THE EFFECTS OF READING TASKS ON INCIDENTAL VOCABULARY LEARNING

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To my parents and late grandpa Fikret KÜÇÜKOĞLU

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ÖZ

Kelime bilgisi, dil öğretiminde ve öğreniminde önemli bir unsurdur. Bu sebeple daha etkili yöntemleri belirlemek ve uygulamak öğrencilere ve öğretmenlere zaman, enerji ve emek tasarrufu sağlayacaktır. Bu çalışmanın amacı üç okuma etkinliğinin rastlantısal kelime öğrenimine etkisini karşılaştırmaktır. Etkinlikler: kelimenin anlamını bağlamdan çıkarma, parçayla birlikte verilmiş olan sözlükçenin kullanımı, ve İngilizce-Türkçe, İngilizce-İngilizce sözlük kullanımıdır. Veriler ön test, üç adet son test ve hatırlama testi vasıtasıyla toplanmıştır. Çalışmaya İngilizcesi alt-orta seviyede olan üniversite öğrencisi 24 denek katılmıştır. Tüm çalışma yedi haftada tamamlanmıştır. Her bir etkinlik için 6 adet olmak üzere 18 hedef kelimeyi seçmek amacıyla 30 soruluk bir ön test uygulanmıştır. Beş hafta sonra öğrenciler üç okuma etkinliğini tamamlamış ve kelime testini yapmışlardır. Öğrenmenin kalıcı olup olmadığını görmek amacıyla son testten iki hafta sonra katılımcılara son testte kullanılan soruları içeren bir hatırlama testi uygulanmıştır. Araştırmanın bulguları sözlükçeyle yapılan okumanın en etkili etkinlik olduğunu göstermiştir. Sözlükçeden sonra sözlükle okuma gelmektedir. En az etkili olan okuma etkinliği ise kelimenin anlamını cümleden çıkarmadır.

Anahtar Kelimeler   : rastlantısal kelime öğrenimi, bağlamdan kelimenin anlamını çıkarma, sözlükçe, sözlük, hatırlama

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ABSTRACT

Vocabulary is a core component of language teaching and learning. Thus, identifying and applying the more effective strategies may help the learners and teachers save time, energy, and effort. The purpose of this study is to compare the effects of three reading tasks on incidental vocabulary learning. The tasks are: inferring the meaning from context, consulting the gloss provided for the text and consulting a bilingualized paper dictionary while reading. Data were collected through a pre-test, three post-tests and a retention test. 24 pre-intermediate learners of English as a foreign language in a university participated in the study. The whole study lasted seven weeks. The pre-test was administered to select 18 target vocabulary, 6 for each treatment. Five weeks later, the students completed three reading tasks and took vocabulary tests. In order to test whether the students retained the target words, a retention test that contained all the items in the post-tests were administered to the participants two weeks after the reading treatments. Findings of this study indicated that reading a text with the provided gloss is the most effective task. Then comes reading with a bilingualized dictionary. The least effective reading task is inferring meaning from context.

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CHAPTER 1

INTRODUCTION

Introduction

In this part, the outline of the study is given. The problem that led to this study is stated and the aim of the research is identified. In order to indicate the importance of the research in this field, the significance of the study is represented in detail. As there are some assumptions and limitations in the research, they, too, are included in this part of the research. Lastly, some definitions of the key terms are presented.

Statement of the Problem

There are four language skills and four language components. The skills are listening, speaking, reading and writing; the components of knowledge are vocabulary, grammar, phonology and graphology (Baker, 2001, p. 36). To become competent in a foreign language, one must improve all his/her language skills and components of language.

Being one of the language components, vocabulary is regarded by Lewis (2002a) as "the core or heart of language" (p. 89). To convey meaning, one needs vocabulary more than grammar. Wilkins (1972) emphasizes the importance of vocabulary knowledge by stating "without grammar very little can be conveyed; without vocabulary nothing can be conveyed" (p. 111). In the Lexical Approach, the core of teaching is vocabulary learning. It is defined by Richards and Schmidt (2002, p. 304) as an approach in which lexical phrases are seen as the basic building blocks of the teaching and learning process, and the lexicon occupies a central role in syllabus design, course content and teaching activities.

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Vocabulary, word, lexis, and lexicon are the terms that are used interchangeably in language teaching. Lewis (2002b, p. 220) states that the term 'vocabulary' is used to refer to words which are organized in a dictionary with their fixed meanings. Richards and Schmidt (2002) define vocabulary as a set of lexemes, and lexeme, or lexical item, as "the smallest unit in the meaning system of a language that can be distinguished from other similar units" (p. 303). Lexeme is the technical term used for one of the meanings of word (Bauer, 2004, p. 62); it is an association between meaning and form that ignores certain types of variation both on the meaning side and on the form side (Cruise, 2006, p. 92). Word is a unit of expression that has universal intuitive recognition by native-speakers, both in written and spoken language (Crystal, 1980, p. 383), and it is a small linguistic unit which can occur on its own in writing or speech (Richards & Schmidt, 2002, p. 588).

There are two types of words: function words and content words. Function words are the ones that have little meaning on their own; they become meaningful with the content words they are used. Content words, on the other hand, have a meaning when used alone. While function words are limited, content words are not.

There are two types of vocabulary learning: incidental and intentional vocabulary learning. As the name suggests, intentional learning is conscious. The learning process is intended by the students or the teachers; the focus is on vocabulary. Incidental learning is the exposure to language when one's attention is focused on the use of language, rather than the learning itself. In this type of learning, learners are not aware that they are learning vocabulary; rather they focus on the communicative side of the activity.

According to Wallace (1982, p. 42), for the unknown words, there are four techniques a teacher can use in class: (A) They can provide an explanation of the difficult words by translating into the mother tongue, or explain or give an equivalent in the target language. (B) They can ignore the word if students do not ask. (C) They can have the students check up the target words in their dictionaries. (D) They can try to get the meaning of the word from the students who might know, and if the students do not happen to know, they can try to get the class to guess or infer the meaning. They should ask themselves what kind of tasks can be used to help students learn the meanings of words correctly, use them effectively and store them in their long-term memory. In this study, effects of reading tasks on incidental vocabulary learning will be studied. Technique A (gloss), Technique C (dictionary access), and Technique D (inferring without dictionary, without gloss), and their effects on learning and recalling vocabulary are going to be investigated.

This study focused on these three activity types and their effects on incidental vocabulary learning. In order for the study to investigate the effects of reading tasks on incidental vocabulary learning effectively, the students were not told that they would take a vocabulary exam; rather they were informed that a reading comprehension test was going to be applied.

Purpose of the Study

The purpose of this study is to identify the most effective reading task in incidental vocabulary learning. The research questions will be as follows:

1. What is the effect of using a dictionary during a reading activity on vocabulary learning?

2. What is the effect of using a gloss during a reading activity on vocabulary learning?

3. What is the effect of inferring the meaning of new words, without a dictionary and without a gloss, during a reading activity on vocabulary learning?

4. Which one is the most effective of the three tasks used in a reading activity for vocabulary learning: dictionary use, gloss use, or neither-dictionary-nor-gloss-use?

   a. What is the correlation between the effects of dictionary use and gloss use on vocabulary learning during a reading activity?

   b. What is the correlation between the effects of dictionary use and neither-dictionary-nor-gloss use on vocabulary learning during a reading activity?

   c. What is the correlation between the effects of gloss use and neither-dictionary-nor-gloss use on vocabulary learning during a reading activity?

Significance of the Study

As vocabulary is a core component of language teaching and learning, identifying and applying the more effective strategies may help the learners and teachers save time, energy, and effort. The current study aims to find out the most effective reading task in learning vocabulary, and to help foreign language teachers (English-as-a-foreign-language

teachers in our case) and learners (English-as-a-foreign-language learners in our case) use effective techniques to teach and learn the vocabulary of the foreign language.

Limitations of the Study

This study is limited to a class of 24 students at a military academy. The study is limited to the effects of three reading tasks: inferring the meaning from context, reading with a gloss and reading with a dictionary. Autonomous learners or students with a retentive memory might affect the results of the experiment. Another limitation is that the study investigates the effects of certain tasks on the learning of a limited number of words.

Assumptions of the Study

It is assumed that the data gathered from the sample population represents the population and that the findings can be generalized to the population. It is also assumed that the participants of the study will be sincere in their answers.

Definitions of Key Concepts

Delayed Post-test: The test which was applied two weeks after the reading activities and their vocabulary tests; the retention test.

Gloss: A brief explanation of some expression in a foreign language (Trask, 1997, p. 96)

Incidental Learning: Learning without focusing on the task or being aware of.

Post-test: The test which was applied right after every reading activity.

Pre-test: The test applied to indicate the previous vocabulary knowledge of the participants.

Reading task: In this study, the phrase refers to one of the three tasks: reading with a gloss, reading with a dictionary, or reading neither with a dictionary or gloss; treatment.

Retention test: The test which was applied two weeks after the reading activities and their vocabulary tests; the delayed post-test.

Treatment: In this study, treatment is one of the three tasks: reading with a gloss, reading with a dictionary, or reading neither with a dictionary or gloss; reading task.

Vocabulary: The smallest unit in the meaning system of a language that can be distinguished from other similar units (Richards & Schmidt, 2002).

CHAPTER 2

LITERATURE REVIEW

Introduction

According to Fromkin, Rodman, and Hyams (2003), there are five grammatical aspects of language: phonology, phonetics, morphology, syntax and semantics. While phonology is the study of the sound systems of all languages, phonetics is the study of linguistic speech sounds. Morphology studies the structure of words while syntax deals with the rules of sentence formation. Finally, semantics deals with the meaning of morphemes, words, phrases, and sentences. There are four language skills and four language components (Baker, 2001, p. 36). The skills comprise listening, speaking, reading and writing; the components of knowledge are vocabulary, grammar, phonology and graphology.

Knowing a language is a multidimensional process. We can produce or understand utterances we have never heard or read before. As Fromkin et al. (2003, p. 5) state, knowing the sound and sound patterns in a language is just one part of the linguistic knowledge. Knowing a language also means to know that certain sound sequences signify certain concepts or meanings. As Krashen and Terrell (1983, p. 155) point out, vocabulary is basic to communication and if learners do not know the meanings of the key words, they cannot participate in the conversation even if they know the morphology and syntax of the utterances addressed to them.

In this chapter, some aspects of vocabulary will be reviewed. It is aimed to present the main concepts, issues and discussions related to vocabulary. Starting with the definitions, and types of vocabulary, teaching and learning vocabulary both in the mother tongue (L1) and the foreign language (L2) will be discussed. Besides, vocabulary teaching techniques,

and the relationship between reading and vocabulary will be put forward. Retention of vocabulary will be discussed in the following part. Finally, the studies carried out on the effects of reading tasks on learning vocabulary, and their retention effects will be reviewed.

Vocabulary

Zimmerman (1997) states that "vocabulary is central to language and of critical importance to the typical language learner" (p. 5). Being one of the components of language, vocabulary is considered by Lewis (2002a, p. 89) as the core or heart of language. To convey meaning, one needs vocabulary more than grammar, the importance of vocabulary is emphasized by Wilkins' (1972) statement that "without grammar very little can be conveyed; without vocabulary nothing can be conveyed" (p. 111). Schmitt (2010, p. 4) states that the stakeholders in the learning process agree that learning vocabulary is an essential part of mastering a second language and this is emphasized with the observation that learners carry dictionaries, not grammar books. In the Lexical Approach, the core of teaching is vocabulary learning. It is defined by Richards and Schmidt (2002, p. 304) as an approach in which lexical phrases are seen as the basic building blocks of the teaching and learning process, and the lexicon occupies a central role in syllabus design, course content and teaching activities.

Knowing a word means knowing its form, meaning and use (Nation, 2008, p. 61). Communication often fails because of many reasons. One of the mostly encountered problems in communication is the wrong word choice of the speaker. Other problems can be the incorrect word order, imperfect pronunciation, or ungrammatical morphemes. Thus, to convey the correct meaning, what speakers need most is the appropriate vocabulary, along with the knowledge of socio-cultural rules of use (socio-pragmatics).

Definition of Vocabulary

The word is a basic unit intensively studied by morphology and semantics. Vocabulary, word, lexis, lexeme, lexical item and lexicon are the terms that are used interchangeably. However, as the synonyms for the term 'word' vary, so do the definitions. Carter (2002) defines word as "the *minimum meaningful unit* of language" (p. 5) (italics in original); it is a unit of expression that has universal intuitive recognition by native-speakers, both in

written and spoken language (Crystal, 1980, p. 383); it is a small linguistic unit which can occur on its own in writing or speech (Richards & Schmidt, 2002, p. 588). Lewis (2002b, p. 220) states that vocabulary is used to refer to words which are organized in a dictionary with their fixed meanings. It is all the words of one language (Akar, 2010, p. 94). Richards and Schmidt (2002) define vocabulary as a set of lexemes. They define lexeme, or lexical item as "the smallest unit in the meaning system of a language that can be distinguished from other similar units" (p. 303). Lexeme is the technical term used for one of the meanings of word (Bauer, 2004, p. 62); a term some linguists use to refer to the minimal distinctive unit in the semantic system of a language (Crystal, 1980, p. 208); a word or group of words that function as a single meaning unit (Thornbury, 2002, p. 6); it is an association between meaning and form that ignores certain types of variation both on the meaning side and on the form side (Cruise, 2006, p. 92). Carter (2002, p. 7) defines lexemes as the basic, contrasting units of vocabulary in a language. Lexis is another word for vocabulary (McCarthy, O'Keeffe & Walsh, 2010, p. 158), a term that refers to the vocabulary of a language (Crystal, 1980, p. 209), it covers single words and multi-word objects which have the same status in the language as simple words (Lewis, 2002b, p. 61). Richards and Schmidt (2002) define lexicon as "the mental system which contains all the information a person knows about words" (p. 308). Fromkin et al. (2003, p. 586) define the term similarly: the speaker's knowledge about morphemes and words, or a speaker's mental dictionary. According to Owens (2012), lexicon is dynamic and changes with experience.

Types of Vocabulary

There are two types of words: function words and content words. Function words are the ones that have little meaning on their own, but show grammatical relationships in and between sentences (Richards & Schmidt, 2002, p. 116). Conjunctions, prepositions, articles, auxiliaries, complementizers and pronouns are function words. Function words do not have a clear lexical meaning but have a grammatical function (Fromkin et al., 2003, p. 582), they consist of relatively few words and new words are not usually added to them (Richards & Schmidt, 2002, p. 374); they are finite. Content words, on the other hand, refer to a thing, quality, state, or action and have meaning when used alone (Richards & Schmidt, 2002, p. 116). They are nouns, verbs, adjectives and adverbs that constitute the major part of the vocabulary (Fromkin et al., 2003, p. 578) and contain unlimited number

of items (Richards & Schmidt, 2002, p. 374). According to Carter (2002, p. 8), content words carry a higher information content and are syntactically structured by the grammatical words.

Learning Vocabulary

As Lightbown and Spada (2006, p. 96), and Carter (2002, p. 184) point out, vocabulary was underestimated and neglected in language teaching, little importance was given to learning and teaching vocabulary (Alemi & Tayebi, 2011); vocabulary was considered to be a less important element in learning an L2. Researchers were busy with syntax and morphology, but a paradigm shift occurred in the 1970s and early 1980s: research on vocabulary learning gained importance and vocabulary acquisition has become one of the most active areas in L2 acquisition research since then. According to Thornbury (2002, p. 14), the reason for this paradigm shift was the emergence of the Communicative Approach.

There are different views on the learning ways of vocabulary, some of which have almost identical explanations. Hatch and Brown (2001, p. 368), and Dewaele (2004, p. 146) propose two ways of learning vocabulary items in a second language: incidental or intentional. Schmitt (2000, p. 120) suggests two approaches to vocabulary acquisition: explicit and incidental. Milton (2009, p. 218) argues that language teaching blurs the distinction between incidental and implicit learning by using them almost interchangeably. In explicit learning, attention is focused on the information, and the process is time-consuming. Unlike explicit learning, attention is not focused on learning in incidental learning, the learning process is slower and more gradual. Learners acquire most of the new words implicitly, accidentally, or unconsciously (McCarthy et al., 2010, p. 108). Incidental learning is the exposure to language when one's attention is focused on the use of language, rather than the learning itself. In this type of learning, learners are not aware that they are learning vocabulary; rather, they focus on the communicative side of the activity. It occurs as a byproduct of doing or learning something else, not with the intention to learn a particular linguistic feature (Hatch & Brown, 2001, p. 368; Schmitt, 2010, p. 29); it results from unintentional or unplanned activities. Schmitt (2000, p. 120) states that incidental learning can occur when language is used for communicative purposes. It is imminent that, to a large degree, vocabulary development is implicit or incidental beyond a certain level of proficiency in learning a language, especially a second or a foreign language (Carter, 2002, p. 202). As the name suggests, intentional learning is conscious.

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The learning process is intended by the students or the teachers; the focus is on vocabulary. Thus, because of the classifications above, it can be concluded that incidental-implicit, and intentional-explicit are alternative pairs.

Ellis (1995) identifies four main points along a continuum from explicit to implicit vocabulary learning:

1. A strong implicit learning hypothesis holds that words are acquired largely by unconscious means.

2. A weak implicit learning hypothesis holds that words cannot be learned without at least some noticing or consciousness that it is a new word which is being learned.

3. A weak explicit learning hypothesis holds that learners are basically active processors of information and that a range of strategies are used to infer the meaning of a word, usually with reference to the context in which it appears.

4. A strong explicit learning hypothesis holds that a range of meta-cognitive strategies are necessary for vocabulary learning. In particular, the greater the depth of processing involved in the learning, the more secure and long term the learning is likely to be (as cited in Carter, 2002, p. 203).

Learning Vocabulary in the First Language

Learning vocabulary is an incremental process: one learns new words continually in L1 throughout life. According to Hiebert and Kamil (2005, pp. 2-3), vocabulary is the knowledge of meanings of words and it cannot be fully mastered, and the growth of vocabulary extends across a lifetime. Schmitt (2000, p. 116) states that most L1 vocabulary is picked up by simply being exposed to language. As Takac (2008, p. 16) and Cunningham (2005, p. 46) inform, the process of L1 vocabulary acquisition is not based on explicit formal instruction, but on incidental learning from large amounts of language input through exposure to oral or written language. Pressley, Disney, and Anderson (2007, p. 213) agree with this view by stating that people acquire thousands of words mostly by interacting with others, listening to radio and television, and reading; that is, by acquiring words incidental to other tasks rather than being directly taught at school, and Schmitt (2000, p. 122), also, agrees by stating that parents do not teach their children most of the vocabulary they acquire. Read (2000, p. 43) points out that most of the words learned in L1 are not taught by parents or teachers; in fact, they are not learned in any formal way. This

can be explained by the fact that native speakers acquire words incidentally when they encounter them in the speech and writing of other people.

Learning Vocabulary in a Second Language

Learning L2 vocabulary is not just learning a word, but the range of meanings that go with it (Cook, 1996, p. 55). There are two differences between learning an L1 and L2. The first one, as Schmitt (2000, p. 19) states, is that the children learning their L1 must learn how things exist and operate in the real world while they are learning the vocabulary. However, L2 learners have the concepts, the experience of an L1 acquisition, and are older and more cognitively mature; thus, for them the process can be closer to relabeling the already known concept with an L2 word. As McCarthy et al. (2010, p. 102) confirm, learning L2 vocabulary is relabeling the world. L2 vocabulary learning is different from L1 vocabulary acquisition in that an L2 learner has already developed conceptual and semantic systems linked to the L1; also, the learners' exposure to L2 input is usually limited to classroom context unlike children who expand their vocabulary solely through exposure to the L1 input (Takac, 2008, pp. 8-9). The second, according to Thornbury (2002, p. 18), the most distinctive difference between L1 and L2 lexicon is that the person who learns a second language already has a first language. The learner translates words and expressions from L2 into L1 inevitably.

Schmitt (2000, p. 116) expresses that L1, age, amount of exposure, motivation, and culture, are the variables that affect L2 vocabulary learning and he proposes that it is very difficult to formulate a learning theory that can explain all of them.

As Takac (2008) states, "an important source of vocabulary in L2 learning is a wide range of contexts. Learners can learn lexical items if they are exposed to sufficient amounts of comprehensible input" (p. 17). In the classroom, sources of vocabulary input are lists, coursebooks, vocabulary books, the teacher and other students (Thornbury, 2002, p. 18). Exposure to words in context in the target language is a catalyst for incidental learning. Even if the learner does not understand every word, vocabulary continues to grow by interacting native speakers or reading for pleasure (Krashen & Terrell, 1983, p. 157).

The development in one's vocabulary, particularly in a second or foreign language, mostly occurs implicitly or incidentally beyond a certain level of proficiency (Carter, 2002, p. 202). There is consensus on the suggestion that at least for second language learners, both

explicit and incidental learning are necessary, and should be seen as complementary (Schmitt, 2000, p. 120).

Teaching Vocabulary

Lightbown and Spada (2006, p. 192) suggest that if the learners are interested in learning, vocabulary can be taught at any time with the appropriate methods. The teacher can present the meaning of words either verbally or non-verbally through this process. Takac (2008, p. 20) enumerates five ways of presentation:

1- Connecting an L2 item with its equivalent in L1: It is mostly used to check comprehension, or point out the similarities and differences between L2 and L1 when necessary.

2- Defining the meaning: The teacher can define the word by the help of synonyms and antonyms, offering a subordinate word or the superordinate term, describing the function and so on. These definitions should be simple and clear.

3- Directly connecting the meaning to real objects or phenomena: This is mostly used with young learners or beginners. It includes procedures such as demonstration, realia and visual aids.

4- Presentation through context: The teacher contextualizes the lexical item and the learners guess the meaning.

5- Active involvement of learners in presentation: Learners are encouraged to discover the meaning of a word from its parts or by elicitation.

Five main methods of teaching vocabulary were identified in The National Reading Panel (2000):

1. Explicit Instruction: Students are given definitions or other attributes of words to be learned.

2. Implicit Instruction: Students are exposed to words or given opportunities to do a great deal of reading.

3. Multimedia Methods: Vocabulary is taught by going beyond text to include other media such as graphic representations, hypertext, or American Sign Language that uses a haptic medium.

4. Capacity Methods: Practice is emphasized to increase capacity through making reading automatic.

5. Association Methods: Learners are encouraged to draw connections between what they do know and words they encounter that they do not know.

Memorizing wordlists, a traditional vocabulary teaching technique, and mnemotechnics, a recent technique, with which students learn L2 words by associating them with unrelated images or sounds in L1, are proposed as two vocabulary teaching techniques by Cook (1996, p. 56). For example, a Turkish learner of English may learn and remember the word 'dungeon', meaning a dark underground prison in a castle, by associating it with the sounds a prisoner makes by hitting the metal material in the dungeon and making a sound similar to the pronunciation of 'dungeon'. However, vocabulary that can be learnt with this technique is limited.

Nation (2008, pp. 59-66) offers ten ways for dealing with words met in intensive reading:

1- Pre-teaching: In this technique, the teacher teaches the unknown vocabulary prior to reading to avoid problems the learners might encounter while reading the passage. A reasonable amount of time should be spent on each word as it uses valuable classroom time.

2- Simplifying: Replacing the least useful unknown words with known or more useful words. The aim of this technique is to reduce the density of unknown vocabulary. As it might take away the opportunity to encounter particular vocabulary items, it should be used with low frequency words.

3- Adding a glossary: Teachers can make a glossary before the learners see the text. Glossaries in L1 or L2 help the learners learn the words, and they allow time to be spent on other words.

4- Putting words in an exercise after the text: The teacher can prepare cloze tests, matching word and meaning exercises, and collocation activities. As these types of exercises take a lot of time to prepare and do, it is better applied to high frequency words.

5- Quickly giving the meaning: The teacher can give an L1 meaning for the word or a definition in L2, s/he can draw a picture on the board, or demonstrate the word. This technique may satisfy the learners and does not interrupt the reading too much.

6- Doing nothing about the word: Low frequency words that are not important for the message of the text may be ignored.

7- Helping learners use context clues to guess the meaning of the word: The main goal of this technique is to practice and improve the skill of guessing the meaning of a word from context.

8- Helping the learners use a dictionary: Dictionary use is a useful vocabulary learning strategy. Learners look up the meaning of a word and gather extra information about the words, and good dictionaries help learners retain them. Also they help the learners check the words and confirm their guesses.

9- Using word parts to help a word be remembered: Another vocabulary learning strategy is to break words into their parts and to relate the meaning of the parts to the meaning of the word. It should be kept in mind that it is a risky way of guessing the meaning of unknown vocabulary, however.

10- Spending time on explaining the word: The teaching of the unknown vocabulary is while reading a text. The focus is on the meaning of a word. Attention can also be given to the spelling, pronunciation and parts of the word.

Vocabulary and Reading

Language learners often meet new vocabulary through written texts. Lightbown and Spada (2006, p. 188) assume that children expand their vocabulary in L1 during their school years dramatically and the main reason for this growth is reading. Texts have cohesion and coherence, are authentic, and they reflect real-world knowledge. According to McCarthy et al. (2010), "teaching words in texts involves giving learners appropriate strategies so that they can both *process* and *produce* new language" (p. 97) (italics in original). Reading serves as an important source of comprehensible input. If students read for interest and pleasure, vocabulary will grow even if they do not understand every word (Krashen & Terrell, 1983, p. 157).

Consulting a Dictionary while Reading

Dictionary is a reference book that provides definitions of some set of words. Some dictionaries provide additional information such as pronunciations, etymologies and

examples of use, etc. (Trask, 1997, p. 69). While reading, learners usually use a dictionary to find a word's meaning out or to check their assumptions (Takac, 2008, p. 62). A bilingual dictionary is a type of dictionary that provides translations from one language into another. Carter (2002, p. 151) states that bilingual dictionaries are more generally consulted in the beginning stages of language learning, as proficiency develops, the learner makes greater use of a monolingual dictionary.

Laufer and Hadar (1997) examined the effects of monolingual, bilingual and bilingualized (semibilingual) dictionaries on 123 high school and university EFL learners' comprehension and production of new words. The participants' L1 was Hebrew. The researchers chose 15 low-frequency words, 5 of each were given with their entries from the three types of dictionaries. The results of the experiment suggested the effectiveness of the dictionaries differed according to the dictionary user. Unskilled dictionary users benefited most from the bilingual dictionary on the overall dictionary use. In comprehension, the highest score was achieved with the bilingualized dictionary, but there was not a significant difference between the two. The result of the monolingual dictionary use was the worst of the three dictionaries in both comprehension and overall dictionary use.

The empirical study that Chen (2011) conducted on undergraduate English majors in Chinese universities attempted to explore the role of dictionary use in L2 vocabulary learning in reading context. The subjects performed a reading task under one of the three following conditions: they could use a paper English-Chinese bilingualized dictionary (PBLD), an electronic English-Chinese bilingualized dictionary (EBLD), or they did not have access to a dictionary. After they completed the task, the students were given an unexpected retention test on the target words included in the reading passage. The same retention test was repeated one week later. The study suggested that dictionary use is a more effective strategy of vocabulary learning than contextual guessing. There was no significant difference between PBLD and EBLD. However, the EBLD showed some advantage over the PBLD for retention.

Using the Gloss while Reading

Trask (1997, p. 97) defines gloss as a brief translation of some expression in a foreign language, intended only as a rough guide to its meaning, function or structure. Glossing is explaining words (Thornbury, 2002, p. 83). A gloss provides the meanings of words in L1

or in a simple L2 definition either in the margin next to the line of an unknown word or at the end of a text. They are an alternative to dictionaries and are often less disruptive than dictionaries (Nation, 2009, pp. 58-59). Glossing is a way to help learners benefit from reading by giving them information about the unknown vocabulary in a text (Schmitt, 2010, p. 34); can be valuable in assisting learning (Carter, 2002, p. 204).

When compared, glosses have advantage over non-gloss treatments in incidental vocabulary learning. Spahiu (2000) carried out a study on the effects of vocabulary gloss on incidental vocabulary learning. Three groups of 90 intermediate-level students were assigned a text about tourist promotion. One group read without glossary, the other with bilingual (English-Turkish) glossary and the last with a monolingual (English-English) glossary. An immediate post-test right after the treatment and a delayed post-test three weeks after the treatment were applied to the students in the three groups in order to test the recognition and recall effects of the treatments on the 16 vocabulary items. It was concluded that glossing had an extremely positive effect on incidental vocabulary learning through reading, and that the bilingual glossary was superior to monolingual glossary in promoting vocabulary learning.

Yoshii (2006) examined the effectiveness of interactional L1 and L2 glosses on incidental vocabulary learning. There were four groups in the study: L1 text-only gloss, L2 text-only gloss, L1 text plus picture gloss and L2 text plus picture gloss. The participants took a pre-test that contained 14 target words and 10 additional distractors one week before the treatment. Students read a story with 20 highlighted words, verbs exclusively, 14 of which as targets and 6 distractors. The participants, who were not told before, took two tests: one right after the treatment and the other two weeks later. It was concluded that both L1 and L2 glosses are effective in enhancing learners' incidental vocabulary learning.

Inferring the Meaning from Context while Reading

Inferencing means using available information to guess meanings of new items, predict outcomes, or fill in missing information (Tuncay, 2003). Tens of thousands of L1 words are too many to be learned only from formal study. Wallace (1982, p. 31-32) argues that of the 40.000 to 200.000 words we know, the meanings of about 2.000 are taught, and the rest is gained when we guess the meanings of words from the context by hearing or reading them.

There are different views on inferring the meaning of unknown words from context; some researchers are in favor of this strategy while some others do not suggest it. For example, Nation (2008, p. 74-76; 2009, p. 55) points out that guessing the meaning from context is the most useful vocabulary strategy because it can be applied to a great number of words, can be done incidentally, and can account for most of the vocabulary growth of a learner who is exposed to a lot of meaning-focused input. If learners are good at guessing the meanings of unknown vocabulary from contextual clues, learning vocabulary and reading become easier; however, he adds that in order for this strategy to be successful, the learners should be good at listening and reading, know around 98% of the running words in the material, and have access to this kind of input. According to McCarthy et al. (2010), inferencing, or reading/listening between the lines, is a skill which teachers should teach and learners need to develop in order to deal with words in texts. This skill involves constructing meanings by using a combination of both linguistic and world knowledge.

The role of the context in the early stages of vocabulary learning is relatively small (Takac, 2008, p. 16); and the fact that most guesses from context do not give a full, precise meaning of a word is a limitation of this strategy (Nation, 2008, p. 76). Inferring word meanings is not easy as successful inferencing requires an adequate level of knowledge and inference skills. Even if the learner has the skills, they might end up in incorrect guessing, and it may be difficult to correct such errors. Although possessing inference skills may contribute to vocabulary growth, these skills do not result in rich vocabulary. On the whole, implicit incidental learning seems to be a slow and inefficient process which does not necessarily imply long-term retention (Sökmen, as cited in Takac, 2008).

Büyükdurmuş Selçuk (2006) investigated contextual guessing strategies employed by 32 pre-intermediate students. The study was conducted at the Department of Basic English of Hacettepe University. The researcher chose a text about reading a newspaper as a way to improve English. 14 content words were selected from the text and were replaced with words made-up according to the orthographic and morphological rules of English. Data were collected from three sources: an in-class reading task, think-aloud protocols (TAPs) and retrospective interviews (RIs). 3 successful and 3 unsuccessful guessers were chosen after the reading task, and TAPs and RIs were conducted with these participants to gather data on their strategy use. Findings of the study indicated that various strategies were employed to guess the meanings of the words, and both successful and unsuccessful guessers employed the same strategies, but successful guessers used these strategies less

often. The fact that participants who made more correct guesses suggested they used lexical inferencing strategies more effectively.

Retention of Vocabulary

Forgetting is inevitable in every kind of learning, and vocabulary is no exception. Schmitt (2010) states that "vocabulary acquisition is not a tidy linear affair, with only incremental advancement and no backsliding. All teachers recognize that learners forget material as well" (p. 23). He adds that vocabulary knowledge should be viewed as being in a state of flux, because until the word is mastered and fixed in memory, both learning and forgetting occurs. McCarthy et al. (2010, p. 101) observe that one can store, retrieve and use a great number of words in their L1, and tens of thousands of words are used by educated adult speakers quickly and easily.

The role of memory is crucial in any kind of learning including vocabulary learning. Learning of lexical items is not linear and learners forget some components of knowledge (Takac, 2008, p. 10). Thornbury (2002, p. 23) states that learning is remembering and it is a matter of the memory. Schmitt (2000, p. 131) proposes two basic types of memory: Short-Term Memory (STM) and Long-Term Memory (LTM). The brain holds limited information for a few seconds in STM while it stores much and long-lasting information in LTM. Transferring the lexical information from the STM to the more permanent LTM is the object of the vocabulary learning process. Akar (2010) mentions that constant repetition is required to hold information in STM, and any distraction or interruption interferes with it; LTM, on the other hand, can accommodate an unlimited amount of information, and recall in it even weeks and years after the first encounter.

In order to find out the effects of explicit and implicit vocabulary teaching on vocabulary learning and retention, Hulstijn (1992) conducted a research on 65 adult learners of Dutch as an L2 to find out which of the following two treatments is more effective and efficient: inferring the meaning of an unknown word in an L2 text, or giving the learners the meaning of the unknown word, for example, by translating it into L1 or providing a synonym. There were four groups in the study: a translation group (the subjects were provided with a marginal gloss in their L1), concise context group (for every target word, a sample sentence was given in the margin to help the subjects infer the meaning of the target word easily), multiple choice group (for each target word, four options were given in

the margin to help the subjects choose the correct alternative) and the no-cue/control group (the group that was given no information about the target words in the margin). The subjects read the text and completed the comprehension questions. Two unexpected post-tests on meaning and form showed that retention was better in the translation group, who were given the meanings of the target vocabulary in L1, than that of the concise context group, who had to infer meaning. Also, the multiple choice group did not show a higher retention than the concise context and control group.

In the study Joe (1998) conducted, 48 adult ESL learners, who were not informed of the real purpose of the study and not told that the study was about reading tasks and language learning, were randomly assigned to three treatments. The experimental group read and retold a text with explicit generative training and without access to the text during recall. The comparison group read and retold a text with explicit generative training but with access to the text during recall and the control group neither read nor retold a text. Results showed that the reading and retelling tasks promoted incidental vocabulary learning. The study suggested that involvement in tasks that require reading and recall without focusing on vocabulary explicitly can facilitate vocabulary acquisition.

In learning vocabulary, tasks that demand more involvement result in more effective learning. Hulstijn and Laufer (2001) conducted a parallel experiment in an incidental learning setting in two countries: the Netherlands and Israel. In the experiment, short-term and long-term retention of ten unknown vocabulary were investigated in three learning tasks. One of the learning tasks was reading comprehension, the second was comprehension plus filling in target words, the third was writing a composition with the target words. Time given for the tasks differed according to the involvement load of the task. The students assigned with composition-writing were given the most time, the students with reading comprehension the least. Retention of the newly learned vocabulary was lowest in the reading task, higher in reading plus fill-in, and highest in the composition task.

Bayram (2009) conducted a twelve-week study at the School of Foreign Languages of Muğla University. There were 20 participants for each group; one group was taught the words in the reading texts explicitly, the other implicitly. A thirty-one-item pre-test was conducted to see if the students knew the target vocabulary. The experimental group received a four-week explicit vocabulary teaching. The control group encountered the target vocabulary once in the reading texts of the main course book. A post-test was

applied to both groups following the four weeks the experimental group received explicit vocabulary teaching. Eight weeks after the post-test, guided writing tasks were given to both groups to test if the students retained the target words or not. It was concluded that in both tests, the experimental group outperformed the control group. The study showed that repeated exposure to vocabulary by explicit teaching led the experimental group to learn and retain the target vocabulary better than the control group.

Related Studies

Much work on incidental learning, including our study, has focused on the vocabulary learned through reading. A number of studies have been carried out on the effects of reading tasks in vocabulary learning. To begin with, Knight (1994) carried out a research on university students in intermediate-level Spanish classes, the aim was to find out and compare the effect of dictionary access and no dictionary access on reading comprehension. For the study to investigate the effects of incidental learning, the students were instructed to read for meaning. After reading session was completed, subjects were first tested for reading comprehension and then given an unexpected vocabulary test on the targeted unknown words. The study indicated that those who had access to dictionary learned the most.

Hulstijn, Hollander, and Greidanus (1996) aimed to explore how the generally low incidence of incidental vocabulary learning can be improved. The study was carried out on Dutch advanced students of French. The subjects were assigned a text with words that appeared either once or three times. There were three reading conditions: marginal gloss, dictionary and control. Their hypothesis that frequency of occurrence enhanced incidental vocabulary learning more in the group either given the meanings of the unknown words through marginal glosses or the group that had access to dictionary would be more successful than the group with no dictionary access was supported.

Kost, Foss, and Lenzini (1999) investigated the effects of pictorial glosses, text glosses, and a combination of both. Subjects were from second-semester German classes and were tested on production and recognition of fourteen target words both right after and two weeks after the reading task. On the recognition of target words on both short-term memory and retention, subjects who used the combination outperformed the subjects under the other one-gloss conditions.

Wesche and Paribakht (2000) examined ten intermediate-level university ESL learners' responses to five types of text-based vocabulary exercises. The exercises were: selective attention, recognition, manipulation, interpretation, and production. The object was to identify how these exercises may promote different kinds of lexical processing and learning, and to compare the results with the results obtained from thematic reading for comprehension. The results supported that vocabulary acquisition is an elaborative and iterative process. The findings also showed that text-based vocabulary exercises are more advantageous than multiple reading texts for the learning of certain words.

Laufer and Hulstijn (2001) developed the Involvement Load Hypothesis in their study. They proposed a motivational-cognitive construct of involvement which consisted of three basic components: need, search, and evaluation. They graded these components and suggested the more the points an activity collects, the better vocabulary learning is. They also provided a table of more effective and less effective tasks on incidental vocabulary learning compiled from previous studies.

Keating (2008) tested the claim that vocabulary learning and retention of vocabulary in a second language depend on the involvement load of a task. The study was conducted on three groups of beginning learners of Spanish. The first group induced the meaning of the words, no effort, the second group were supplied the target words, moderate effort, and the third group wrote sentences with the unknown words, strong effort. It was concluded that the lowest retention occurred in the reading comprehension task, higher retention in reading plus filling-in, highest in the sentence writing task. In other words, the more the learners were involved in the task, the more the retention was.

Chen and Truscott (2010) conducted an experiment on 72 Mandarin-speaking intermediate-level freshmen majoring in English at two Taiwan universities to find out the effect of L1 lexicalization on incidental vocabulary learning. They investigated if the absence of L1 equivalent of a word made learning the meaning of it difficult. Ten target words, unknown to all the participants, were chosen from 100 potential target words. Five of the ten words were translated into the participants' L1 and five were not, and they were presented in the context of L2 texts. The participants were informed that they would take a reading comprehension test to prevent them from paying attention to the words. They completed a reading comprehension task, immediate post-test and delayed post-test two weeks later. The results of the study showed that non-lexicalized words caused great difficulty.

Yali (2010) explored the role of reading in the second language vocabulary learning, and the effect of different vocabulary teaching techniques on the vocabulary learning of 93 Chinese ESL students at university level. The participants, who did not know the real purpose of the study and who were informed that the experiment was about reading tasks and language learning, were civil engineering majors aging 18 to 21. They took a vocabulary size test, a vocabulary multiple-choice test and a writing test. The results of the study showed that a combination of both incidental and intentional learning instruction led to more vocabulary gains and higher retention than either incidental or intentional learning instruction.

Laufer and Rozovski-Roitblat (2011) investigated the effects of task type on retention of new words. The tasks were reading a text with occasional Focus on Form (FonF) when learners used dictionaries, or reading a text with Focus on Forms (FonFs), i.e. word focused exercises. FonF is drawing attention to words during communicative activities while FonFs is non-communicative, mainly decontextualized practice of vocabulary. They concluded that, for long-term retention, practicing new words in word focused activities (FonFs) led to better results than meeting them in a text and looking them up in a dictionary (FonF).

The meta-analytic study conducted by Huang, Eslami, and Willson (2012) aimed to provide a statistical synthesis of the effects of output tasks on incidental vocabulary learning. They analyzed twelve previous studies in terms of five mediator variables: design quality, types of output task, time-on task, genres of text, and text target word ratios. Results showed that language learners that completed an output task did better than those who only read a text. The Involvement Load Hypothesis was supported by the results. Language learners performing a task with a higher degree of involvement load gained more vocabulary.

In this study, the effects of three reading tasks on incidental vocabulary learning have been investigated: reading texts with a bilingualized dictionary, a gloss, and neither with a dictionary nor a gloss where the participants were expected to infer the meaning from context. In the chapters below, the methodology of our study, the results and the discussion of results will be provided.

CHAPTER 3

METHODOLOGY

Introduction

This chapter of the study presents detailed information about the research methodology applied and it comprises 5 main parts: research design, the study group of the research, data collection procedure, data collection instruments and the analysis of data.

Research Design

Our study was experimental as we administered different treatments and studied their effects. Fraenkel and Wallen (2005, pp. 7, 267-268) and Muijs (2004, p. 32) suggest that experimental research is among the most powerful research methods researchers can use, and that of the many types of research they might use, experiment is the most clear-cut of scientific methods and the best method to establish cause-and-effect relationships among variables.

Researchers might want to compare performance of the participants on more than one task. If all of the levels of the independent variable (the treatment) are crossed with (are administered to) all of the subjects (participants), that is if each individual does all the tasks in the study, the design is called one-way within-subjects, repeated measures or Treatment × Subjects (Gamst, Meyers & Guarino, 2008, p. 248; Mackey & Gass, 2005, p. 277).

In experimental studies, the independent variables are deliberately manipulated and controlled very tightly by the researcher to determine the effect on the dependent variable. This manipulation is often called the treatment and the researcher's goal is to find out whether or not there is a causal relationship among the variables. Most experimental

research compares a pre-treatment with a post-treatment performance (Brown & Dowling, 1998, p. 32; Mackey & Gass, 2005, pp. 137-138). In our study, the dependent variable is vocabulary learning and independent variables are (1) reading without a dictionary or gloss, (2) reading with a gloss, and (3) reading with a bilingualized dictionary, and the results of the pre-, post- and retention tests are compared and discussed.

The research conducted by Hulstijn et al. (1996) was taken as a model for the reading tasks for this study. The students were assigned one of the three following treatments: marginal gloss use, dictionary use and neither-dictionary-nor-gloss use. A pre-test, a post-test, and a retention test were administered. Outcomes of these three tasks and tests on vocabulary learning were analyzed with SPSS 18.0 and the most effective task was identified.

The study design for comparisons of methodologies by Schmitt (2010, p. 268) is followed in this study:

Pre-test	**→ Treatment**	**→ Immediate post-test**	**→ Delayed post-test**
or potentially no test if low-frequency or non-words are used	same amount of time and attention given to each method	optional, but shows whether treatment had an effect	Shows durable learning

The subjects were first administered a pre-test. Five weeks later, they took the three treatments, and the same amount of time and attention were given to each method. Right after the treatments, subjects were applied immediate post-tests. Finally, two weeks after the treatments and immediate post-tests, they took the delayed post-test.

In this design, acquisition is the difference between the delayed post-test scores and pre-test scores (Schmitt, 2010, p. 268), and we will discuss this in the next chapter.

Study Group of the Research

In our study convenience sampling was used. When it is very difficult or impossible to select either a random or a systematic nonrandom sample, a researcher may use convenience sampling which is rather common in second language studies. A convenience sample is a group of individuals who are available and easily accessible for the study (Berg, 2001, p. 32; Fraenkel & Wallen, 2005, p. 100; Mackey & Gass, 2005, p. 122). Instead of assigning individuals to groups randomly, whole schools or whole classes are

assigned to groups in educational studies because of practical and logistical issues (Lewin, 2005, p. 216). Convenience sampling is advantageous in terms of cost and convenience and it is probably the most common sampling method in educational research (Muijs, 2004, p. 40).

One of the two ways of comparisons of methodologies is to use the different techniques on the same group of students: the participants are totally the same for the different methodologies, and so have the same proficiency levels, aptitude and motivation (Schmitt, 2010, p. 178).

Sample population of this study was a class of EFL learners at a military academy, aging from 20 to 23. The participants had the same aptitude and motivation as a result of the academic education, military education and training they got throughout their academy life. They had the same proficiency levels: the subjects' linguistic level was pre-intermediate at the time. In order to identify the linguistic level of the cadets, Foreign Languages Department of the school administers a test after their admission to school, before the academic education begins. The language level of the students was identified as beginner by this test. I picked this class because of the above-mentioned reasons, and the practical and logistical issues.

Data Collection Procedure

Data is collected under controlled conditions in experimental studies; at least one independent variable is manipulated, other relevant variables are controlled, and the impact on the dependent variables is observed. The purpose of the control is to keep everything but the variables under investigation so that the changes in variables can attribute to the experimental results (Fraenkel & Wallen, 2005, pp. 267-269; Hua, 2011, p. 393; Lewin, 2005, p. 218), and it is suggested that there be at least 30 participants in each group, however, studies with only 15 individuals in each group can be defended if they are controlled very tightly (Fraenkel & Wallen, 2005, pp. 104-108; Lewin, 2005, p. 218). According to Mackey and Gass (2005, p. 124), research in general education can have access to and utilize bigger groups when compared to second language research. Thus, if the analysis technique takes the numbers into account, small groups are appropriate in second language studies on some occasions.

Three reading texts were selected from Flynn, Mackey, and Trites (2006). The data were collected through five tests. One pre-test, three parts of the post-test and one retention test were applied to the subjects by the researcher throughout the study. Table 1 shows the data collection procedure.

Table 1

Data Collection Procedure

5 Weeks Before the Treatment	Treatment Processes	Right After the Treatment	2 Weeks After the Treatment
Vocabulary Pre-Test	Reading without a dictionary or gloss	- Reading comprehension test - Vocabulary Post-test	Unannounced Vocabulary Retention Test
	Reading with a gloss	- Reading comprehension test - Vocabulary Post-test	
	Reading with a bilingualized paper dictionary	- Reading comprehension test - Vocabulary Post-test	

According to Schmitt (2010, p. 178), in a study which is designed to search for incidental vocabulary learning from reading, applying a pre-test to measure pre-existing knowledge of the target vocabulary is necessary. Considering this necessity, the researcher prepared a pre-test that included the target vocabulary. At the end of the first semester of the 2013-2014 Academic Year, 31 students were given 15 minutes to do a multiple choice test that included the potential target vocabulary. The test consisted of 30 items; 10 words per text. 6 items for each text in which the students showed the least success became subject to the vocabulary tests for the following reading treatments in the post-tests. The detailed numbers of each vocabulary item and the tests they were used in can be seen in Appendix 12.

In many second language studies, subjects are administered a pre-test before and an immediate post-test after the treatment so that the effects, if any, of the treatment on the participant group(s) can be compared (Mackey & Gass, 2005, pp. 148-149).

In our study, the post-test was composed of three parts. The first part of the post-test was applied after the students read the text without a dictionary or gloss, the second part of the post-test after the students read the text with a gloss, and the third part after the students read with a bilingualized paper dictionary. According to Read (2000, pp. 43-44), in

research where the aim is to test incidental vocabulary learning, subjects are given a reading or listening task; neither are they told to focus on the vocabulary in the input nor informed that they will be taking a vocabulary test after completing the task. Schmitt (2010, pp. 177-178) suggests adding some reading-based test element(s) to prevent the participants from guessing that the target of the study is vocabulary. Adding some extra words to the vocabulary post-test is useful to make the actual target items seem less evident. Thus, at the beginning of each treatment, the students were instructed to read for comprehension and told they would be given a reading comprehension test subsequent to reading tasks. Then they were given 10 minutes to read the texts that included the target vocabulary. 10 minutes later, five-item comprehension test handouts were delivered and students were given 5 minutes to answer these questions. The reason why the students were given a fairly limited time for this test was that the purpose of the study was to investigate the effects of the tasks on learning vocabulary, and reading comprehension questions were to distract the participants from the focus of the study. After they finished reading the texts and took the reading comprehension tests, both texts and comprehension test handouts were collected. Finally, the vocabulary tests were delivered, and students answered the vocabulary test questions in 10 minutes without the opportunity to refer to the texts. Every reading activity and the parts of the post-test were performed in the first week of the second semester, five weeks after the pre-test. Students did three reading activities, took three reading comprehension and three vocabulary tests at the end of this phase of the study. Only the vocabulary tests were evaluated and analyzed.

Second language researchers include delayed post-tests into the immediate post-tests in order to identify if learning really occurred, and to measure the longer-term effects of the treatment(s) in current studies (Mackey & Gass, 2005, p. 149; Schmitt, 2010, p. 268). Delayed post-tests are administered after the treatment(s) at pre-determined times and are compared with the pre- and post-tests. The advantage of delayed post-tests is that they provide the researcher with a wider view of the effects of the treatment; however, the researcher might lose participants (Mackey & Gass, 2005, p. 149).

In our research, in order to measure the long-term effects, an unannounced retention test that comprised the 18 target words was applied to evaluate the retention effect of the three tasks the students had been assigned in the previous phase of the study. The retention test covered the same test items that were included in the parts of the post-test, and was applied two weeks after the post-tests, and the students had 15 minutes to answer.

All of the data were collected in seven weeks. The class size was 36, five students were absent in each phase of the study meaning only 24 students took all of the five tests. The data gathered from these students were analyzed for comparison.

Data Collection Instruments

It is possible to carry out an experiment on only one group by administering all treatments to the same subjects, and compare the participants' performance on more than one treatment, condition or task (Fraenkel & Wallen, 2005, p. 268; Mackey & Gass, 2005, p. 277; Page, Braver & MacKinnon, 2003, p. 67). Participants are represented in each and every research condition in the study (Gamst et al., 2008, p. 248).

Three texts were chosen from an authentic reading material, which was suitable for the students' linguistic level, titled as Panorama 2: Building Perspective Through Reading (Flynn et al., 2006). A pre-test, three task-related post-tests, and a retention test were applied to the same subjects during the study. All the items in the tests were multiple choice questions.

Data collection instruments of the study are presented below.

Pre-Test

After I chose texts for the three treatments, I decided on which words to choose for the pre-test. Having chosen 10 words for each text, I prepared a 30-item test (see Appendix 1). The test was applied at the end of the first semester. The participants were given 15 minutes to complete the test. The vocabulary chosen for the pre-test were used in a different context than the upcoming post-tests in order to avoid the students with a good memory from recalling the words and their meanings. The results of the vocabulary test were analyzed, and 6 items for each text, a total of 18 items, which fewer participants answered correctly were chosen as the target vocabulary for three post-tests.

Table 2 shows the 30 potential target vocabulary, the reading tasks they would be used in, and number of the correct or wrong answers the 31 participants gave and left unanswered.

Table 2

Pre-Test Items

Pre-Test Item Number	Potential Target Word	Reading Task	Number of Correct Answers	Number of Wrong Answers	Number of Unanswered Questions	Number of Testees
1	preserve	dictionary	16	12	3	
2	convenient	gloss	15	15	1	
3	physician	inferring	8	21	2	
4	resident	dictionary	21	10	0	
5	wealthy	inferring	5	26	0	
6	operate	gloss	12	15	4	
7	disease	dictionary	13	16	2	
8	reduce	gloss	6	22	3	
9	client	inferring	9	17	5	
10	fragile	dictionary	11	20	0	
11	goods	gloss	6	23	2	
12	column	dictionary	4	23	4	
13	flood	inferring	18	9	4	
14	purchase	gloss	8	21	2	
15	bare	inferring	6	24	1	31
16	issue	gloss	9	21	1	
17	float	inferring	9	16	6	
18	harsh	dictionary	3	24	4	
19	surround	inferring	11	16	4	
20	track	gloss	2	27	2	
21	closet	inferring	5	22	4	
22	ancient	dictionary	20	8	3	
23	smooth	gloss	8	18	5	
24	condense	inferring	14	13	4	
25	ruin	dictionary	5	23	3	
26	complain	inferring	7	21	3	
27	outdated	gloss	14	12	5	
28	wear	dictionary	5	22	4	
29	commute	gloss	13	16	2	
30	hike	dictionary	12	19	0	

In order to choose the target vocabulary, the number of correct answers the students gave to each item was taken into consideration. The highlighted words indicate the 6 words in which the participants showed less success in each treatment. These words were identified as the target vocabulary to be used for the treatments in the post-test.

For the reading with no-dictionary-no-gloss task, the words *physician*, *wealthy*, *client*, *bare*, *closet* and *complain* were chosen as target vocabulary. *Reduce*, *goods*, *purchase*, *issue*, *track* and *smooth* are the words chosen for the task reading with a gloss. For the reading with a dictionary task, the chosen words are *fragile*, *column*, *harsh*, *ruin*, *wear* and *hike*.

A total number of 31 students took the 30-item pre-test. There were 10 potential target words for each reading task. It can be seen from Table 2 which vocabulary item is used in which reading task or treatment. Number of correct answers, wrong answers and unanswered questions indicate the number of students and their answers for each item, and when these numbers are added, the number of testees is gathered, which is 31. After this test was administered to the students, I graded the papers manually and transferred data into a table (see Appendix 13), and selected the highlighted words in Table 2 to be administered in the post-test five weeks later. As the study compares the effects of all the treatments on the target vocabulary, the test results of 24 students who took all of the tests are subjected to comparative analysis of the data (see Appendix 14).

Post-Tests

Ten potential target words for each treatment were chosen in the pre-test to be used as the target vocabulary in the post-tests for one of the following reading treatments: reading neither with a dictionary nor a gloss (inferring), reading with a marginal gloss provided (gloss), and reading with a bilingualized dictionary (dictionary). Five weeks after the pre-test, the post-tests were applied. Students read the text, took the reading comprehension test and were applied the vocabulary test respectively. The vocabulary items were used as in the context of the reading texts. Table 3 shows the procedure.

Table 3

The Post-Test Process

Post-Test	Type of the Reading Task	Name of the Text
1	Reading task with no-dictionary-no-gloss	The Farnsworth House
2	Reading task with the gloss	High-Speed Trains
3	Reading task with a dictionary	Machu Picchu

Post-Test 1: Reading Task with No-Dictionary-No-Gloss

The students were given the 525-word reading text "The Farnsworth House" (see Appendix 2) and they were instructed that they would have 10 minutes to read the text and take a reading comprehension test (see Appendix 3) afterwards. The participants completed the reading task without using a dictionary or gloss, they were expected to infer the meanings of the words from the context. When the time given for reading the text was over, I delivered the comprehension test and announced the participants that they had 5 minutes to answer the five-item test. After they answered the reading comprehension questions, both the text and the comprehension test were asked to be handed over. Finally, students were given the 10-item vocabulary test (see Appendix 4), six of which were target vocabulary and instructed to answer in 10 minutes.

The students were expected to infer the meaning of the unknown words from context. The results of this phase can be seen in Appendix 15.

Post-Test 2: Reading Task with the Gloss

The participants were given the 488-word reading text "High-Speed Trains" (see Appendix 5) and they were announced that they would have 10 minutes to read the text and take a reading comprehension test (see Appendix 6) afterwards. The students read the text with the gloss provided at the bottom of the page. When the time given for the reading task was over, I delivered the comprehension test and informed the students that they had 5 minutes to answer the five-item test. After they answered the reading comprehension questions, both the text and the comprehension test were collected. Finally, students were given the

10-item vocabulary test (see Appendix 7), six of which were target vocabulary, and 10 minutes to answer it.

The gloss that I provided contains 12 words, six of which are target vocabulary. The meanings of *car*, *convenient*, *commute*, *fare*, *issue*, *track*, *reduce* are taken from Cambridge Advanced Learner's Dictionary (2008); *smooth* (n.d.) from wordreference.com. The words *goods*, *operate*, *purchase* and *outdated* are compiled from different resources to provide the simplest explanation. The gloss is as follows:

car   : a part of a train used for a special purpose

convenient   : suitable for your purposes and needs and causing the least difficulty

goods   : heavy articles to be moved from one place to another

commute   : to make the same journey regularly between work and home

operate   : to work or make something work

smooth   : free from problems or difficulties

purchase   : to buy something

fare   : the money that you pay for a journey on a vehicle such as bus or train

issue   : a subject or problem that people are thinking and talking about

track   : the pair of long metal bars fixed on the ground at an equal distance from each other along which trains travel

reduce   : to make something smaller in size, amount, degree, importance, etc.

outdated   : no longer in fashion

The students were expected to refer to the gloss for the unknown words in the text while reading. You can see students' test results in Appendix 16.

Post-Test 3: Reading Task with a Dictionary

The participants were given the 521-word reading text "Machu Picchu" (see Appendix 8) and I told them that they had 10 minutes to read the text and then they would take a reading comprehension test (see Appendix 9). They read the text with the bilingualized *Students' Dictionary by Best-Chambers* (2012) provided by the researcher for every test-

taker. When the time given for the reading task was over, I handed out the comprehension test and informed the students that they had 5 minutes to answer the five-item test. After they answered the reading comprehension questions, both the text and the comprehension test were collected back. Finally, students were given the vocabulary test (see Appendix 10) that included the 6 target words, and 10 minutes to answer.

Below are the definitions and Turkish equivalents of the target vocabulary used in the reading-with-a-dictionary task. Best / Chambers Students' Dictionary (2012) defines the target words as follows:

fragile : *adj.* easily broken; kırılgan ve çabuk kırılan

column : *n.* a stone or wooden pillar used to support a building; sütun, kolon, direk

harsh : *adj.* very strict, cruel; sert, haşin, insafsız, acımasız

ruin : *n.* collapse; destruction, decay; enkaz, harabe, yıkıntı, kalıntı

hike : *n.* to go for a walk in the country; kırda uzun yürüyüşe çıkmak

wear : *v.* to become thinner etc because of use, rubbing, use etc.; eskimek, aşınmak, yenmek, yıpranmak

The students were expected to look up any unknown words in the dictionary while reading. Appendix 17 shows the results of this phase.

Retention Test

The same vocabulary tests in the post-test procedure were applied as the delayed retention test (see Appendix 11) two weeks after the post-test. The items in the retention test were the same as in the post-tests, but the order of the questions and options were different. The students were given 15 minutes to answer the questions. They did not have any access to a dictionary or the reading texts they had read before. The test results of every student can be seen in Appendix 18.

Data Analysis

In this study, the amount of vocabulary learning that takes place when students infer the meaning from context, read with the provided gloss, and consult a dictionary was

compared. As the study was experimental, experimental data were gathered and graded manually, and converted to the data appropriate for the Statistical Package for the Social Sciences Statistics (SPSS) 18.0 program. When there are different sets of results to be compared, repeated measures ANOVA is appropriate (Mackey & Gass, 2005, p. 277). Thus, the statistical results of the pre-, post- and retention tests were analyzed separately and statistical data of test scores were compared to see the differences, if any, among the treatments. Repeated measures ANOVA and t-tests in SPSS were used to compare the differences among the treatments and tests. The effects of all reading tasks on vocabulary learning, and correlation between the effects of these tasks were interpreted. Paired t-tests were used to examine the significance of differences between pre-, post- and retention tests. Totally three paired t-tests were used.

CHAPTER 4

RESULTS AND DISCUSSION

Introduction

In this chapter, the results of pre-, post- and retention tests are presented and interpreted. The results are compared, the result of each analysis is discussed in detail under the heading of each treatment and comparative explanations and comments related to the test results are made to show the effects of the three reading tasks on incidental vocabulary learning.

Results

The main purpose of this study was to find out the effect of

1- inferring meaning of new words without access to dictionary or gloss during a reading activity on vocabulary learning,

2- using the gloss during a reading activity on vocabulary learning,

3- using a dictionary during a reading activity on vocabulary learning.

Another research question was which of the following three reading treatments provoked incidental vocabulary learning the most:

a- reading without a dictionary or gloss,

b- reading with a gloss,

c- reading with a dictionary?

In addition, the correlations between the effects of dictionary use and gloss use; dictionary use and neither-dictionary-nor-gloss use, and dictionary use and neither-dictionary-nor-gloss use on vocabulary learning during a reading activity are analyzed and interpreted.

The highest mean possible is 6.00 in the following treatment results in Tables 4, 5 and 6.

No-Dictionary-No-Gloss

Table 4

Treatment 1- No-Dictionary-No-Gloss Results

	N	$\overline{X}$
Pre-test		1.17
Post-test	24	1.21
Retention Test		1.46

As Table 4 shows, when the means of the pre-, post- and retention tests were compared for the treatment reading-without-a-dictionary-or-gloss, it was concluded that the participants were more successful in the retention test than the pre-test and post-tests. The means of the retention, post- and pre-test are $M = 1.46$, $M = 1.21$ and $M = 1.17$ respectively. Thus, it can be said that when students inferred the meaning from context, they learned the words in the pre-test and remembered them and scored better two weeks after the treatment.

Gloss

Table 5

Treatment 2- Gloss Results

	N	$\overline{X}$
Pre-test		1.38
Post-test	24	2.67
Retention Test		2.54

Table 5 indicates that the highest mean belongs to the post-test with a figure of $M = 2.67$ in reading-with-the-gloss treatment. Then comes the retention test ($M = 2.54$), and the mean of the pre-test is the lowest ($M = 1.38$) of the three tests. The data show that after the participants did the reading activity with a gloss, they learned the new vocabulary they encountered in the pre-test. However, the results show that there has been a decrease in the retention of vocabulary two weeks later.

Dictionary

Table 6

Treatment 3- Dictionary Results

	N	$\overline{X}$
Pre-test		1.29
Post-test	24	1.83
Retention Test		2.04

Table 6 presents the means of the pre-, post- and retention tests for the treatment reading-with-a-dictionary. The highest mean is in the retention test with a figure of $M = 2.04$. The mean of the post-test is lower than the retention test $M = 1.83$, the lowest mean belongs to the pre-test: $M = 1.29$. When students used the dictionary provided by the researcher during the reading activity, they learned the new vocabulary and scored better five weeks subsequent to the pre-test. Data also show that the participants remembered the newly learned vocabulary two weeks after the reading treatment.

Comparative Results of the Treatments

Table 7 gives the breakdown of the test results of the 24 students who took all five tests. Numbers 1, 2 and 3 in the table represent the texts: The Farnsworth House (treatment: inferring), High-Speed Trains (treatment: gloss), and Machu Picchu (treatment: dictionary) respectively. The highest figure possible for each test is 6 and 18 for total.

Table 7

All Test Results of 24 Students

Student	PRE-TEST				POST-TEST				RETENTION TEST			
	1	2	3	Total	1	2	3	Total	1	2	3	Total
1	1	0	3	4	1	2	2	4	2	2	2	6
2	2	1	2	5	0	3	1	4	1	2	2	5
3	0	3	1	4	2	3	2	7	1	3	2	6
4	0	0	0	0	2	3	1	6	1	4	1	6
5	3	4	3	10	3	5	2	10	3	6	3	12
6	3	3	3	9	3	5	3	11	3	6	3	12
7	0	2	1	3	0	3	1	4	1	2	1	4
8	1	1	2	4	1	2	1	4	1	1	2	4
9	1	0	2	3	0	2	0	2	1	0	0	1
10	0	2	2	4	0	5	4	9	0	3	4	7
11	0	2	1	3	2	1	2	5	3	2	2	7
12	3	4	3	10	3	4	3	10	3	6	4	13
13	1	1	1	3	1	5	1	7	1	6	3	10
14	1	1	2	4	1	1	2	4	2	0	1	3
15	2	0	0	2	0	1	1	2	2	3	3	8
16	2	2	0	4	2	1	1	4	1	2	1	4
17	2	0	0	2	1	3	3	7	3	1	3	7
18	0	1	1	2	0	3	1	4	1	3	2	6
19	0	0	1	1	2	2	0	4	2	1	3	6
20	3	1	0	4	0	1	1	2	0	2	2	4
21	1	2	0	3	1	5	3	9	1	3	2	6
22	1	2	1	4	1	1	3	5	1	1	1	3
23	0	1	1	2	3	2	3	8	1	2	1	4
24	1	0	1	2	0	1	3	4	0	0	1	1
Total Number of Test Items	18				18				18			

Table 8 summarizes the results for each vocabulary item tested in the study. The highlighted items mean they were picked as the target vocabulary after the pre-test. In the first column are the vocabulary items and the treatments they were used in. The numbers in the parenthesis represent the treatment as 1-inferring; 2-gloss; 3-dictionary. The following columns show the test type, and the number of correct (C), wrong (W) answers the students gave and left unanswered (N) respectively.

Table 8

Results by Vocabulary Item

WORD (TREATMENT)	TEST	C	W	N	WORD (TREATMENT)	TEST	C	W	N
preserve (3)	Pre-	13	8	3	issue (2)	Pre-	8	16	-
	Post-	17	7	-		Post-	10	13	1
	Retention	16	7	1		Retention	12	11	1
convenient (2)	Pre-	10	13	1	float (1)	Pre-	7	12	5
	Post-	17	7	-		Post-	6	17	1
	Retention	16	8	-		Retention	4	18	2
physician (1)	Pre-	6	16	2	harsh (3)	Pre-	3	20	1
	Post-	2	22	-		Post-	3	21	-
	Retention	3	21	-		Retention	4	20	-
resident (3)	Pre-	15	9	-	surround (1)	Pre-	8	13	3
	Post-	9	15	-		Post-	4	20	-
	Retention	14	10	-		Retention	6	16	2
wealthy (1)	Pre-	2	22	-	track (2)	Pre-	2	21	1
	Post-	5	19	-		Post-	12	12	-
	Retention	6	18	-		Retention	10	13	1
operate (2)	Pre-	9	12	3	closet (1)	Pre-	4	18	2
	Post-	12	12	-		Post-	2	22	-
	Retention	9	15	-		Retention	4	20	-
disease (3)	Pre-	8	14	2	ancient (3)	Pre-	17	6	1
	Post-	13	11	-		Post-	18	6	-
	Retention	14	10	-		Retention	19	5	-
reduce (2)	Pre-	4	18	2	smooth (2)	Pre-	6	14	4
	Post-	6	18	-		Post-	8	15	1
	Retention	8	14	2		Retention	9	15	-
client (1)	Pre-	6	15	3	condense (1)	Pre-	11	10	3
	Post-	10	14	-		Post-	5	19	-
	Retention	11	13	-		Retention	6	17	1
fragile (3)	Pre-	8	16	-	ruin (3)	Pre-	4	17	3
	Post-	12	11	1		Post-	8	15	1
	Retention	15	9			Retention	7	17	-
goods (2)	Pre-	6	17	1	complain (1)	Pre-	5	17	2
	Post-	12	12	-		Post-	5	19	-
	Retention	11	13	-		Retention	6	16	2
column (3)	Pre-	3	19	2	outdated (2)	Pre-	12	8	4
	Post-	1	23	-		Post-	13	11	-
	Retention	2	21	1		Retention	15	8	1
flood (1)	Pre-	14	7	3	wear (3)	Pre-	4	17	3
	Post-	16	7	1		Post-	5	18	1
	Retention	19	5	-		Retention	5	18	1
purchase (2)	Pre-	7	16	1	commute (2)	Pre-	8	10	2
	Post-	16	8	-		Post-	18	6	-
	Retention	11	12	1		Retention	14	10	-
bare (1)	Pre-	5	19	-	hike (3)	Pre-	9	15	-
	Post-	5	19	-		Post-	15	9	-
	Retention	5	19	-		Retention	16	8	-

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The mean of the 30-item pre-test that 24 students took was 9.33, which was above all of the other test results. When 18 target words are taken into consideration, the mean is lowest in the pre-test with 3.83. This difference is the result of quitting the items the students were successful in. In this way, it was aimed to test the words the students knew the least. The mean of the 18-item post-test that the 24 students took is 5.67 while the mean of the retention test is 6.04. Table 9 shows the One-Way ANOVA results of the tests, and Tables 10, 11 and 12 show the correlations among the tests. It must be noted that although the pre-test was that of a 30-item, and 31 students took it, the data were analyzed according to the 18 target vocabulary and 24 students who took all the tests during the research.

Table 9

Repeated Measures ANOVA Results of the Tests

Source	Sum of Squares	df	Mean Square	F	p	Significance
Between Subjects	411.319	23	17.883			
Test Type	67.028	2	33.514	11.47	.000	2-1, 3-1
Error	134.306	46	2.920			
Total	612.653	71				

1: Pre-test,   2: Post-test,   3: Retention test

As seen in Table 9, there has been a significant difference among the results of the pre-, post- and retention tests, $F(2, 46) = 11.47$, $p < .05$. The significance is between the post- and pre-test, and the retention test and pre-test. Effect size is medium ($\eta^2 = .1$).

Table 10

Pre-Test vs. Post-Tests

	N	$\overline{X}$	S	df	t	p
Pre-test	24	3.83	2.53	23	-3.70	.001
Post-tests	24	5.67	2.68	23		

As $t(23) = -3.70$, $p < .05$, there is a statistically significant difference between the results of pre-test and post-tests. While the mean of the vocabulary test applied to the students before the reading treatments is $M = 3.83$, it is $M = 5.67$ after the treatments. Also, Cohen's effect

size value (d = .75) suggests a medium practical significance. It is concluded that the reading tasks helped students learn new vocabulary.

Table 11

Post-Tests vs. Retention Test

	N	X̄	S	df	t	p
Post-tests	24	5.67	2.68	23	-.79	.433
Retention Test	24	6.04	3.18	23		

The mean of the vocabulary test the students took right after the reading tasks is M = 5.67 and the mean of the retention test applied to students two weeks after the post-tests is M = 6.04. As $t(23)$ = -.79, p > .05, the data indicate that there is not a statistically significant difference between the results of the post-tests and the retention test. Further, Cohen's effect size value (d = .16) suggests low practical significance.

Table 12

Pre-Test vs. Retention Test

	N	X̄	S	df	t	p
Pre-test	24	3.83	2.53	23	-4.29	.000
Retention Test	24	6.04	3.18	23		

The mean of the pre-test is M = 3.83 while the mean of the retention test is M = 6.04. As $t(23)$ = -4.29, p < .05, the results reveal that there is a significant difference between the results of the pre-test and the retention test. Cohen's effect size value (d = .87) suggests a large practical significance, too. It can be concluded that the students retained the new vocabulary they first encountered in the pre-test. As in this design, acquisition is the difference between the delayed post-test scores and pre-test scores, we can conclude that acquisition occurred.

The correlations between the treatments are presented in Table 13, and it can be interpreted that there is a significant difference between reading a text neither with a dictionary nor gloss and reading with a gloss (p < .05), and between reading with a gloss and reading with a dictionary (p < .05). As we used an alpha level of .05 for all statistical tests, there does

not seem to be a significant difference between reading a text neither with a dictionary nor gloss and reading with a dictionary ($p > .05$).

Table 13

p-Value Between the Treatments

	p
No-dictionary-no-gloss – Gloss	.001
No-dictionary-no-gloss – Dictionary	.097
Gloss – Dictionary	.045

Table 14

Repeated Measures ANOVA Results of the Treatments

Source	Sum of Squares	df	Mean Square	F	p	Significance
Between Subjects	54.319	23	2.362			
Treatment	25.694	2	12.847	11.29	.000	2-1, 2-3
Error	52.306	46	1.137			
Total	132.319	71				

1: Reading with no-dictionary-no-gloss,   2: Reading with the gloss,   3: Reading with a dictionary

One-way within-subjects ANOVA was performed to test whether there was a difference of vocabulary learning between before-treatment and after-treatment conditions. Table 14 presents the results: there has been a significant difference among the results of reading with the gloss and reading neither with a dictionary nor gloss, and reading with the gloss and reading with a dictionary, $F(2, 46) = 11.29$, $p < .05$, and effect size is large ($\eta^2 = .19$).

The test results of the three treatments are presented in Table 15 and when the means (*M*) of the tests are compared, the results are as follows:

No-Dictionary-No-Gloss: Retention test > Post-test > Pre-test

Gloss: Post-test > Retention test > Pre-test

Dictionary: Retention test > Post-test > Pre-test

Note that ">" means better than

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Table 15

Treatments Analysis Results

Treatment	Test Type	N	$\overline{X}$	S	df
No-Dictionary-No-Gloss	Pre-test		1.17	1.09	
	Post-test		1.21	1.10	
	Retention Test		1.46	.97	
Gloss	Pre-test		1.38	1.24	
	Post-test	24	2.67	1.49	23
	Retention Test		2.54	1.88	
Dictionary	Pre-test		1.29	1.04	
	Post-test		1.83	1.09	
	Retention Test		2.04	1.04	

The mean of the treatment reading neither with a dictionary nor gloss $M = 1.21$ is lower than reading with the gloss $M = 2.67$ and reading with a dictionary $M = 1.83$. The data show that there is a significant difference between the treatments of reading with the gloss and reading neither with a dictionary nor gloss, and reading with the gloss and reading with a dictionary. However, there does not seem to be a significant difference between reading a text neither with a dictionary nor gloss and reading with a dictionary (see Table 13).

According to Huang et al. (2012), search and evaluation are the cognitive aspects of involvement; they both require focusing on word forms and meaning. When learners try to identify the meaning of an unknown word in a dictionary or by consulting a teacher, the attempt is called search. However, when an unknown word's definition is glossed, search is absent. This absence might be the reason of the decrease of mean in the retention test when students read with a gloss. The post-test scores are higher than the pre-test scores when students read with a dictionary, the task which required search.

Discussion

The aim of the study was to find out the effect of (1) inferring meaning of new words without access to dictionary or gloss, (2) using the gloss, and (3) using a dictionary during a reading activity on vocabulary learning.

When the mean values are compared and p values are taken into consideration, the findings of this study show that reading a text with a gloss provokes incidental vocabulary the most (*M* = 2.67). After the treatment reading a text with a gloss comes reading a text with a dictionary (*M* = 1.83). It is concluded that the least effective treatment is reading a text neither with a dictionary nor a gloss (*M* = 1.21).

This study also set out to find an answer to the following research question: Which of the following three reading treatments provoked incidental vocabulary learning the most: reading without a dictionary or gloss, reading with a gloss, or reading with a dictionary?

There is a significant difference between the treatment of reading with a gloss and inferring the meaning from context (*p* = .001). When subjects read a text with a gloss, they scored better in the vocabulary test compared to the other two treatments. In other words, it is found out that reading a text with a gloss is superior to reading a text with a dictionary and reading a text neither with a dictionary nor a gloss. The result of the current study is in line with the findings of some similar research. The study Hulstijn (1992) carried out on adult learners of Dutch to find out the more efficient and effective treatment showed that the subjects provided with a marginal gloss in their L1 scored better than those who had to infer the meaning of the target word from the sentence given in the margin. This study provides empirical evidence for Hulstijn et al.'s (1996) conclusions about the effectiveness of three reading conditions: marginal gloss, dictionary and control. Dutch advanced students of French read a French short story and randomly assigned to one of the reading conditions. The researchers concluded that subjects who read with a gloss or dictionary scored better than those of with no access to dictionary. Spahiu (2000) concluded in her study that glossing had an extremely positive effect on incidental vocabulary learning through reading. In the study, one group read without a glossary, the second with a bilingual (English-Turkish) glossary and the third with a monolingual (English-English) glossary. It was concluded that the groups who used glossary outperformed the group who did not use one. Yoshii (2006) examined the effectiveness of interactional L1 and L2 glosses on incidental vocabulary learning. There were 195 students from two universities and four groups in the study. The groups were: L1 text-only gloss, L2 text-only gloss, L1 text plus picture gloss and L2 text plus picture gloss. It was concluded that both L1 and L2 glosses are effective in enhancing learners' incidental vocabulary learning. The findings of the experiment Chen and Truscott (2010) conducted to find out the effect of L1 lexicalization on incidental vocabulary learning showed that subjects scored better when

they were provided with the translation of the words while non-lexicalized words caused them great difficulty. Although there are differences in research designs, the studies reviewed above confirm that incidental vocabulary learning occurs pointing to the advantage of using a gloss while reading.

In our study, participants scored better when they read a text with a dictionary than when they inferred the meaning from context. This finding is supported by previous studies in the literature. One of the similar results was achieved from the study that Knight (1994) conducted. The researcher's aim was to find out the effect of dictionary access and no dictionary access on reading comprehension. The subjects were randomly assigned to dictionary or non-dictionary condition. The study indicated that those who had access to dictionary learned the most. The subjects of the study Chen (2011) conducted read a text with a bilingualized dictionary, with an electronic dictionary or they did not have access to any kind of dictionary. It was found out that dictionary use is a more effective strategy of vocabulary learning than contextual guessing. However, in our study, the data show that there is not a statistically significant difference between the two reading conditions ($p = .097$).

Although there are differences in research designs, the studies reviewed above prove that incidental vocabulary learning occurs pointing to the advantage of using a dictionary or gloss while reading.

CHAPTER 5

CONCLUSION

Introduction

The intention of this study was to investigate the effects of reading tasks on vocabulary learning. In this chapter, a brief summary of the study is provided and the implications of the study are discussed. As a final point, suggestions for further study are presented.

Summary of the Study

This study aimed to find out which of the following three reading tasks is the most effective on incidental vocabulary learning: inferring the meaning from context, reading with a gloss, or reading with a bilingualized paper dictionary. Therefore, an experimental design composed of three phases was formed.

The participants of the study were pre-intermediate level students at a military academy, learning English as a foreign language in the academic year of 2013-2014. There were 36 students in the beginning of the study. 31 students took the pre-, post- and retention tests. However, when the data was evaluated, it turned out that 24 of the students took all of the tests. The data were analyzed according to the results of the students who took all of the tests.

Five tests were administered to the participants in order to conduct the study. To select the target vocabulary, a pre-test comprised of 30 items was conducted at the end of the first semester. 18 items, 6 for each treatment, in which students showed less success were chosen as target vocabulary. The participants completed three reading activities, and took

their comprehension and vocabulary tests five weeks later, in the first week of the second semester. Two weeks after the post-tests, a retention test was administered to the students.

One of the research questions was what the effects of using a dictionary, a gloss and inferring the meaning of new words from context during a reading activity on vocabulary learning was. It was concluded that reading with a provided gloss helps students learn the most. When they had a limited time, students did not prefer looking the vocabulary up in the dictionary since they were told that they would take a reading comprehension test. The test results also showed that they were not good at inferring the meaning from context. It was concluded that reading with a gloss is more effective than the other two treatments.

The other research question was which of the three reading tasks was the most effective. There is a significant difference between the task of reading with a gloss and the other two. However, the results of the statistical data showed that difference between inferring the meaning from context and using a dictionary is not significant.

The reason for investigating this topic was to help the learners and teachers save the time, energy and effort by identifying and applying the more effective strategies as vocabulary is a core component of language teaching and learning.

Implications of the Study

Several implications can be elicited for teachers, material writers, curriculum designers and researchers through this study.

First, teachers should realize the importance of vocabulary. They should take notice of appropriate tasks for their students' needs. If they want their students to retain the words they learn during a reading activity, they should prepare a gloss, or choose texts with a provided gloss.

While developing materials or designing curriculum, materials developers and curriculum designers should take into consideration the help of gloss and provide a gloss in the reading texts.

Results demonstrate that glosses and dictionary use have an extremely positive effect on incidental vocabulary learning through reading. In this research, it was found out that

during a reading activity using the provided gloss is more effective than using a dictionary or inferring the meaning from context in promoting incidental vocabulary learning.

Finally, the results of this study on the effects of reading tasks on incidental vocabulary learning will give insight into further studies on vocabulary teaching.

Suggestions for Further Research

This study was carried out to find out the effects of three reading activities on vocabulary learning. It is limited to a class of 24 military academy students at pre-intermediate level. Further studies can be conducted with a larger group of students in different language levels, with different treatments like using a monolingual dictionary, computerized dictionary or a bilingual gloss. As a retention test, participants might be asked to perform some productive tasks, such as writing a paragraph or recording speaking in a controlled environment. Also, instead of using meaningful vocabulary, made-up words can be used as target vocabulary.

This study was conducted in seven weeks. In order to see the long-term effects of the treatment, the time period can be extended. The gloss was replaced at the bottom of the text in this study. However, different locations of the gloss such as in the margin, or unmarking the glossed items may produce different results.

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APPENDICES

APPENDIX 1. Pre-Test

QUIZ

Fill in the blanks.

1. We want to **preserve** the character of the town while improving the facilities. To preserve does **not** mean to _____.

A) break	**C)** save	**E)** conserve
B) protect	**D)** secure	

2. A bike's a very **convenient** way of getting around. Convenient means _____.

A) tiring	**C)** cheap	**E)** suitable
B) fast	**D)** difficult	

3. He trained to be a **physician**, but his curiosity led him into a job doing basic research. Physician is a person who _____.
A) studies physics
B) likes studying science
C) works with animals
D) practices medicine
E) searches new information

4. The local **residents** were angry at the lack of parking spaces. Residents means _____.
A) shops
B) newspapers
C) citizens
D) politicians
E) lawyers

5. Early to bed and early to rise makes and man healthy, **wealthy** and wise. Wealthy means
_____.

A) happy   **C)** strong   **E)** lucky

B) clever   **D)** rich

6. How do you **operate** the remote control unit? In this sentence operate means _____.

A) to change   **C)** to fix   **E)** to press

B) to cause to work   **D)** to move aside

7. They reported a sudden outbreak of the **disease** in the south of the country. Disease
means_____.

A) fire   **C)** war   **E)** illness

B) earthquake   **D)** inflation

8. Reduce speed now. Reduce means _____.

A) to make something less

B) to accelerate

C) to pick up speed

D) to raise the rate

E) to increase the level of something

9. We always aim to give our **clients** personal attention, we consult them during the
production phase. Clients means _____

A) children   **C)** students   **E)** patients

B) buyers   **D)** attorneys

10. Be careful with that vase - it's very **fragile**. Fragile means _____.

A) expensive

B) breakable

C) dangerous

D) old

E) special

11. Tiger **goods** are much more valuable than leopard merchandise. Goods are _____.

A) skin of a cat   **C)** business products   **E)** mammal teeth

B) nice things   **D)** fur of an animal

12. The roof of the temple was held up by a row of thick stone **columns**. A column is a _____.

A) tall building

B) big box

C) small window

D) horizontal wall

E) vertical post

13. The whole town **flooded** when the river burst its banks. To flood means to _____.

A) explode noisily

B) buy something

C) pay for something

D) become covered with water

E) get dry in the sun

14. Tickets must be **purchased** two weeks in advance. Purchase means _____.

A) buy   C) plan   E) check

B) reserve   D) read

15. This is the **barest** room in the house. Bare is the opposite of _____.

A) decorated   C) empty   E) cold

B) large   D) spacious

16. Money is not an **issue**. Issue means _____.

A) motivator   C) power   E) everything

B) time   D) problem

17. An empty bottle will **float.** An object which floats does **not** _____.

A) explode   C) break   E) freeze

B) sink   D) move

18. The climate there is very **harsh.** Harsh means _____.

A) nice   C) severe   E) terrific

B) hot   D) beautiful

19. Crystal waters and pristine reefs **surround** the island. To surround means to _____.

A) free   C) lift   E) point

B) fill   D) ring

20. Passengers are requested not to walk across the **tracks**. Tracks are _____

A) corridors
C) roads
E) streets

B) grass
D) rails

21. He keeps some of his stuff in the **closet.** Closet means _____.

A) drawer
C) table
E) box

B) toilet
D) cupboard

22. The people in the village still observe the **ancient** customs of their ancestors. Ancient means _____.

A) recent
C) silly
E) boring

B) old
D) funny

23. We had a very **smooth** flight with no turbulence at all. Smooth means _____.

A) with security control

B) with a lot of problems

C) without adventure

D) with limits

E) without difficulty

24. Moisture in the air **condenses** to form tiny drops of water. To condense means _____.

A) to evaporate by boiling

B) to fly in the air

C) to change from a gas into a liquid

D) to become ice

E) to catch fire by accident

25. We visited a Roman **ruin**. Ruin means _____.

A) wreckage
C) museum
E) city

B) castle
D) amphitheatre

26. He works hard but he never **complains.** In this sentence **complains** can be changed with _____.

A) thanks to his friends

B) finishes work on time

C) tells his boss

D) writes a report about it

E) expresses displeasure

27. Nowadays this technique is rather **outdated. Outdated** means _____.

A) trendy   **C)** risky   **E)** cheap

B) old-fashioned   **D)** advantageous

28. The constant friction **wore** out the jeans. When jeans **wear** out, they become _____.

A) smaller

B) lighter in color

C) thinner

D) larger

E) darker in color

29. It's exhausting **commuting** from Brighton to London every day. **Commuting** is _____.

A) sending an e-mail

B) talking on the phone

C) having a conversation

D) travelling regularly

E) reading a newspaper

30. We spent the afternoon **hiking** around the lake. We can use _____ instead of **hiking.**

A) walking

B) running

C) cycling

D) skating

E) swimming

APPENDIX 2. Post-Test 1: Reading without a Dictionary or Gloss (Text)

THE FARNSWORTH HOUSE

Mies van der Rohe believed that a home could be more than just a place to live. He believed that a home could be a work of art. In 1946 he presented this idea to Dr. Edith Farnsworth, a wealthy Chicago physician, when she asked him to design a weekend home outside of the city.

Mies and Farnsworth were good friends. When the house was finished five years later, they were enemies. The architect and the client argued over form and function. Farnsworth was unhappy with both the house and the cost. The house cost $73,000. That equals half-a-million dollars in today's money.

From a distance the Farnsworth house looks like a rectangular glass box. The house is a single open room with glass walls. Like a skyscraper, simple steel columns support the house. The roof and the floor are flat concrete slabs. The house is near a river, and Mies was worried about flooding. To help protect the house from floods, he built the house five feet above the ground. With clear glass walls from floor to ceiling on all sides, the house seems to float above the ground.

Mies tried to build a house in harmony with nature. In cold weather the house is heated by special coils in the concrete floor. In hot weather the house is cooled by opening the doors and windows. This allows air to circulate through the only room.

Glass houses like this one have many problems. Because of all the glass, Farnsworth's heating bills were very high in winter. Also, water condenses on the cold surface of the windows and forms drops. In summer, the glass allows sunlight in, which heats up the room. Mies did not install air conditioning, and he did not put in screens to keep insects out. On hot summer nights, the lights from inside attracted thousands of mosquitoes. Farnsworth was also upset that there were no closets in the house. Mies told her that since it was a weekend house, she only needed to bring one dress!

Farnsworth called the house unlivable. Mies said it was a work of art. Mies would not let Farnsworth's complaints disturb his design.

Some say the Farnsworth house seems more like a simple Japanese temple than a home. The glass walls make it seem like one is living outdoors surrounded by nature. Other people find the house bare and lifeless. Dr. Farnsworth once said, "We know that less is not more. It is simply less!"

Dr. Farnsworth hated her new weekend home. In 1971, she finally sold it to a man who collects houses. The buyer knew that the house was a work of art. The new owner placed large fans in each corner of the room to keep the house cool in summer. On hot summer days he kept the doors and windows open. He lived there and did not complain about the insects. However, he only stayed in the house a few weeks each year.

Mies built a house that is in harmony with nature, but no one lives there anymore. Today the house stays open as a museum and a work of art.

APPENDIX 3. Post-Test 1: Reading without a Dictionary or Gloss (Comprehension Test)

A. Answer the questions according to the passage you have read.

1. What is the main topic of the passage?
A) how to choose an architect
B) problems between an architect and client
C) a house collector
D) homes of rich and famous people

2. Which of these statements describes Mies's feeling about a house?
A) It should be comfortable.
B) It should be a work of art.
C) It should have few windows.
D) It should be easy to heat and cool.

3. Why did Mies build the house above the ground?
A) He wanted it to float.
B) He was worried about floods.
C) He wanted harmony with nature.
D) He wanted to keep insects outside.

4. Which of the following was a problem with the house?
A) It was difficult to heat.
B) It had no water.
C) There were too many rooms.
D) The windows did not open.

5. Which of these statements describes the house collector?
A) He hated the house and tore it down.
B) He loved the house so much that he lived in it all year.
C) He sold the house back to Mies.
D) He did not agree with Dr. Farnsworth about the house.

APPENDIX 4. Post-Test 1: Reading without a Dictionary or Gloss (Vocabulary Test)

B. Choose the correct answer.

1. The architect and the **client** argued over form and function. Client means _____.
A) plan
B) buyer
C) patient
D) attorney
E) building

2. He lived there and did not **complain** about the insects. In this sentence complain can be changed with _____.
A) tell his landlord
B) finish work on time
C) write a report about it
D) express displeasure
E) thank to his friends

3. Dr. Edith Farnsworth was a Chicago **physician**. Physician is a person who _____.
A) works with animals
B) studies physics
C) likes studying science
D) searches new information
E) practices medicine

4. Water **condenses** on the cold surface of the windows and forms drops. To condense means _____.
A) to change from a gas into a liquid
B) to become ice
C) to fly in the air
D) to catch fire by accident
E) to evaporate by boiling

5. Farnsworth was also upset that there were no **closets** in the house. Closet means _____.
A) box
B) toilet
C) cupboard
D) drawer
E) table

6. Other people find the house **bare** and lifeless. Bare is the opposite of _____.
A) spacious
B) large
C) empty
D) decorated
E) cold

7. The house is near a river, and Mies was worried about **flooding**. To flood means to ___.
A) become covered with water
B) explode noisily
C) buy something
D) pay for something
E) get dry in the sun

8. The glass walls make it seem like one is living outdoors **surrounded** by nature. To surround means to _____.
A) free
B) ring
C) fill
D) lift
E) point

9. Dr. Edith Farnsworth was **wealthy**. Wealthy means _____.
A) happy
B) clever
C) rich
D) lucky
E) strong

10. With clear glass walls from floor to ceiling on all sides, the house seems to **float** above the ground. An object which floats does **not** _____.
A) move
B) break
C) freeze
D) explode
E) sink

HIGH-SPEED TRAINS

In the 19th century, trains were the best way to travel long distances over land. Trains were fast and **convenient**. Trains were also quite comfortable, many with sleeping **cars** and dining cars. However, in the 20th century, airplanes replaced trains for long-distance travel. Airplanes were even faster and more convenient than trains for most travel. Trains still transported **goods** over long distances, but passenger trains were mainly for local **commuting.**

Today, however, high-speed trains are attracting passengers again. France has a train called the TGV. TGV is French for "Train a Grande Vitesse," which means high-speed train. Typically, a TGV train **operates** at speeds up to 186 miles per hour (300 kilometers per hour). The ride is fast, and it is also very **smooth.** Passengers can travel from Paris to Marseilles in only four hours.

The first section of the TGV line between Paris and Lyon was completed in 1981. Since then, France has added several more TGV lines and has **purchased** more TGV train cars. This train system has worked well in France. Some TGV trains travel to other countries in Europe, such as Belgium. Passengers can go between the two capitals, Paris and Brussels, in just 90 minutes. Passengers can also travel much faster by TGV than by car.

The first country to have a high-speed train was Japan. The "Shinkansen" or "bullet" train offers a fast, smooth ride between Tokyo and other major cities.

This train operates at speeds up to 130 mph (210 kmh) and can travel between Tokyo and Osaka in just three hours. The first high-speed train route in Japan began in 1964. Now this train system connects many cities in Japan.

It is true that the **fare** on a high-speed train is more expensive than on a regular train. If a passenger wants to save time, a high-speed train is a good choice. If price is the **issue**, a regular train is less expensive. Both types of train still usually cost less than an airplane to travel the same distance.

Today, several European countries have some kind of high-speed train. South Korea and the United States also have high-speed trains.

In the United States, a high-speed train called Acela operates from Boston to Washington, D.C. via New York City. This route is popular because passengers arrive directly in the center of each of these major cities. The Acela trains are faster than regular trains, partly because they stop in fewer cities along the route. But the Acela trains don't travel as fast as high-speed trains in other countries. The train **tracks** along the route are designed for older types of trains. Because of these older tracks, the Acela trains have to travel more slowly.

Many of these high-speed train lines have **reduced** air traffic between cities. Increased train travel will also help reduce crowding at airports. What once seemed to be an **outdated** form of transportation is now in style again.

Glossary

car: a part of a train used for a special purpose

convenient: suitable for your purposes and needs and causing the least difficulty

goods: heavy articles to be moved from one place to another

commute: to make the same journey regularly between work and home

operate: to work or make something work

smooth: free from problems or difficulties

purchase: to buy something

fare: the money that you pay for a journey on a vehicle such as bus or train

issue: a subject or problem that people are thinking and talking about

track: the pair of long metal bars fixed on the ground at an equal distance from each other along which trains travel

reduce: to make something smaller in size, amount, degree, importance, etc.

outdated: no longer in fashion

APPENDIX 6. Post-Test 2: Reading with a Gloss (Comprehension Test)

A. Answer the questions according to the passage you have read.

1. What is the main topic of the passage?
A) faster type of airplanes
B) faster types of trains
C) the need for more highways
D) countries where people like to travel fast

2. High-speed trains offer _____ .
A) a dangerous ride
B) an uncomfortable ride
C) a slow ride
D) a smooth ride

3. Which of these is probably least expensive?
A) a ticket on a regular train
B) a ticket on a high-speed train
C) a ticket on an airplane
D) a ticket on a private jet

4. People in Europe _____ .
A) have had high-speed trains for only ten years
B) like plane travel more than train travel
C) use trains only for commuting to work
D) use high-speed trains frequently

5. It is possible that Acela trains will _____ .
A) travel faster on different tracks
B) no longer stop in New York City
C) replace subways and buses
D) become less expensive than regular trains

APPENDIX 7. Post-Test 2: Reading with a Gloss (Vocabulary Test)

B. Choose the correct answer.

1. In the United States, a high-speed train called Acela **operates** from Boston to Washington, D.C. via New York City. In this sentence operate means _____.
A) to change
B) to fix
C) to press
D) to move aside
E) to work

2. Since then, France has added several more TGV lines and has **purchased** more TGV train cars. Purchase means _____
A) check
B) buy
C) read
D) plan
E) reserve

3. Trains were fast and **convenient**. Convenient means _____.
A) difficult
B) slow
C) cheap
D) suitable
E) tiring

4. Passenger trains were mainly for local **commuting.** Commuting is _____.
A) sending an e-mail
B) reading a newspaper
C) having a conversation
D) talking on the phone
E) travelling regularly

5. The ride is fast, and it is also very **smooth.** Smooth means _____.
A) without adventure
B) with security control
C) without difficulty
D) with limits
E) with a lot of problems

6. What once seemed to be an **outdated** form of transportation is now in style again. Outdated means _____.

A) old-fashioned

B) risky

C) trendy

D) advantageous

E) cheap

7. The train **tracks** along the route are designed for older types of trains. Tracks are _____.

A) roads

B) streets

C) corridors

D) rails

E) grass

8. If price is the **issue**, a regular train is less expensive. Issue means _____.

A) time

B) motivator

C) power

D) everything

E) problem

9. Many of these high-speed train lines have **reduced** air traffic between cities. Reduce means _____.

A) to accelerate

B) to make something less

C) to pick up speed

D) to increase the level of something

E) to raise the rate

10. Trains still transported **goods** over long distances. Goods means _____.

A) metal

B) nice things

C) business products

D) skin of a cat

E) gold

APPENDIX 8. Post-Test 3: Reading with a Dictionary (Text)

MACHU PICCHU

The ancient village of Machu Picchu is one of the most popular tourist destinations in South America. It is in Peru, high in the Andes Mountains, 8,000 feet (2,400 m) above sea level. At one time, about 1,200 people lived in Machu Picchu. After the people left, the village was lost and forgotten for hundreds of years. Hiram Bingham, an explorer from the United States, found the ruins in 1911.

The Inca people built Machu Picchu about 500 years ago. The Incas knew how to make good use of the land. Machu Picchu fits the shape of the mountain. The Incas built the village this way to protect it from harsh weather.

The village contains 200 buildings. Houses are in groups, and each house has a large courtyard inside its walls. The Incas used the areas outside the groups of houses to grow corn and potatoes and to raise animals. The Incas were very good at building strong walls. Visitors to Machu Picchu still cannot fit a knife between the stones of a village home.

In the center of the village, the Incas built a tall stone column, called *intihuatana*. They held a special ceremony there every year before winter came. When winter comes, days become shorter. In their ceremony, the Incas tied the sun to the column. They wanted to hold the sun and keep the long days of summer.

Machu Picchu seemed to be a healthy, busy village. So why was it lost? That is a mystery, but experts have some ideas. Machu Picchu was hard to reach. Few people outside the village knew about it. Experts think that many residents died of disease. Others fought a war. The survivors left the village. When Spanish soldiers came to South America and attacked other Inca villages, Machu Picchu was already empty.

After Bingham found Machu Picchu in 1911, news of the beautiful village in the Andes traveled quickly around the world. Tourists soon followed. Machu Picchu was still difficult to reach. At first, tourists needed local guides to lead them on a four-day hike up a 27-mile (43 km) trail. Today, they can take a train or a bus. Tourists spend 40 million U.S. dollars every year in Peru to visit the famous ruins.

The tourists are good for Peru's economy, but they are not good for Machu Picchu. The village is old and fragile. Tourists damage the ruins. Thousands of footsteps from visitors wear down the walkways in the village. Salt and oil from people's hands damage the walls. Air pollution from buses hurts the stones. Tourists do not want to damage the village, but they want to see this beautiful, ancient place.

The Peruvian government and conservation groups are trying to solve the problem. A group from the United Nations wants to limit the number of tourists each year. They also want cars and buses to use cleaner fuel.

Machu Picchu is a wonderful place to study an ancient culture, but people must respect the land and village, like the Incas did. Everyone must help preserve Machu Picchu so that many more generations can visit Peru's "lost" village.

APPENDIX 9. Post-Test 2: Reading with a Dictionary (Comprehension Test)

A. Answer the questions according to the passage you have read.

1. What is the main topic of the passage?

A) an ancient city in Peru

B) a new city in Peru

C) tourists in Peru

D) the people of Peru

2. Which of the following statements is true?

A) Machu Picchu has courtyards with walls.

B) Machu Picchu is about 1,200 years old.

C) Machu Picchu is high in the mountains of Ecuador.

D) Machu Picchu is found at 800 feet (240 m) above sea level.

3. What probably happened to the people of Machu Picchu?

A) They died of disease.

B) They died in water.

C) They moved to other places.

D) all of the above

4. How do we know that Incas were good at building walls?

A) The Incas knew how to make good use of the land.

B) Visitors still cannot fit a knife between the stones.

C) Footsteps wear down the walkways in the village.

D) Hiram Bingham discovered the ruins in 1911.

5. Why does Machu Picchu need help from conservation groups?

A) Tourists are damaging the ruins.

B) Tourists want buses to use cleaner fuel.

C) Tourists must hike for four days to reach the ruins.

D) Tourists are good for Peru's economy.

APPENDIX 10. Post-Test 2: Reading with a Dictionary (Vocabulary Test)

B. Choose the correct answer.

1. In their ceremony, the Incas tied the sun to the **column**. A column is a _____.
A) small window
B) big box
C) vertical post
D) tall building
E) horizontal wall

2. Everyone must help **preserve** Machu Picchu so that many more generations can visit Peru's "lost" village. To preserve does **not** mean to _____.
A) save
B) secure
C) protect
D) break
E) conserve

3. Tourists spend 40 million U.S. dollars every year in Peru to visit the famous **ruins**. Ruin means _____.
A) city
B) castle
C) amphitheatre
D) museum
E) wreckage

4. The **residents** of Machu Picchu held a special ceremony every year before winter came. Residents means _____.
A) citizens
B) farmers
C) cows
D) politicians
E) ducks

5. Experts think that many people in Machu Picchu died of **disease**. Disease means _____.

A) earthquake

B) illness

C) inflation

D) fire

E) war

6. Machu Picchu is a wonderful place to study an **ancient** culture. Ancient means _____.

A) old

B) boring

C) silly

D) funny

E) recent

7. Thousands of footsteps from visitors **wear** down the walkways in the village. When walkways wear down, they become _____.

A) darker in color

B) thinner

C) larger

D) lighter in color

E) smaller

8. The Incas built the village this way to protect it from **harsh** weather. Harsh means _____.

A) terrific	C) severe	E) nice
B) hot	D) beautiful	

9. The village is old and **fragile**. Fragile means _____.

A) tired	C) dangerous	E) breakable
B) expensive	D) special	

10. At first, tourists needed local guides to lead them on a four-day **hike** up a 43-kilometre trail. We can use _____ instead of hike.

A) swim

B) run

C) cycle

D) walk

E) skate

APPENDIX 11. Retention Test

QUIZ

Fill in the blanks.

1. In the United States, a high-speed train called Acela **operates** from Boston to Washington, D.C. via New York City. In this sentence operate means _____.
A) to fix   **C)** to work   **E)** to press
B) to change   **D)** to move aside

2. He lived there and did not **complain** about the insects. In this sentence complain can be changed with _____.
A) tell his landlord
B) express displeasure
C) write a report about it
D) thank to his friends
E) finish work on time

3. The architect and the **client** argued over form and function. Client means _____.
A) attorney   **C)** plan   **E)** building
B) buyer   **D)** patient

4. The village is old and **fragile**. Fragile means _____.
A) breakable   **C)** dangerous   **E)** tired
B) expensive   **D)** special

5. Trains were fast and **convenient**. Convenient means _____.
A) suitable   **C)** cheap   **E)** slow
B) tiring   **D)** difficult

6. Water condenses on the cold surface of the windows and forms drops. To **condense** means _____.
A) to fly in the air
B) to evaporate by boiling
C) to change from a gas into a liquid
D) to catch fire by accident
E) to become ice

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7. The **residents** of Machu Picchu held a special ceremony every year before winter came. Residents means _____.

A) ducks   **C)** cows   **E)** citizens

B) farmers   **D)** politicians

8. Passenger trains were mainly for local **commuting.** Commuting is _____.

A) talking on the phone

B) travelling regularly

C) having a conversation

D) sending an e-mail

E) reading a newspaper

9. What once seemed to be an **outdated** form of transportation is now in style again. Outdated means _____.

A) trendy

B) old-fashioned

C) risky

D) advantageous

E) cheap

10. Experts think that many people in Machu Picchu died of **disease**. Disease means _____.

A) fire   **C)** inflation   **E)** war

B) earthquake   **D)** illness

11. Everyone must help **preserve** Machu Picchu so that many more generations can visit Peru's "lost" village. To preserve does **not** mean to _____.

A) break   **C)** conserve   **E)** save

B) secure   **D)** protect

12. Farnsworth was also upset that there were no **closets** in the house. Closet means _____.

A) box   **C)** table   **E)** drawer

B) cupboard   **D)** toilet

13. Machu Picchu is a wonderful place to study an **ancient** culture. Ancient means _____.

A) boring

B) recent

C) silly

D) funny

E) old

14. The train **tracks** along the route are designed for older types of trains. Tracks are _____.

A) roads   **C)** rails   **E)** streets

B) grass   **D)** corridors

15. If price is the **issue**, a regular train is less expensive. Issue means _____.

A) everything   **C)** power   **E)** motivator

B) time   **D)** problem

16. Other people find the house **bare** and lifeless. Bare is the opposite of _____.

A) spacious

B) cold

C) empty

D) large

E) decorated

17. Many of these high-speed train lines have **reduced** air traffic between cities. Reduce means _____.

A) to raise the rate

B) to accelerate

C) to pick up speed

D) to increase the level of something

E) to make something less

18. Dr. Edith Farnsworth was a Chicago **physician**. Physician is a person who _____.

A) works with animals

B) likes studying science

C) practices medicine

D) studies physics

E) searches new information

19. The house is near a river, and Mies was worried about **flooding**. To flood means to _____.

A) explode noisily

B) buy something

C) become covered with water

D) pay for something

E) get dry in the sun

20. With clear glass walls from floor to ceiling on all sides, the house seems to **float** above the ground. An object which floats does **not** _____.
A) sink
B) freeze
C) break
D) move
E) explode

21. Trains still transported **goods** over long distances Goods means _____.
A) nice things
B) skin of a cat
C) gold
D) business products
E) metal

22. The ride is fast, and it is also very **smooth.** Smooth means _____.
A) with security control
B) with a lot of problems
C) without adventure
D) with limits
E) without difficulty

23. Tourists spend 40 million U.S. dollars every year in Peru to visit the famous **ruins**. Ruin means _____.
A) amphitheatre
B) castle
C) wreckage
D) museum
E) city

24. Thousands of footsteps from visitors **wear** down the walkways in the village. When walkways wear down, they become _____.
A) lighter in color
B) smaller
C) larger
D) thinner
E) darker in color

25. At first, tourists needed local guides to lead them on a four-day **hike** up a 43-kilometre trail. We can use _____ instead of hike.

A) skate	C) cycle	E) run
B) swim	D) walk	

26. Dr. Edith Farnsworth was **wealthy**. Wealthy means _____.

A) lucky	C) rich	E) strong
B) clever	D) happy	

27. The glass walls make it seem like one is living outdoors **surrounded** by nature. To surround means to _____.

A) ring

B) free

C) point

D) lift

E) fill

28. Since then, France has added several more TGV lines and has **purchased** more TGV train cars. Purchase means _____ .

A) reserve

B) buy

C) plan

D) read

E) check

29. The Incas built the village this way to protect it from **harsh** weather. Harsh means _____.

A) beautiful

B) hot

C) nice

D) terrific

E) severe

30. In their ceremony, the Incas tied the sun to the **column**. A column is a _____.

A) horizontal wall

B) big box

C) small window

D) vertical post

E) tall building

APPENDIX 12. Item Numbers in Detail

WORD	PRE-TEST	POST-TEST			RETENTION TEST
		1	2	3	
preserve	1			2	11
convenient	2		3		5
physician	3	3			18
resident	4			4	7
wealthy	5	9			26
operate	6		1		1
disease	7			5	10
reduce	8		9		17
client	9	1			3
fragile	10			9	4
goods	11		10		21
column	12			1	30
flood	13	7			19
purchase	14		2		28
bare	15	6			16
issue	16		8		15
float	17	10			20
harsh	18			8	29
surround	19	8			27
track	20		7		14
closet	21	5			12
ancient	22			6	13
smooth	23		5		22
condense	24	4			6
ruin	25			3	23
complain	26	2			2
outdated	27		6		9
wear	28			7	24
commute	29		4		8
hike	30			10	25

APPENDIX 13. Results of Pre-Test (30 Words – 31 Students)

Nu	St's Nu.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	C	W	N
	Cor. Ans.	A	E	D	C	D	B	E	A	B	B	C	E	D	A	A	D	B	C	D	D	D	B	E	C	A	E	B	C	D	A			
	Text Nu.	3	2	1	3	1	2	3	2	1	3	2	3	1	2	1	2	1	3	1	2	1	3	2	1	3	1	2	3	2	3			
1	3745	E	B	D	C	C	N	N	C	N	B	A	D	D	E	B	E	N	N	N	A	N	N	N	C	A	N	N	N	N	A	7	10	13
2	3746	A	E	A	D	A	E	E	B	B	B	D	D	A	E	B	E	D	B	D	B	D	D	E	D	C	B	B	D	A	A	10	20	-
3	3749	D	A	E	C	C	B	D	E	D	C	C	D	D	A	D	D	E	E	A	C	B	B	N	C	N	B	N	B	B	A	9	18	3
4	3752	B	D	A	D	D	D	E	E	B	E	B	A	D	E	B	B	B	E	D	C	A	B	E	B	B	C	A	C	D	A	11	19	-
5	3755	A	E	A	A	C	A	E	C	D	D	A	D	D	B	B	C	C	E	C	A	B	B	B	C	C	B	B	E	C	D	7	23	-
6	3757	A	E	A	C	C	B	E	A	B	E	C	E	D	A	A	E	D	C	B	A	E	B	E	C	C	E	B	B	D	A	20	10	-
7	3816	A	E	A	C	D	B	E	E	B	B	C	D	D	E	B	D	B	B	D	D	E	B	A	C	A	E	B	D	D	A	21	9	-
8	3818	A	E	B	D	A	E	B	A	D	B	C	A	C	B	C	C	D	A	D	E	E	C	C	E	C	B	B	B	D	D	8	22	-
9	3820	C	E	A	D	B	B	B	D	D	C	D	E	D	A	A	E	B	E	A	C	B	B	B	C	D	B	B	E	C	A	11	19	-
10	3821	A	C	E	D	B	D	B	E	C	C	A	D	D	B	A	E	A	C	C	E	B	B	C	D	D	C	B	C	A	B	7	23	-
11	3823	A	N	N	C	A	B	N	N	E	B	C	N	N	N	D	D	N	B	N	N	E	B	C	N	A	N	B	N	N	B	9	7	14
12	3824	A	E	B	C	C	E	E	D	C	C	D	B	D	A	B	E	E	B	C	C	B	B	E	B	C	C	B	A	A	A	10	20	-
13	3825	A	E	A	C	D	B	E	A	B	B	C	D	D	E	C	D	B	C	D	C	B	B	E	C	A	E	B	B	D	D	22	8	-
14	3826	A	C	A	C	C	N	B	B	N	B	A	D	N	E	A	A	N	A	A	C	N	B	E	C	D	B	N	B	D	C	8	15	7
15	3827	A	E	A	C	D	B	E	C	B	B	B	D	D	A	N	N	B	N	D	A	B	B	A	C	A	E	B	B	D	D	18	9	3
16	3831	A	E	A	C	C	B	E	A	B	B	D	D	D	B	B	E	D	B	D	A	E	B	E	C	C	B	B	A	D	A	16	14	-

Item Nu.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Cor. Ans.		A	E	D	C	D	B	E	A	B	B	C	E	D	A	A	D	B	C	D	D	D	B	E	C	A	E	B	C	D	A			
Text Nu.		3	2	1	3	1	2	3	2	1	3	2	3	1	2	1	2	1	3	1	2	1	3	2	1	3	1	2	3	2	3			
Nu	St's Nu.	Student's Answer																														C	W	N
17	3835	B	E	D	C	B	D	E	D	E	E	B	E	E	C	A	D	E	B	C	C	D	A	A	E	B	E	D	E	A	A	10	20	-
18	3836	B	B	D	E	A	A	D	C	A	C	A	E	B	E	B	D	E	B	D	C	B	E	B	D	C	B	C	D	B	A	5	25	-
19	3837	A	E	A	C	D	E	E	N	N	B	N	N	D	N	B	B	N	N	D	N	N	N	A	N	C	B	N	N	B	D	7	10	13
20	3838	D	D	D	C	A	C	C	C	E	C	D	A	B	C	C	E	B	A	B	C	D	B	D	E	C	C	D	E	C	B	5	25	-
21	3839	B	C	D	C	E	B	D	C	E	E	D	B	B	B	E	B	E	D	B	E	C	D	B	B	B	D	E	E	D	B	4	26	-
22	3840	A	B	D	C	A	E	C	C	E	C	E	C	A	A	D	D	B	E	A	E	D	C	B	E	C	B	C	E	E	C	7	23	-
23	3841	N	B	D	C	C	E	E	E	B	C	A	D	D	B	C	C	B	B	D	C	B	B	A	C	E	B	C	D	D	B	10	19	1
24	3844	B	D	C	C	E	B	A	B	E	E	A	D	C	B	B	D	A	E	A	C	E	D	C	A	E	C	C	C	A	D	4	26	-
25	3846	D	E	B	B	C	C	B	E	D	C	E	A	D	B	D	E	E	B	A	E	B	D	C	D	C	B	A	N	E	A	3	26	1
26	3847	A	B	D	C	C	E	E	E	B	C	A	D	D	B	A	D	B	B	D	C	B	B	A	C	E	B	C	D	D	B	13	17	-
27	3848	A	E	E	D	C	B	B	E	C	C	A	C	D	B	D	E	E	E	C	D	E	B	E	B	B	E	B	E	B	C	9	21	-
28	3851	B	C	E	C	A	D	C	A	C	B	A	C	D	A	B	E	E	E	C	C	D	B	B	C	B	B	A	A	E	E	8	22	-
29	3852	N	D	E	A	E	B	A	E	C	E	N	C	C	A	B	E	N	B	N	A	B	B	N	N	N	C	N	C	D	D	5	17	8
30	3853	E	E	E	C	A	N	B	A	N	A	D	N	N	B	B	E	E	N	N	A	N	N	N	C	C	N	C	B	D	D	5	15	10
31	3857	N	B	N	C	C	N	D	N	N	A	B	N	N	B	C	E	N	B	D	C	B	B	N	N	N	E	B	C	E	E	6	13	11
Correct		16	15	8	21	5	12	13	6	9	11	6	4	18	8	6	9	9	3	11	2	5	20	8	14	5	7	14	5	13	12			
Wrong		12	15	21	10	26	15	16	22	17	20	23	23	9	21	24	21	16	24	16	27	22	8	18	13	23	21	12	22	16	19			
No Answer		3	1	2	-	-	4	2	3	5	-	2	4	4	2	1	1	6	4	4	2	4	3	5	4	3	3	5	4	2	-			
TOTAL		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31			

APPENDIX 14. Results of Pre-Test (18 Words – 24 Students)

	Item Nu.	3	5	8	9	10	11	12	14	15	16	18	20	21	23	25	26	28	30			
	Cor. Ans.	D	D	A	B	B	C	E	A	A	D	C	D	D	E	A	E	C	A			
	Text Nu.	1	1	2	1	3	2	3	2	1	2	3	2	1	2	3	1	3	3			
Nu	St's Nu.									St's Answer										C	W	N
1	3745	D	C	C	N	B	A	D	E	B	E	N	A	N	N	A	N	N	A	4	8	6
2	3746	A	A	B	B	B	D	D	E	B	E	B	B	D	E	C	B	D	A	5	13	-
3	3749	E	C	E	D	C	C	D	A	D	D	E	C	B	N	N	B	B	A	4	12	2
4	3755	A	C	C	D	D	A	D	B	B	C	E	A	B	B	C	B	E	D	-	18	-
5	3757	A	C	A	B	E	C	E	A	A	E	C	A	E	E	C	E	B	A	10	8	-
6	3816	A	D	E	B	B	C	D	E	B	D	B	D	E	A	A	E	D	A	9	9	-
7	3818	B	A	A	D	B	C	A	B	C	C	A	E	E	C	C	B	B	D	3	15	-
8	3820	A	B	D	D	C	D	E	A	A	E	E	C	B	B	D	B	E	A	4	14	-
9	3821	E	B	E	C	C	A	D	B	A	E	C	E	B	C	D	C	C	B	3	15	-
10	3823	N	A	N	E	B	C	N	N	D	D	B	N	E	C	A	N	N	B	4	7	7
11	3824	B	C	D	C	C	D	B	A	B	E	B	C	B	E	C	C	A	A	3	15	-
12	3825	A	D	A	B	B	C	D	E	C	D	C	C	B	E	A	E	B	D	10	8	-
13	3826	A	C	B	N	B	A	D	E	A	A	A	C	N	E	D	B	B	C	3	13	2
14	3836	D	A	C	A	C	A	E	E	B	D	B	C	B	B	C	B	D	A	4	14	-
15	3838	D	A	C	E	C	D	A	C	C	E	A	C	D	D	C	C	E	B	2	16	-
16	3840	D	A	C	E	C	E	C	A	D	D	E	E	D	B	C	B	E	C	4	14	-
17	3841	D	C	E	B	C	A	D	B	C	C	B	C	B	A	E	B	D	B	2	16	-
18	3844	C	E	B	E	E	A	D	B	B	D	E	C	E	C	E	C	C	D	2	16	-
19	3846	B	C	E	D	C	E	A	B	D	E	B	E	B	C	C	B	N	A	1	16	1
20	3847	D	C	E	B	C	A	D	B	A	D	B	C	B	A	E	B	D	B	4	14	-
21	3848	E	C	E	C	C	A	C	B	D	E	E	D	E	E	B	E	E	C	3	15	-
22	3851	E	A	A	C	B	A	C	A	B	E	E	C	D	B	B	B	A	E	4	14	-
23	3852	E	E	E	C	E	N	C	A	B	E	B	A	B	N	N	C	C	D	2	13	3
24	3857	N	C	N	N	A	B	N	B	C	E	B	C	B	N	N	E	C	E	2	10	6
Correct		6	2	4	6	8	6	3	7	5	8	3	2	4	6	4	5	4	9			
Wrong		16	22	18	15	16	17	19	16	19	16	20	21	18	14	17	17	17	15			
No Answer		2	-	2	3	-	1	2	1	-	-	1	1	2	4	3	2	3	-			
TOTAL		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24			

APPENDIX 15. Results of Post-Test 1 (6 Words – 24 Students)

Nu	St's Nu.	Item Nu. 1	2	3	5	6	9	C	W	N
		Cor. Ans. B	D	E	C	D	C			
		Student's Answer						C	W	N
1	3745	B	B	B	A	A	B	1	5	-
2	3746	E	B	C	B	A	A	-	6	-
3	3749	B	B	B	B	C	C	2	4	-
4	3755	B	B	B	C	B	B	2	4	-
5	3757	D	D	B	B	D	C	3	3	-
6	3816	B	D	B	B	A	C	3	3	-
7	3818	E	B	B	A	C	E	-	6	-
8	3820	E	A	B	B	D	B	1	5	-
9	3821	E	B	C	B	E	E	-	6	-
10	3823	E	A	B	B	B	A	-	6	-
11	3824	C	D	B	B	D	E	2	4	-
12	3825	B	D	B	B	C	C	3	3	-
13	3826	B	B	B	B	B	B	1	5	-
14	3836	B	A	A	A	E	B	1	5	-
15	3838	C	B	A	B	E	A	-	6	-
16	3840	B	B	A	B	D	A	2	4	-
17	3841	C	B	E	B	E	A	1	5	-
18	3844	A	B	A	A	B	E	-	6	-
19	3846	E	A	E	A	D	E	2	4	-
20	3847	C	C	B	B	A	E	-	6	-
21	3848	B	C	D	B	B	B	1	5	-
22	3851	E	B	D	B	A	C	1	5	-
23	3852	B	D	D	C	C	A	3	3	-
24	3857	E	B	C	A	B	A	-	6	-
Correct		9	5	2	2	5	5			
Wrong		15	19	22	22	19	19			
No Answer		-	-	-	-	-	-			
TOTAL		24	24	24	24	24	24			

APPENDIX 16. Results of Post-Test 2 (6 Words – 24 Students)

Nu	Item Nu. St's Nu.	2	5	7	8	9	10	C	W	N
	Cor. Ans.	B	C	D	E	B	C			
		Student's Answer						C	W	N
1	3745	B	N	A	N	B	A	2	2	2
2	3746	B	E	D	E	E	B	3	3	-
3	3749	B	E	D	E	D	A	3	3	-
4	3755	B	B	C	C	B	C	3	3	-
5	3757	B	C	D	E	D	C	5	1	-
6	3816	B	C	D	E	D	C	5	1	-
7	3818	B	A	D	C	E	C	3	3	-
8	3820	B	B	A	E	C	B	2	4	-
9	3821	B	B	C	E	D	B	2	4	-
10	3823	B	C	D	E	D	C	5	1	-
11	3824	D	B	D	C	E	A	1	5	-
12	3825	B	C	A	E	D	C	4	2	-
13	3826	B	C	D	E	A	C	5	1	-
14	3836	C	B	B	D	E	C	1	5	-
15	3838	B	D	C	A	A	B	1	5	-
16	3840	D	E	A	A	A	C	1	5	-
17	3841	B	C	D	A	A	B	3	3	-
18	3844	D	A	E	E	B	C	3	3	-
19	3846	D	D	D	A	C	C	2	4	-
20	3847	D	B	D	C	C	B	1	5	-
21	3848	B	C	D	D	B	C	5	1	-
22	3851	A	E	C	A	B	B	1	5	-
23	3852	B	C	A	B	C	B	2	4	-
24	3857	D	E	C	B	B	D	1	5	-
Correct		16	8	12	10	6	12			
Wrong		8	15	12	13	18	12			
No Answer		-	1	-	1	-	-			
TOTAL		24	24	24	24	24	24			

APPENDIX 17. Results of Post-Test 3 (6 Words – 24 Students)

Nu	Item Nu.	1	3	7	8	9	10			
	Cor. Ans.	C	E	B	C	E	D			
Nu	St's Nu.	\multicolumn{6}{c}{Student's Answer}		C	W	N
1	3745	A	N	N	A	E	D	2	2	2
2	3746	E	B	B	B	D	E	1	5	-
3	3749	E	C	A	A	E	D	2	4	-
4	3755	E	B	A	A	C	D	1	5	-
5	3757	E	E	A	B	D	D	2	4	-
6	3816	E	E	A	B	E	D	3	3	-
7	3818	A	A	D	B	E	C	1	5	-
8	3820	D	C	D	B	C	D	1	5	-
9	3821	D	A	D	A	D	C	-	6	-
10	3823	C	E	C	A	E	D	4	2	-
11	3824	E	C	E	A	E	D	2	4	-
12	3825	E	E	A	C	E	E	3	3	-
13	3826	E	D	A	A	E	C	1	5	-
14	3836	D	A	E	E	E	D	2	4	-
15	3838	E	C	B	A	D	C	1	5	-
16	3840	D	A	C	D	D	D	1	5	-
17	3841	E	E	B	A	E	C	3	3	-
18	3844	E	A	C	E	D	D	1	5	-
19	3846	D	D	C	B	N	C	-	5	1
20	3847	E	A	A	E	D	D	1	5	-
21	3848	E	E	A	E	E	D	3	3	-
22	3851	A	E	B	A	D	D	3	3	-
23	3852	D	D	D	C	E	D	3	3	-
24	3857	E	E	B	C	B	C	3	3	-
Correct		1	8	5	3	12	15			
Wrong		23	15	18	21	11	9			
No Answer		-	1	1	-	1	-			
TOTAL		24	24	24	24	24	24			

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APPENDIX 18. Results of Retention Test (18 Words – 24 Students)

	Item Nu.	2	3	4	12	14	15	16	17	18	21	22	23	24	25	26	28	29	30			
	Cor. Ans.	B	B	A	B	C	D	E	E	C	D	E	C	D	D	C	B	E	D			
	Text Nu.	1	1	3	1	2	2	1	2	1	2	2	3	3	3	1	2	3	3			
Nu	St's Nu.	Student's Answer																		C	W	N
1	3745	N	B	A	E	A	B	C	N	C	E	E	C	N	A	B	B	D	A	6	9	3
2	3746	E	B	A	D	C	D	A	A	E	A	B	D	D	C	D	E	B	B	5	13	-
3	3749	E	A	A	D	A	D	A	A	D	D	A	A	E	D	C	B	D	A	6	12	-
4	3755	E	E	C	B	D	D	D	E	D	A	E	B	E	D	E	B	D	A	6	12	-
5	3757	B	B	A	E	C	D	E	E	D	D	E	C	E	D	E	B	B	A	12	6	-
6	3816	B	B	A	D	C	D	A	E	D	D	E	C	E	D	C	B	B	A	12	6	-
7	3818	E	B	A	A	C	C	C	D	B	D	C	A	A	C	B	E	B	E	4	14	-
8	3820	A	E	A	D	A	B	E	D	D	A	C	A	A	D	B	B	B	E	4	14	-
9	3821	E	E	D	D	A	A	A	D	D	A	A	E	C	C	C	A	D	A	1	17	-
10	3823	A	C	A	D	C	D	D	C	D	D	A	C	C	D	B	A	D	D	7	11	-
11	3824	B	B	A	D	C	B	E	C	D	E	C	A	A	D	B	B	D	A	7	11	-
12	3825	B	B	A	D	C	D	C	E	D	D	E	C	D	A	C	B	E	A	13	5	-
13	3826	E	B	A	D	C	D	D	E	D	D	E	C	D	C	B	B	B	A	10	8	-
14	3836	E	B	B	D	A	C	E	A	A	A	D	D	C	D	B	C	B	C	3	15	-
15	3838	A	B	A	B	B	D	B	E	B	D	C	E	C	D	D	D	E	E	8	10	-
16	3840	E	D	B	A	A	C	C	C	C	D	A	D	E	D	B	B	A	A	4	14	-
17	3841	B	B	A	D	A	B	D	B	C	A	E	C	D	C	D	A	B	A	7	11	-
18	3844	B	C	D	A	C	B	A	E	A	D	A	D	C	D	E	A	E	A	6	12	-
19	3846	E	D	D	B	D	N	E	B	E	E	E	D	D	D	E	C	E	A	6	11	1
20	3847	E	D	D	D	A	D	C	C	D	D	A	E	B	D	E	N	C	D	4	13	1
21	3848	A	D	A	D	C	D	C	C	E	B	E	D	E	D	C	A	C	A	6	12	-
22	3851	N	D	A	D	A	B	A	E	D	A	B	A	A	C	C	E	B	C	3	14	1
23	3852	E	E	C	B	N	D	C	N	D	A	A	E	A	D	D	B	B	N	4	11	3
24	3857	C	C	D	D	A	E	A	C	D	B	A	E	B	D	B	D	C	E	1	17	-
Correct		6	11	15	4	10	12	5	8	3	11	9	7	5	16	6	11	4	2			
Wrong		16	13	9	20	13	11	19	14	21	13	15	17	18	8	18	12	20	21			
No Answer		2	-	-	-	1	1	-	2	-	-	-	-	1	-	-	1	-	1			
TOTAL		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24			

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