin \_\_\_\_\_
- 2. funny/ interesting/ sexy/ happy \_\_\_\_\_
- 3. Bad/ far/ good/ talented \_\_\_\_\_

c. Complete these questions with eight different superlative adjectives. Use the adjectives in the close up or your own ideas

- 1. Who is \_\_\_\_\_ sport person in the world?
- 2. What is \_\_\_\_\_ music group of all time?
- 3. What is \_\_\_\_\_ place you've ever visited?
- 4. Who is \_\_\_\_\_ person you know?
- 5. What is \_\_\_\_\_ possession you have?



	Name _____	No. _____	Date _____	Score _____	
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## Chapter 6

### What People Really Want for Their Birthday!



#### 1. Pre-reading activities

1. *When do we usually give presents?*  
\_\_\_\_\_
2. *What's the best present you've ever given?*  
\_\_\_\_\_
3. *What's the best present you've ever received?*  
\_\_\_\_\_
4. *Whom do you think is easier to select a present for, men or women? Why?*  
\_\_\_\_\_

### What People Really Want for Their Birthday!

*It was my birthday recently, and as usual I didn't get what I really wanted. My birthdays usually involve getting a bunch of flowers, a book, a box of chocolates and electronic gadgets. My family always asks me what I want, and I always tell them the same thing I want a surprise. So this year I got flowers, books, chocolates, and gadgets. For the rest of my entire life, I will probably continue to get these things on every other birthday. Does it occur to no one to make a spontaneous gift-buying decision for once?*



*Despite the fact that flowers are lovely, they hardly ever last for more than a week, and eventually you must throw them away. A real present is something you can keep. I always look for the unique diamond ring hidden in the flowers, but it's never there.*

*I consider books to be a waste of time, and I hate getting chocolates because I'm normally on a diet. Imagine how they would affect my figure!*

*I must reveal, however, that gadgets are the worst. Most women are not interested in gadgets. Men tend to buy gadgets for women because men are fascinated with gadgets. For my birthday, my husband*

*bought me a gadget that provides bubbles in my bath, like a Jacuzzi. Last year he got me one of those things that you settle on the back of your seat and it massages your*



*Adapted from Kay et al., 2002: 34-36.*



### What People Really Want for Their Birthday!

back. *What's he trying to tell me? That I deserve some little luxuries? I agree with that, but the little luxuries I like to gather are made of gold or silver.*

*But women are sensitive and intuitive, so it's obvious that they always know the right thing to buy. Right?*

*Wrong.*

*The big mistake that women make is that they usually buy clothes. They buy particular clothes because they like them and they want to encourage other people to wear the clothes they like. 'You always wear dark colours, and I want to help you establish a change, so I'm going to buy you a brightly coloured tie or a pair of Mickey Mouse socks that you can contribute to your wardrobe.'*

*This is not an achievement; rather, it is a big mistake. Men don't usually want brightly coloured ties or silly socks. Therefore, the word to remember when you're buying a present for a male is Gadgets. Men like anything digital or electronic, and the more complex the better. Like one of those watches that tells scuba divers the time in Atlantis. Men can concentrate for hours on the process of learning how a new gadget works, and on becoming familiar with its operation.*

*For his birthday, I gave my husband a small torch and a Swiss army knife with various tools, the same present that I once gave to a 12-year-old nephew. He was overjoyed.*

*It's very simple. As I've indicated, you can't go wrong if you always remember the 'G' word for men and the 'J' word for women and that's 'J' for jewellery, not 'J' for Jacuzzi.*



#### 2. Reading Comprehension

*Read the article about giving and receiving presents and answer the following questions.*

- Did a man or a woman write the article?  
\_\_\_\_\_.
- Does s/he think men are good at choosing a present?  
\_\_\_\_\_.
- Does s/he think women are good at choosing a presents  
\_\_\_\_\_.
- What do women and men really want for their birthday? Do you agree?  
\_\_\_\_\_.





## What People Really Want for Their Birthday!

Rearrange the words below to make six statements from the article.  
You have been given the first word.

- a) Books \_\_\_\_\_  
time of waste a are
- b) Most \_\_\_\_\_  
in are interested women gadgets not
- c) Women \_\_\_\_\_  
and sweet are sensitive
- d) Men \_\_\_\_\_  
anything like electronic digital or



### 3. Adverb of Frequency

Find these adverbs in the article and notice the use of them.. Put them in order starting with always and finishing with never.

normally sometimes hardly ever often occasionally usually rarely



### 4. Word Collocation

Match words from column A with words from column B to make phrases.



- a) a bunch of  
b) a box of  
c) a pair of  
d) a packet of  
e) a piece of  
f) a bottle of



1. Sock/ scissors/ jeans
2. cake/ furniture/ wood
3. cigarettes/ crisp/ biscuits
4. flowers/ grapes/ keys
5. wine/ perfume/ whisky
6. chocolates/ matches/ tissues



Adapted from Kay et al., 2002: 34-36.





**What People Really Want  
for Their Birthday!**



**5. Close Up**

**Verb with two objects:** *re-write the following sentences as the example. Check your answers in the article.*

Subject	Verb	Direct object	for/ to	Indirect object	Re-write
1. Men	buy	presents	for	women.	<i>Men buy women presents.</i>
2. My husband	bought	a present	for	me.	
3. He	got	one of those thing	for	me.	
4. I	gave	a small present	to	my husband.	



*Adapted from Kay et al., 2002: 34-36.*



 Name	No.	Date	Score
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## Chapter 7

## Mozart



### 1. Pre-reading activity

1. What kind of music do you like?  
\_\_\_\_\_
2. Can you read or write music?  
\_\_\_\_\_
3. Can you name a famous person who wrote music?  
\_\_\_\_\_



### 2. New Words

- composer ▶ Her teacher liked the song the girl composed very much and said she might be a famous composer one day.
- orchestra ▶ I like listening to music played by an orchestra.
- piano ▶ If I sing, will you play the piano for me?
- concert ▶ We went to a concert to hear a famous singer.
- violinist ▶ The violinist is not easy to play well. A good violinist must practice every day.
- instead ▶ I was tired so I did not go to the cinema. I went to bed early instead.
- proper ▶ This is not a proper computer- it's just a toy one.
- bury ▶ When the dog died, we buried him in the garden.



Adapted from English Reading & Writing Course Book, 2005: 47-49.



Mozart was one of the greatest composers who ever lived, and his musical achievements are legendary. He was born in Salzburg, Austria, in 1756. Even when he was very young, Mozart loved music. His father, who was the leader of an orchestra, was very happy that his son was so interested in music, and encouraged Mozart to concentrate on improving his skill. When Mozart was three years old, he learned to play the harpsichord, which is like a piano. Mozart began to compose music at the age of five, and eventually his father took him to play in front of the kings and queens of Europe. Playing in front of gathered royalty provided Mozart the opportunity to establish his reputation across the continent.

## Mozart



At one concert, one of the violinists was missing from the orchestra. In a spontaneous act, Mozart picked up a violin and got involved. He played the complex music without a mistake. Mozart's father, and the other players in the orchestra in particular, were surprised. Mozart had never been taught to play the violin! Mozart continued travelling around Europe with his father, who was his teacher in everything. He composed various pieces for the piano, the violin, and later for a full orchestra.



Mozart could write down a piece of music even if he had heard it only once, which indicated that he had a perfect memory for musical tones. One day, he went to hear a group of people singing in a big church in Rome. The song was very special. The church leader said people could sing the unique song only once a year, and only in his church. No one else was allowed to have the music. Mozart listened to the song. Although it was very difficult and long, Mozart went home and, though it was a long process, wrote down the entire piece from memory. The head of the church heard about this, and instead of being angry with Mozart, he gave him a prize, probably for having revealed such an incredible talent.

Despite his obvious talent, when Mozart grew up, people were not so interested in him. He settled for working as a teacher and pianist, but he did not tend to make much money. In 1791, at the age of 35, he died. He was so poor there was not enough money to give him a proper grave. Therefore, no one knows where his burial occurred. However, what he contributed to the world of music continued to fascinate people long after his death. His familiar style of music is considered very beautiful by the millions of people who have been affected by it.



Adapted from English Reading & Writing Course Book, 2005: 47-49.



## Mozart



### 3. Main Idea

Circle the correct answer.  
The story is about...

1. the beginning of the piano.
2. Mozart's piano.
3. a family of musicians.
4. a poor burial.
5. a wonderful Austrian composer.



### 4. Vocabulary

1. Complete these sentences using words from the text.

even      instead      composed      concert      harpsichord

- a. I won't give it to you \_\_\_\_\_ if you pay me money.
- b. Would you like to go to a \_\_\_\_\_?
- c. Have you ever \_\_\_\_\_ any music?
- d. I did not learn to play the piano. I learned the violin \_\_\_\_\_.
- e. A \_\_\_\_\_ is a very old kind of piano.

2. Match these words into opposite pairs.

happy	behind
in front of	continued
full	picked up
stopped	empty
put down	sad

3. Name an instrument you play across your shoulder.



Adapted from English Reading & Writing Course Book, 2005: 47-49.



## Mozart

4. Find these words in the story and choose the right words for the meanings below.


missing      travelling

leader      difficult



- a. head person = \_\_\_\_\_
- b. going from one place to another = \_\_\_\_\_
- c. not easy = \_\_\_\_\_
- d. not there = \_\_\_\_\_





Name	No.	Date	Score
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## Chapter8 The Eiffel Tower



### 1. Pre-reading activity

1. Find Paris on a map of French on internet. What countries are located near it?

\_\_\_\_\_.

2. What is the tallest building in your town or city?

\_\_\_\_\_.

3. Where do many visitors go in your town or city?

\_\_\_\_\_.



### 2. New Word

- |              |   |
|--------------|---|
| lift ▶       | If you go to the tenth floor, use the lift instead of the stairs.                                   |
| invest ▶     | Mr. Smith asked his friends to invest money in his company.   |
| view ▶       | The view from my window is beautiful. I can see the sea.  |
| apartment ▶  | We will be living in a much bigger apartment next year.   |
| experiment ▶ | Nobel was not allowed to do any more experiments in his laboratory because they were too dangerous. |
| twice ▶      | She has visited Paris twice- last year and this year.   |



Adapted from English Reading & Writing Course Book, 2005: 54-57.



### 3. Main Idea

Circle the correct answer.  
The story is about ...

1. tall buildings.
2. expositions.
3. expensive buildings.
4. new inventions.
5. a tower in Paris.



### 4. Word Usage

1. Find these words and phrases in the story and choose the right word for each meaning.

showed      invested      apartment      designed

- a. put money into = \_\_\_\_\_.
- b. let people see = \_\_\_\_\_.
- c. a place to live = \_\_\_\_\_.
- d. planned = \_\_\_\_\_.

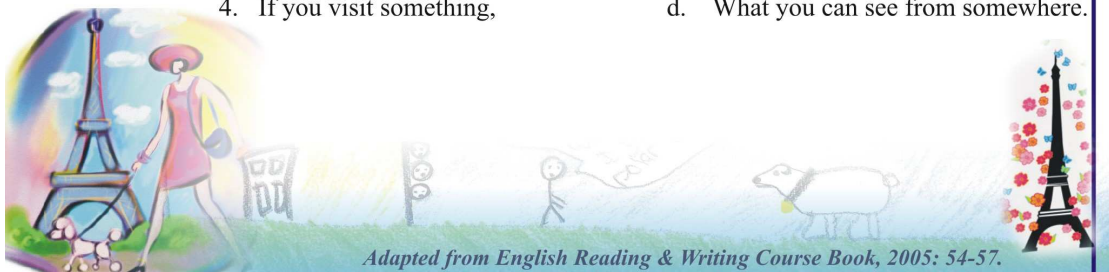
2. Match the phrases in A to the phrases in B to make sentences.



1. If someone is famous,
2. When you do something easily,
3. A view is
4. If you visit something,



- a. you do it without difficulty.
- b. they are well-known.
- c. you go to see it.
- d. What you can see from somewhere.



Adapted from English Reading & Writing Course Book, 2005: 54-57.



## The Eiffel Tower

Most people would probably consider the Eiffel Tower to be the most famous and familiar-looking building in Europe. This unique architectural achievement stands in the Champs de Mars, a park near the River Seine in Paris. It is 300 metres tall and was built by Alexandre Gustave Eiffel for the Paris Universal Exposition in 1889. Expositions or 'expos' as we now call them, are places where people can gather to see new inventions, spontaneous new kinds of art, and new kinds of food.



*Alexandre Gustave Eiffel*

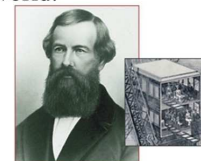
The construction process involved many steps. Because the tower was such a tall building, Eiffel wanted to make it easy for people to get to the top. He wanted to provide a lift, which was a very new invention at the time. Eiffel encouraged Elisha Otis to design a lift for the tower.

The French government indicated that it did not like the first design Otis showed it; therefore, it would not permit the lift installation to occur. Instead, the first visitors had to climb hundreds of stairs to the top. Later, Otis changed the design, and the government eventually allowed his company to contribute its lifts to the tower. They were the first proper lifts in the world.



*The Eiffel Tower's lift*

The Eiffel Tower cost over a million US dollars a lot of money, at that time in particular. People who invested in the building were worried they would not get their money back. However, in the first year they got their entire investment back, and much more besides. Thousands of tickets were

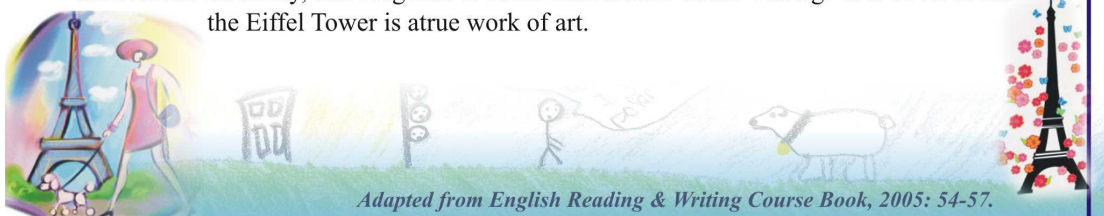


*Elisha Otis*

sold to people who wanted to go up and look at the view from the top.

The opening of the Eiffel Tower took place on the 10th of June, 1889. Eiffel himself settled in the tower where he had established his own apartment. Various kings and queens, fascinated by the tower, visited it during the opening and, of course, they visited Eiffel's apartment. Despite the fact that Eiffel designed the tower for people to visit, it also tended to be used for complex scientific experiments. Nowadays, the tower gets twice as many visitors as the other very famous building in Paris, the Louvre.

The writer Oscar Wilde revealed that he liked the Eiffel Tower because it was the only place in Paris from which he could not see the Eiffel Tower! Perhaps being on the tower also affected his creativity, allowing him to better concentrate on his writing. It is obvious that the Eiffel Tower is a true work of art.



*Adapted from English Reading & Writing Course Book, 2005: 54-57.*



## The Eiffel Tower

3. Find these words and phrases in the story and choose the right word for each meaning.

showed      invested      apartment      designed

- put money into = \_\_\_\_\_.
- let people see = \_\_\_\_\_.
- a place to live = \_\_\_\_\_.
- Planned = \_\_\_\_\_.



### 5. Reading Comprehension

- Where does the Eiffel Tower stand?  
\_\_\_\_\_.
- Who built it?  
\_\_\_\_\_.
- Who built the lift that went to the top of the Eiffel Tower?  
\_\_\_\_\_.
- What is an exposition?  
\_\_\_\_\_.
- How much did the Eiffel tower cost?  
\_\_\_\_\_.
- The tower is used by the tourists. What else was it used for?  
\_\_\_\_\_.
- What does the word 'they' refer to in line 13?  
\_\_\_\_\_.
- What does the word 'they' refer to in line 21?  
\_\_\_\_\_.



Adapted from English Reading & Writing Course Book, 2005: 54-57.



Name	No.	Date	Score
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## Chapter 9

### Speed Dating



#### 1. Before you read

Answer the following questions.

1. What do people usually do on a first date?

\_\_\_\_\_

2. Look at the title of this reading. What do you think it means?

\_\_\_\_\_

3. What are the most common ways to meet someone in your country?

\_\_\_\_\_



#### 2. Target Vocabulary

Match each word with the best meaning.

- |                       |  |
|-----------------------|--|
| 1. _____ community    | a. stress; a feeling of being pushed to do something |
| 2. _____ conventional | b. a group of people who live in the same place      |
| 3. _____ episode      | c. move smoothly, like water                         |
| 4. _____ exchange     | d. important factor                                  |
| 5. _____ flow         | e. one in a series of events                         |
| 6. _____ impression   | f. take part in an activity                          |
| 7. _____ key          | g. usual; normal; in use for a long time             |
| 8. _____ participate  | h. Swap  |



Adapted from English Reading & Writing Course Book, 2005: 66 - 6.









#### 4. Reading Comprehension

### Speed Dating

*Circle the letter of the best answer.*

- How is speed dating different from conventional dating?
  - The dates are very short.
  - It isn't usually possible to meet the person again.
  - The two people do many activities on one date.
  - The two people usually know each other quite well.
- What would be a suitable question for speed dating?
  - Where do you live?
  - What spots do you like?
  - What's your last name?
  - What's your phone number?
- How long might it take a person to complete ten speed dates?
  - ten minutes
  - one week
  - one evening
  - ten days
- Who is Deyo?
  - a man who has had many speed dates
  - the inventor of speed dating
  - a man who get married after speed dating
  - the president of a speed dating company
- Which event led to a rapid rise in speed dating in the US?
 

a. a national speed dating event	c. the marriage of Erik and Denise
b. a television broadcast	d. the publication of a book in Milwaukee



#### 5. Vocabulary Reinforcement

*A. Circle the letter of the word or phrase that best complete the sentence.*

- A saying in English says, "You don't get a second chance to make a first \_\_\_\_\_".
 

a. pressure	b. community	c. episode	d. impression
-------------	--------------	------------	---------------
- The police \_\_\_\_\_ the faces of the crowd, looking for the criminal.
 

a. scanned	b. fix	c. caught up with	d. looked like
------------	--------	-------------------	----------------
- Bangkok and Hat Yai both have very large Chinese \_\_\_\_\_.
 

a. conventions	b. episodes	c. communities	d. procedure
----------------	-------------	----------------	--------------
- The \_\_\_\_\_ to being a good piano player is lots of practice.
 

a. key	b. factor	c. reason	d. effect
--------	-----------	-----------	-----------





## Speed Dating

5. My wife is really interested in alternative films, but I'm interested in more \_\_\_\_\_ movies.
  - a. offensive
  - b. holy
  - c. pressure
  - d. conventional
6. There was a great \_\_\_\_\_ of that series on TV last night.
  - a. empire
  - b. episode
  - c. impression
  - d. tone
7. The river \_\_\_\_\_ down from the mountains into the sea.
  - a. flows
  - b. spills
  - c. leaks
  - d. floats
8. Many people tried to \_\_\_\_\_ the idea of buying Internet's names and then reselling them for more money.
  - a. profit
  - b. cash in on
  - c. make a fortune
  - d. move on

*B. Complete the passage with items from the box. One item is extra.*

### *What do you think?\**

cash in on    exchange    impression    move on    participate    one another

Speed dating is a new way for single people to meet each other without the (1) \_\_\_\_\_ of going on a lot of dates. At a speed-dating party, a person can (2) \_\_\_\_\_ in many short dates on the same evening. Couples only talk to each other long enough to get a(n) (3) \_\_\_\_\_ of (4) \_\_\_\_\_ before they (5) \_\_\_\_\_ to the next date. The couples do not (6) \_\_\_\_\_ any personal information during these dates, but if both want to see each other again, the speed-dating company will put them in contact with each other.

\*\*\*\*\*



*Adapted from English Reading & Writing Course Book, 2005: 66 - 6.*



	Name	No.	Date	Score
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## Chapter 10 Great Love Affairs

1. Look at the couples in the article and decide what you think are the correct answer to these questions.
- Who waited too long before asking his lover to marry him?  
\_\_\_\_\_.
  - Who built a monument in the memory of his wife?  
\_\_\_\_\_.
  - Who gave up his kingdom for love?  
\_\_\_\_\_.
  - Who sent red roses to his wife's crypt three times a week until his death in 1999?  
\_\_\_\_\_.
  - Which couple only spent one night apart during thirty years of marriage?  
\_\_\_\_\_.

### A. The Duke & Duchess of Windsor

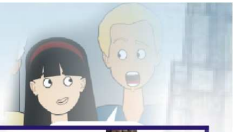
After the death of his father in 1936, Edward VIII became the King of England. He was in love with Mrs. Wallis Simpson, an American divorcee, and he revealed that he wanted to marry her. But the British government did not accept her as Queen of England because she was divorced. Therefore, he had to choose continue as King of England or marry Mrs.



Simpson. He gathered his courage and chose to settle down with the woman he loved, despite the fact that he would no longer remain King.



Adapted from Kay et al., 2002: 20-21.



## Great Love Affairs

### *B. Paul & Linda McCartney*

When Paul McCartney left the Beatles in April 1970, many people concentrated the blame on Linda, his American photographer wife. They felt she had affected Paul regarding his spontaneous decision to leave the group. However, it was obvious that Linda was the love of Paul's life, and in thirty years they only spent one night apart. She died of cancer in 1998 with Paul by her side.



### *C. Marilyn Monroe & Joe DiMaggio*

Their marriage lasted less than ten months, but DiMaggio was always there for Marilyn, to encourage her and contribute whatever support he could. It occurred that he, himself, organized her funeral. Until his death in 1999, he provided for six red roses to be sent to her crypt three times a week.

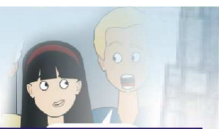


### *D. Shah Jahan & Mumtaz Mahal*

In the 17th century, Emperor Shah Jahan built the unique Taj Mahal in memory of his wife. He was heartbroken when his wife died after nineteen years of marriage. One year after her death, construction of the Taj Mahal began. The entire construction process took twenty-two years to complete, and involved many complex steps. Six years later, Jahan died and was buried with his true love in what is probably one of the most familiar and romantic buildings in the world. It is known in particular as a symbol of India, and is considered a great architectural achievement.



*Adapted from Kay et al., 2002: 20-21.*



## Great Love Affairs

3. *Re-write each of the following sentences with past simple affirmative and negative forms.*

e.g. Yesterday I (buy) a CD. = Yesterday I bought a CD/ Yesterday I didn't buy a CD.

1. Last Saturday I (stay up) all night.

= \_\_\_\_\_.

2. In January I (start) a new diet.

= \_\_\_\_\_.

3. Today I (hurry) to my English lesson.

= \_\_\_\_\_.

4. This morning I (receive) an e-mail.

= \_\_\_\_\_.

5. Last night I (fall) asleep watching TV.

= \_\_\_\_\_.

6. Last year I (go) on holiday abroad.

= \_\_\_\_\_.

\*\*\*\*\*



*Adapted from Kay et al., 2002: 20-21.*



**Appendix F: Translation Production Pre-Test**

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_ No. \_\_\_\_\_ Score \_\_\_\_\_

**Pre Vocabulary Meaning Test (50 minutes)**

**Part I: Word Translation (30 items)**

**Direction:** Translate these words into Thai precisely.

No.	Vocabulary	Meaning
1	achievement (n.)	
2	affect (v.)	
3	concentrate (v.)	
4	consider (v.)	
5	complex (adj.)	
6	contribute (v.)	
7	despite (prep.)	
8	encourage (v.)	
9	establish (v.)	
10	entire (adj.)	
11	eventually (adv.)	
12	fascinate (v.)	
13	familiar (adj.)	
14	gather (v.)	
15	however (adv.)	

<b>No.</b>	<b>Vocabulary</b>	<b>Meaning</b>
16	indicate (v.)	
17	involve (v.)	
18	occur (v.)	
19	obvious (adj.)	
20	particular (adj.)	
21	probably (adv.)	
22	process (v.)	
23	provide (v.)	
24	reveal (v.)	
25	settle (v.)	
26	spontaneous (adj.)	
27	tend (v.)	
28	therefore (adv.)	
29	various (adj.)	
30	unique (adj.)	

**Appendix G: Translation Production Post-Test**

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_ No. \_\_\_\_\_ Score \_\_\_\_\_

**Post Vocabulary Meaning Test (50 minutes)**

**Part I: Word Translation (30 items)**

**Direction:** Translate these words into Thai precisely.

No.	Vocabulary	Meaning
1	unique (adj.)	
2	various (adj.)	
3	therefore (adv.)	
4	tend (v.)	
5	spontaneous (adj.)	
6	settle (v.)	
7	reveal (v.)	
8	provide (v.)	
9	process (v.)	
10	probably (adv.)	
11	particular (adj.)	
12	obvious (adj.)	
13	occur (v.)	
14	involve (v.)	
15	indicate (v.)	

<b>No.</b>	<b>Vocabulary</b>	<b>Meaning</b>
16	however (adv.)	
17	gather (v.)	
18	familiar (adj.)	
19	fascinate (v.)	
20	eventually (adv.)	
21	entire (adj.)	
22	establish (v.)	
23	encourage (v.)	
24	despite (prep.)	
25	contribute (v.)	
26	complex (adj.)	
27	consider (v.)	
28	concentrate (v.)	
29	affect (v.)	
30	achievement (n.)	

### Appendix H: Word Comprehension in Context (Pre-Test)

**Direction:** Fill in the gaps with the given words from the box (15 blanks).

(a) provided	(b) involved	(c) gathering	(d) successful
(e) establish	(f) processed	(g) probably	(h) achievement
(i) despite	(j) entire	(k) contribute	(l) eventually
(m) spontaneous	(n) familiar	(o) considered	(p) various
(q) finally	(r) excited	(s) consisted	(t) accessed

#### Going to a Lantern Festival

Today was Helen Wu's sixteenth birthday! This year she had a feeling that her gift would (1) be different. Then, her parents surprised her with an airline ticket from North Carolina to Taiwan. Helen was very excited because it only just her second time to be there. She could hear the beating of her own heart (2) all of her efforts to control it. Helen would visit her grandparents again and (3) a closer relationship with them in time for this year's lantern festival. But, she's probably not (4) with it, she would love the festival which (5) special parties, fireworks, and the most beautiful lanterns.

Six weeks later, Helen stepped off a plane in Taipei. After a custom officer had (6) her passport, Helen met her grandparents. They couldn't believe it has been an (7) four years' period since they last saw her. They promised she would have a good time. The BBQ party was ready for the celebration. They were happy with their wonderful dinner they (8). Her grandparents were just glad they could (9) in making this wonderful experience for Helen.

(10), after the party, all of them had made their way to the lantern festival in town. A large crowd was (11) to see the thousands of beautiful lanterns and the loud noise from the (12) explosion of firecrackers. The lanterns were (13) traditional inventions which had (14) shapes and sizes. Some looked like lions and dragons. Some were as big as cars. Building it must have been quite an (15).

---

**Appendix I: Word Comprehension in Context (Post-Test)**

**Direction: Fill in the gaps with the given words from the box (15 blanks).**

(a) achievement	(b) spontaneous	(c) provide	(d) familiar
(e) processed	(f) entire	(g) despite	(h) eventually
(i) established	(j) successful	(k) various	(l) contribute
(m) involve	(n) consider	(o) gather	(p) probably
(q) finally	(r) excited	(s) consisted	(t) accessed

**A Necklace in the Grass**

(1)\_\_\_\_\_ the fact that Joe worked hard, he just couldn't (2)\_\_\_\_\_ enough money together to pay for Robert's operation. None of his friends or family had any extra money to (3)\_\_\_\_\_. If Robert didn't get the operation, he might (4)\_\_\_\_\_ go blind.

At the Sands Restaurant, Joe worked as a waiter on Thursday and Friday nights for his second job. Before starting work, he went to relax in the garden behind the restaurant. As he sat down, he saw something shiny in the grass. A valuable beautiful necklace, made of (5)\_\_\_\_\_ -sized diamonds. If he could sell, he could (6)\_\_\_\_\_ Robert with money for the (7)\_\_\_\_\_ expenses in operation. But it would not be an (8)\_\_\_\_\_ he would be proud of. "I may be poor, but I have (9)\_\_\_\_\_ an honest reputation, and I want to keep it" he thought. To find the owner would (10)\_\_\_\_\_ a lot of time and trouble. Joe made a (11)\_\_\_\_\_ decision.

However, there was another option to (12)\_\_\_\_\_. He could give the necklace to Michael Harris, the owner of the Sands Restaurant. Mr. Harris could (13)\_\_\_\_\_ check with his customers to find out who lost it. A few minutes later, the owner of the necklace was found. Elizabeth Hardwick, was very happy to have the necklace back. Her grandmother, with whom she was very (14)\_\_\_\_\_, gave it to her long ago. She gave Joe an envelope. He opened the envelope and saw a check for \$5,000. He couldn't believe it! After the bank (15)\_\_\_\_\_ this check, he would have the money to pay for Robert's operation!

---

### Appendix J

#### Raw Score Obtained from the Main Study

N=30	Translation (30 points)				Word Comprehension (15points)			
	Pre-test	%	Post-test	%	Pre-test	%	Post-test	%
1	0	0	24	80	0	0	8	53.3
2	0	0	23	76.7	0	0	3	20
3	0	0	17	56.7	0	0	4	26.7
4	0	0	23	76.7	0	0	4	26.7
5	0.5	1.7	22	73.3	0	0	8	53.3
6	0	0	22.5	75	0	0	6	40
7	0	0	8	26.7	0	0	4	26.7
*8	0.5	1.7	25.5	85	0	0	9	60
9	0	0	24.5	81.7	0	0	8	53.3
*10	1	3.3	27	90	0	0	9	60
11	0	0	25.5	85	0	0	8	53.3
12	0	0	16	53.3	0	0	4	26.7
13	0	0	20	66.7	0	0	6	40
14	0	0	22.5	75	0	0	5	33.3
15	0	0	23.5	78.3	0	0	7	46.7
*16	2.5	8.3	28	93.3	4	26.7	11	73.3
17	0	0	23	76.7	0	0	7	46.7
18	0	0	23.5	78.3	0	0	6	40
*19	2	6.7	23.5	78.3	0	0	11	73.3
*20	0.5	1.7	25.5	85	0	0	8	53.3
*21	2	6.7	27	90	4	26.7	11	73.3
22	1	3.3	21	70	0	0	9	60
*23	1	3.3	26.5	88.3	0	0	11	73.3
24	0	0	21	70	0	0	4	26.7
25	0	0	19.5	65	0	0	6	40
*26	1	3.3	25.5	85	0	0	9	60
*27	0.5	1.7	25	83.3	0	0	8	53.3
28	0	0	21.5	71.7	0	0	5	33.3
*29	0.5	1.7	24.5	81.7	0	0	8	53.3
30	0.5	1.7	24	80	0	0	8	53.3
$\bar{x}$	<b>0.5</b>	<b>1.5</b>	<b>22.8</b>	<b>75.9</b>	<b>0.27</b>	<b>1.8</b>	<b>6.86</b>	<b>45.7</b>

**Notes:** Asterisk (\*) in front of the number of students represents the top ten highest achieving students, who took part in the oral interviews.