INCIDENTAL VS. INTENTIONAL VOCABULARY ACQUISITION: AN INVESTIGATION ON INPUT ENHANCEMENT AND WORD-FOCUSED TASKS

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Incidental vs. Intentional Vocabulary Acquisition: An Investigation on Input Enhancement and Word-focused tasks

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ABSTRACT

INCIDENTAL VS. INTENTIONAL VOCABULARY ACQUISITION: AN INVESTIGATION ON INPUT ENHANCEMENT AND WORD-FOCUSED TASKS

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Learning vocabulary has been one of the challenging topics in second language acquisition and the best means of achieving good vocabulary learning is still unclear. Reading has been considered an effective way for vocabulary learning. There have been major influential views on the learning of L2 vocabulary through reading. One approach promotes incidental vocabulary acquisition and claims that reading is the best and only way for vocabulary learning. Another approach suggests that input enhancement leads noticing and when learners notice the unknown words, they learn better. The third approach promotes explicit learning through vocabulary activities.

The present study was designed to investigate the roles and effectiveness of enhancement and word-focused activities in the vocabulary learning through reading. Specifically the study investigated whether typographical input enhancement and word focused tasks are favorable as compared to input only when reading for comprehension.

The participants were 150 first year students studying at Anadolu University Education Faculty English Language Teaching Department. They were given a vocabulary checklist before the treatments to make it sure that all participants were unfamiliar with the target words. The participants were randomly selected to be WFT, IE and IO groups. All groups read one text each week during eight weeks. Each text contained one target word which appeared six times. IO group read the

text and answered comprehension questions, IE group read the texts in which target words were underlined. WFT group read the texts answered the comprehension questions and they completed the vocabulary activities. All groups answered the form-recognition and meaning recognition tests as the last step of the process. On the ninth week, the participants were given the vocabulary checklist, which was given to them at the beginning of the study but this time for the purpose of form-recognition test to investigate whether they are familiar with the target words after treatments. Second, on the tenth week they were given the meaning-recognition tests with the purpose of checking whether they can recognize the meaning of the target words.

First frequencies and percentages of the participants' answers to the form–recognition and meaning-recognition tests were calculated for each group. Then means were calculated for each word in order to find whether there are statistically significant differences among the groups in the form-recognition tests and meaning-recognition tests. The data was then submitted to one way analysis of variance (ANOVA) to analyze the target word scores across the three groups for each target word. Later, a Tukey multiple comparisons test was performed to further analyze the target word form- recognition and meaning-recognition among three groups.

The analyses showed that all of the treatments have an effect on learner scores and results when learning an unknown word. One of the aims of the study was to explore which way ─ reading only, input enhancement and word-focused tasks ─ would promote word learning when learners read an L2 text for comprehension. Participants who carried out word-focused tasks outperformed the other two groups in the number of words recognized both in the form and meaning. Completing vocabulary activities appeared to have contributed to WFT group's significantly better performance than IE and IO groups on form-recognition and meaning-recognition tests. Completing a variety of vocabulary exercises seemed to have tapped different levels of processing capabilities such as recognition and interpretation. WFT group completed a variety of exercises during the instructional period so; they had more opportunities to consciously go through an elaborated mental processing of these words.

The post-test comparisons among groups showed that Word Focused Tasks group can best recall the target words. However, immediate and delayed post-test comparison results showed that Input Enhancement and Word Focused Tasks group scores were similar and no group recalled the target words. This result showed that although the initial learning was largely maintained throughout the study, completing vocabulary tasks did not end with the capacity to develop new, long-term phonological representations. Then for the new information to go from working memory to long-term memory, completing vocabulary exercises after reading for comprehension did not prove to be effective. It was concluded that in order to make it effective and to activate operations of sending information from working memory to long term memory, learning needs to be recycled.

Taking the grammatical form of target words into account, the study concluded that there is not a significant difference in the results when the target word is a noun or a verb. This showed that the grammatical form of the target word does not play an important role in the word learning, what is more important than grammatical form of the target word is whether to read just for comprehension or read the texts with input enhancement or complete vocabulary activities after reading.

ÖZET

RASTLANTISAL VE TASARLANMIŞ SÖZCÜK ÖĞRENİMİ: GİRDİ GELİŞTİRME VE SÖZCÜK AKTİVİTELERİ ÜZERİNE BİR ÇALIŞMA

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Sözcük öğrenimi, yabancı dil öğreniminin en zor yönlerinden biridir ve sözcük öğrenimi için en iyi yöntemler hala açık değildir. Okumanın sözcük öğreniminde etkili bir yol olduğu düşünülmektedir. Okuma yoluyla yabancı dil sözcük öğrenimi konusunda etkili temel görüşler bulunmaktadır. Bu görüşlerden biri rastlantısal sözcük öğrenimini desteklemekte ve okumanın sözcük öğrenimi için tek ve en iyi yol olduğunu ileri sürmektedir. Diğer bir yaklaşım girdi geliştirme yöntemini desteklemekte ve öğrenciler bilinmeyen sözcülerin farkına varırsa sözcüğü daha iyi öğrenirler görüşünü savunmaktadır. Üçüncü yaklaşım da sözcük aktiviteleri ile tasarlanmış öğrenmeyi savunmaktadır.

Bu çalışma okurken girdi geliştirme ve sözcük aktiviteleri tamamlamanın sözcük öğrenimindeki rol ve etkililiğini araştırmak amacıyla düzenlenmiştir. Çalışma, özellikle anlama için okurken, sadece okumayla karşılaştırıldığında girdi geliştirme ve sözcük aktiviteleri tamamlamanın sözcük öğrenimi açısından avantajlı olup olmadığını araştırmıştır.

Çalışmaya Anadolu Üniversitesi Eğitim Fakültesi İngiliz Dili Eğitimi Anabilim Dalında öğrenim gören 150 birinci sınıf öğrencisi katılmıştır. Öğrencilere TOEFL test verilmiştir ve İngilizce düzeyleri benzer olan öğrenciler çalışmaya seçilmiştir. Daha sonra sözcük bilgisi ölçeği verilmiş ve çalışmada kullanılacak sözcükleri hiç bilmeyen öğrenciler çalışmaya katılmıştır. Öğrenciler sınıflara daha önceden İngiliz Dili Eğitimi Anabilim Dalı tarafından yerleştirildiğinden bu sınıflar sadece veri (IO), veri geliştirme (IE) ve

sözcük aktiviteleri tamamlama (WFT) gruplarına rasgele ayrılmıştır. Bütün gruplar sekiz hafta boyunca haftada bir metin okumuştur. Metinlerin her biri, metinde altı kez kullanılan bir hedef sözcük içermektedir. IO grubu her hafta metni okumuş, anlama sorularını yanıtlamıştır. IE grubu metin içinde hedef sözcüğün altı çizili ve koyu renk yazılı olduğu metni okumuş ve anlama sorularını yanıtlamıştır. WFT grubu metni okumuş, anlama sorularını yanıtlamış ve sözcük aktivitelerini tamamlamıştır. Bütün gruplar daha sonra form tanıma ve anlam tanıma testlerini tamamlamıştır. Çalışmanın sonunda dokuzuncu hafta bütün gruplara çalışmanın başında verilen sözcük bilgisi ölçeği uygulamadan sonra hedef sözcüklerin formunu ne kadar tanıdıklarını bulmak amacıyla verilmiştir. Onuncu hafta sözcüklerin anlamını ne kadar tanıdıklarını bulmak amacıyla anlam tanıma testi verilmiştir.

Toplanan testler değerlendirildikten sonra form tanıma ve anlam tanıma testlerine verdikleri yanıtların yüzde ve frekansları hesaplanmıştır. Daha sonra gruplar arasında istatiksel olarak anlamlı bir fark olup olmadığını bulmak için mean hesaplamaları yapılmıştır. Daha sonra üç grup arasındaki sözcük öğrenimini değerlendirmek amacıyla one-way ANOVA ve Tukey test uygulanmıştır.

Analiz sonuçlarına göre her uygulamanın sözcük öğreniminde bir etkisi olmuştur. Çalışmanın amaçlarından biri sadece okuma, girdi geliştirme ve sözcük aktiviteleri tamamlama yollarından hangisinin sözcük öğreniminde etkili olacağını bulmaktır. Buna göre sözcük aktiviteleri tamamlamanın, çalışmaya katılan öğrencilerin sözcük öğreniminde diğer gruplara göre daha iyi performans göstermelerine etkili olduğu bulunmuştur. Sözcük aktiviteleri tamamlamak öğrencilerin farklı derecelerde öğrenme ve düşünme yeteneklerini tetiklemiş görünmektedir.

Öğrencilerin öğrenilen sözcükleri zaman içinde ne kadar akılda tuttuklarını bulmak için çalışmanın onunda verilen gecikmiş test sonuçlarına göre WFT grubu hedef sözcükleri en iyi hatırlayan grup olmuştur. Fakat ilk ve gecikmiş test karşılaştırmalarına göre bütün grupların sonuçları birbirine benzerdir ve hiçbir grup sözcükleri hatırlayamamıştır. Bu sonuca göre okurken sözcük öğrenmede sözcük aktiviteleri tamamlama yoluyla öğrenme süreci başlamıştır ancak uzun dönem ses dizimi betimleme kapasitesine erişilmemiştir. Öyleyse uzun dönem öğrenme için sözcük aktiviteleri tamamlamanın etkili olduğu

bulunmamıştır. Bu sürecin etkili olabilmesi için karşılaşılan sözcüklerin zaman zaman tekrarlanması gerekmektedir.

Sözcüğün dilbilgisi kategorisinin öğrenmede etkisi dikkate alındığında bu çalışmanın sonucuna göre sözcüğün fiil yada isim olmasının öğrenmede önemli bir farkı bulunmamıştır. Sözcüğün fiil yada isim olmasından çok hangi yolla öğrenildiğinin önemli olduğu sonucuna varılmıştır.

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TABLE OF CONTENTS **Page**

LIST OF GRAPHS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

L1- First language or mother tongue

L2- Second language/Foreign language

SLA- Second language acquisition

TW- Target word

VKS- Vocabulary knowledge scale

IO- Input Only

IE- Input Enhancement

WFT- Word Focused Tasks

CHAPTER ONE- INTRODUCTION

1.1 Introduction

Learning vocabulary is an essential part of mastering a second language (Schmitt, 2008) and it has been one of the challenging topics in second language acquisition (SLA). There is an agreement among vocabulary specialists that lexical knowledge is the heart of language learning (Coady, 1997; Coady and Huckin, 1997). Since vocabulary is considered as the heart of language learning, researchers are busy trying to provide more effective ways of teaching L2 vocabulary to second language (L2) teachers and educators. Learners also would like to know the ways to learn second language target vocabulary in a fast and easy way.

There have been important processes in learning any language. Language learning generally means learning how to speak, listen, read and write in that language. These skills can be classified as receptive skills and productive skills. Reading and listening are receptive skills and do not require the language learner to produce language, but learners mainly take in the information coming from outside, for language learning purposes (Brown, 2000). Moreover, one way of vocabulary learning both in the first language (L1) and second language (L2) is reading.

Reading has been accepted as a major way for vocabulary learning over the years (Dupuy and Krashen, 1993; Krashen, 1989, 1997). Krashen (1989) argues that reading promotes L2 vocabulary learning. In his study, Krashen (1989:455) emphasizes "comprehensible input" and states that reading provides comprehensible input for L2 vocabulary learning. Krashen (1989) notes that the results of incidental studies (Barnes, Ginther and Cochran, 1989; Herman, Anderson, Pearson and Nagy, 1987 cited in Krashen, 1989) support that comprehensible input alone can do all work for vocabulary. Krashen states his claim in the following way:

"My suspicion is that reading is not simply a way to develop vocabulary, spelling, and other important aspects of competence, it is the only way" (p.455).

Coady (1993) supports Krashen by stating that reading is essential for L2 vocabulary learning because less frequent words are only encountered while reading.

Hulstijn (2003) substantiates by stating that incidental learning has been suggested as the explanation for how L1 and L2 learners acquire a large vocabulary.

The basis of this line of research is drawn on input-oriented language acquisition theory, arguing that learners will make meaning-form connections while processing meaningful and contextualized input (Min, 2008). Therefore, this argument results in suggestions for large amounts of reading material to expose learners to vocabulary that they are going to learn.

However; there have been other researchers who claim that it is not an easy task to learn vocabulary by reading alone. Nagy (1997), for example, states that not all contexts provide clues that can help L2 readers infer the meanings of unknown words. According to Hirsh and Nation (1992) in order to comprehend any text adequately and infer the meanings of unknown words, a reader should know as many as 4000 word families in academic texts.

The researchers who support the argument that it is not possible to learn vocabulary just by reading claim that texts written by and for the native speakers may lead to comprehension difficulties for L2 learners. To overcome this difficulty, there have been attempts to make L2 texts comprehensible for L2 readers. In these attempts texts are subject to text modification. Within the text modification research, written input enhancement studies take place. Written input enhancement studies were initially originated by Schmidt's noticing hypothesis (1994) (explained in detail in the literature review chapter). In the written enhancement studies, certain linguistic features in a text are made salient to L2 learners with the purpose of increased comprehensibility and enhanced acquisition of certain features in the text. White (1998) notes that input enhancement has been used as an attention getting device for L2 form-focused instruction. Izumi (2002) argues that perceptual salience created by highlighting the input will draw the learner's attention to the highlighted forms. Once the learner's attention is drawn to the desired features, learning of the attended feature will occur.

Leeman, Arteagoitia and Fridman (1995) report that not all of the enhancements are noticed by all the participants and at least some learners prioritize meaning over form despite the emphatic instructions they have received.

So far, L2 written input enhancement studies have investigated the acquisition of L2 syntax (e.g. Izumi, 2002; Leow, 1997, 2001; White, 1998). Laufer and Hill (2000) used highlighting as a typographical input enhancement device in their CALL (computer assisted language learning) experiment and they stated that their purpose was to make the input more salient. Few studies have been reported focusing enhancement of vocabulary while reading for comprehension.

Another form of opposition to Krashen's (1989) claim that reading is the only way to develop vocabulary comes from Laufer (2003). Laufer (2003) opposes Krashen's claim stating that:
"I challenge some basic assumptions underlying the claim that reading is the major source of vocabulary acquisition in L2... (p.567). Reading alone is unlikely to be the best source of vocabulary acquisition. Word focused activities, whether they are combined with reading or not, play a crucial role in building the learner's lexical knowledge. Teachers have to look more critically at learning through reading and be more accepting of direct learning". (pp. 583-584).

Rott (1999) claims that in order to ensure a basic lexicon to advance beyond the basic requirement; learners should read for meaning under an enhanced condition. The enhanced condition refers to reading plus word-focused activities.

Laufer (2003) notes that word-focused activities may be more effective and less time consuming for vocabulary learning because they force the learners to notice the word.

This argument is based on an explicit (intentional) rationale for vocabulary learning. Schmitt (2008) claims that intentional vocabulary learning leads to greater and faster gains.

Given the brief overview of previous arguments above, today, there have been researchers who agree with incidental vocabulary acquisition which claims that as a form of input “Reading Alone” is sufficient for vocabulary learning.

Second group of researchers who support intentional vocabulary acquisition, think that reading promotes L2 vocabulary learning, but there is a need for other activities that accompany reading to promote L2 vocabulary learning. For these researchers, reading is necessary but not sufficient; in order to learn vocabulary, there is a need for either the use of word glosses, or dictionaries, or word-focused reading activities. With these activities, the learner notices the word, however; when reading a text, the word may go unnoticed or may not be guessed correctly.

Third, concerning the written enhancement studies in SLA, a group of researchers argue that if we make unknown items salient for the learners, they would notice the unknown items and thus better learn them.

1.2. The Purpose of the Study

In the light of the arguments and research above, the best means of achieving good vocabulary learning is still unclear, partly because it depends on a wide variety of factors (de Grot, 2006). In order to better explain how vocabulary can best be learned and taught, this quasi-experimental study was conducted to investigate the roles and effectiveness of enhancement and word-focused activities in the vocabulary learning through reading. Specifically, the study investigated whether typographical input enhancement and word focused tasks are favorable as compared to input only when reading for comprehension.

Considering the ways of data collection, the study was designed to measure form and meaning recognition, therefore; form and meaning recognition levels are referred to as vocabulary learning in this study. Productive level of vocabulary learning is not in the scope of this study due to limitations in the data collection.

Moreover, learners encountered nouns and verbs as target words while reading throughout the study. There may be an effect of grammatical class on word learning. Therefore, in order to find out whether there is an effect of grammatical class, gain and retention of nouns and verbs were compared for each group.

The results of the study may lead to some pedagogical implications such as contributing to the construction of effective instructional materials, reading lesson designs emphasizing word recognition as well as reading comprehension.

1.3. Research Questions

The study was designed to address the following research questions:

1. Which one of the following treatments leads to better form and meaning recognition of the target vocabulary?
    i. Input only
    ii. Input enhancement
    iii. Word focused tasks
2. If groups can retain the words within time, which group can best retain the learned words?
3. If there is an effect of grammatical form of the unknown word, which can be better learned?
    i. verb
    ii. noun

1.4. Significance of the Study

There have been major influential views on the learning of L2 vocabulary. The first approach promotes incidental vocabulary acquisition. The second approach suggests input enhancement and claims that when learners notice the unknown words, they learn better. The third one promotes explicit learning through vocabulary activities. As the debate over vocabulary learning suggests, L2 researchers, curriculum experts, and teachers have a need for a better understanding of this controversial issue. Also, many

language learners identify vocabulary as a major source of difficulty during their learning process; so, teachers need a sensible program to promote vocabulary growth. Moreover, as Waring and Nation (2004) state, in order to find out whether "simply reading" to master adequate vocabulary is true; we have to look closely at other methods. Data collected through empirical research is needed to determine the efficient ways to learn vocabulary. The main purpose of this study is to test whether reading is necessarily the main or the best way of learning vocabulary as suggested by many researchers who claim that it is. It is aimed to extend previous research and to provide more empirical evidence from EFL intermediate level learners' vocabulary learning and retention on the effectiveness of reading, reading plus word-focused activities and input-enhancement.

1.5. Definition of Terms

Incidental vocabulary learning: Vocabulary learning that takes place while an L2 learner is involved in reading and comprehension.

Input: The totality of information to which a learner is exposed.

Input Enhancement: Any of a number of possible manipulations, such as italics, highlighting, boldface that are used in texts to draw attention to specific items in the input. In this study, as one type of external input enhancement, boldface and underlining- which is termed as typographical enhancement- is used.

Intentional vocabulary learning: Vocabulary learning that takes place with an intentional effort of the learner to commit the words to memory.

Noticing: According to Schmidt (1995) this is synonymous with consciousness awareness. In this study, it is used as "attention to formal features in the L2 input".

Word-focused tasks or activities: In the present study, word-focused tasks and word-focused activities are used interchangeably and these include matching the words and definitions and filling in the blanks with the target words.

CHAPTER TWO- REVIEW OF LITERATURE

2.1. An Overview of Second Language Acquisition-Explicit and Implicit Learning

In order to make a good basis for understanding learning vocabulary through reading which is the focus of the current study, it is important to address broader issues of second language acquisition research. An important area under discussion in the SLA research has long been whether second language should be learned explicitly or implicitly (Pinar, Reynolds, Slattery, and Taubman, 1995). Michael Long (1997) discussed explicit or implicit L2 learning under three major approaches: Focus on Forms (FonFS), Focus on Form (FonF) and Focus on Meaning (FonM). According to Long's discussion of learning a second language, FonFS represents explicit learning, FonM represents implicit learning and; FonF combines some explicit and some implicit learning.

Long (1997) defines FonFS as instruction that focuses on specific grammar teaching where learners are engaged in linguistic structures in isolation. Explicit instruction is defined as direct and systematic instruction of new information and instruction that directly draws the awareness of learners to specific information to be learned (Lee, 2003).

According to Long (1997) FonF refers to form-focused activities which are not planned in advance but occur incidentally as learners' and teachers' predominant focus, during meaning-based lessons. Ellis, Baştürkmen and Loewen (2001) suggest that FonF can also be pre-planned.

Ellis (2001) also classifies form-focused instruction into three categories: a) FonFS where primary attention is paid to form (both explicit and implicit) b) planned FonF where primary attention is given to meaning but tasks are focused on specific L2 forms c) incidental focus on form where primary attention is devoted to meaning and attention can be paid to different L2 forms.

Norris and Ortega (2000) state that explicit learning involves both direct instruction (FonFS) and planned implicit instruction (planned FonF). According to Norris and Ortega implicit instruction involves unplanned implicit learning (FonM) and learning without having the attention directly drawn to the target information (incidental learning).

According to Stephen Krashen (1989) acquisition of language forms takes place when the learner pays attention to the meaning of the comprehensible input. For him, there is no need for explicit instruction of language items. His approach is associated with incidental second language learning.

Hulstijn (2003) states that many researchers agree that incidental and intentional learning can not be distinguished from explicit and implicit learning.

Doughty and Williams (1998) note that the term form must not be limited only to grammar points. According to them it should include all aspects of the L2, including vocabulary. In the case of L2 vocabulary learning, explicitness can be assumed when the learners are asked to pay attention or to use words that are new to them, or the underlined words, or the words learned in a previous learning session. These applications show explicitness in the sense that they are intentional, that is the teacher intentionally draws the attention of the learners to the learning of the unknown L2 words.

Laufer and Girsai (2008) propose that the notion of Form-focused instruction was developed in the context of grammar learning, but it can be extended to vocabulary as well. They provide the following examples: “When reading a text, or engaging in a group discussion, learners may come across unfamiliar words and look them up in a dictionary. This activity constitutes Focus on Form since the words, which are attended to, are necessary tools for task completion. Conversely, learners’ attention can be drawn to words in non-communicative, non-authentic language tasks, as in the case of matching words that were taught and are listed in column A to their definitions in column B, or filling in these words in given sentences, one word in each sentence. These are examples of FonFs in the sense that they entail teaching and practicing

discrete lexical items, which are treated as the objects of study and not as tools of language use" (Laufer and Girsai, 2008; 695).

In SLA research, FonM assumes that second languages should be learned incidentally just like the first language is acquired; that is, learners should learn while involved in doing other activities (Long, 1997).

The distinction between FonF and FonFs has been related to the teaching of grammar. However, the two instructional approaches can be adapted easily to vocabulary learning and teaching. FonF attends to lexical items within a communicative task environment, since these lexical items are necessary for the completion of a communicative or an authentic language task. FonFs, on the other hand teaches and practices discrete lexical items in non-communicative, non-authentic language tasks (Laufer, 2006; p.150). Laufer explains FonF and FonFs in relation to vocabulary with the following example: Learners may need to understand 10 unknown words when they read a text. In this case, looking the words up in a dictionary is Focus on Form, since these words are attended to in order to complete an authentic language task. However, the same 10 words may be presented with their L1 translations in a decontextualized list and supplemented by vocabulary exercises. In these tasks attending to the words is not connected with an authentic language activity (Laufer, 2006; 151).

In the present study, vocabulary is attended in three different situations: learners only read the texts; learners read the texts in which the target words are written in bold and underlined and they read the texts and complete two types of vocabulary exercises. Reading the text without dealing with vocabulary explicitly refers to the situation what Long (1997) calls FonM, that is, implicit learning. When the learners read the texts and complete two types of vocabulary tasks, attending to these words is not connected with a communicative or authentic task. These vocabulary exercises ask learners to a) match each word in column A to its definition in column B and b) fill in the words in the sentences, one word in each sentence. In this situation, words are objects of study, therefore; his situation refers to FonFs.

2.2. Vocabulary Knowledge

2.2.1. Vocabulary size: Vocabulary learning is defined as the storage of the phonological, morphosyntactic and semantic information of a word. In vocabulary investigation, there have been several questions that need to be considered. First of all, we need to determine the percentage of lexical items in written or spoken discourse that a learner should know. Even native speakers do not know all the vocabulary of their language. Research suggests that educated native speakers of English know around 20,000 word families (Nation, 2001). A word family includes a number of individual word forms- root form, inflections, and regular derivations (Scmitt, 2008). Regarding how many words a learner should know, recent research suggests that for written discourse 98% coverage is sufficient (Scmitt, 2008). Nation (2006) analyzed the Wellington Corpus of Spoken English, which included radio, interviews, and friendly conversation between family members and friends, and he calculated that 8000-9000 word families are required to reach the 98% coverage. In another corpus study, Milton and Hopkins (2006) reported that the highest level of the Common European Framework requires 4500-5000 word families. The Common European Framework (2001) describes learner performance expectations at different levels. The highest level descriptors for reading and vocabulary in the Common European Framework include: Learners can understand and interpret critically all forms of the language including abstract, structurally complex literary or non-literary writings; can understand a wide range of long and complex texts, can exploit a reliable mastery of a very wide range of language to formulate thoughts precisely and has a good command of a very broad lexical repertoire. Milton and Hopkins (2006) note that 4500-5000 word families would not be sufficient to achieve the stated goals.

Another concern in the vocabulary investigation is that whether the word in the text is high-frequency word, academic word, technical word or low-frequency word. The high-frequency words include many content words and function words. Academic words include many words that are common in different kinds of academic texts. Technical words are very closely related to the subject area of the text. Low-frequency words include all the words that are not high-frequency words, not academic words not technical words for a special subject (Nation, 2001).

In the light of corpus information above, we can note that learners must learn a very large number of lexical items to be successful language users. However, Laufer and Hill (2003) reported that vocabulary sizes of learners are much smaller than the size requirements that are stated in the research. For example, Japan EFL university learners' vocabulary size is 2000 according to Shillaw (1995). China English majors' vocabulary size is 4000 as stated by Laufer (2001). As the vocabulary size research indicates, principled approaches are needed in promoting vocabulary learning. This highlights the role of the researcher, who will be necessary in providing reliable information about vocabulary and effective methods of learning vocabulary (Schmitt, 2008).

2.2.2. Depth of vocabulary knowledge: Another important issue in vocabulary investigation is the quality or the depth of vocabulary knowledge. Knowing a word is not an all-or-nothing phenomenon, but it involves several different aspects of knowing (Nagy and Scott, 2000). According to Schmitt (2000) vocabulary learning manifests itself in a number of ways. Schmitt (2000; 4) notes that "We have all had the experience of being able to recognize and understand a word when we see it in a text, but not being able to use it ourselves. This shows that there are different degrees of knowing a word. Being able to understand a word is known as receptive knowledge and is normally connected with reading and listening. If we are able to produce a word of our own accord when writing or speaking, then that is considered productive knowledge. Moreover, a word's meaning must be learned before that word can be of any use".

According to Nation (2001) knowing a word involves:

a. being able to recognize the word when it is heard
b. being familiar with its written form so that it is recognized when it is met in reading
c. recognizing that it is made up of different parts and being able to relate these parts to its meaning
d. knowing that the word signals a particular meaning
e. knowing what the word means in the particular context in which it has just occurred

f. knowing the concept behind the word which will allow understanding in a variety of contexts
g. knowing that there are related words
h. being able to recognize that the word has been used correctly in the sentence in which it occurs
i. being able to recognize that there are collocations.

As Nation (2001) states there have been different degrees of knowing a word. Therefore, it is not possible to address all levels of word knowledge while measuring how much a learner knows a word. Considering Nation's (2001) word knowledge scale, the present study addresses reading and vocabulary learning and therefore, measures being familiar with its written form and knowing what the word means in the text it has occurred.

Moreover, Schatschneider, Harrell and Buck (2007: 252) argue that "Vocabulary or word knowledge refers to the ability to understand the meanings of words. To know a word is not an all-or-non proposition. People can have various degrees of understanding of a word, from "never heard it before" to "heard it but can't quite define it" to "can't define it, but can use it in a sentence" to "knows it extremely well in all of its nuanced meanings". The estimation of how well one understands a word is often referred to as depth of vocabulary and word knowledge is highly related to reading comprehension. In order to comprehend a text, it would be important to understand most, if not all, of the words in that text".

According to Phythian-Sence and Wagner (2007), "knowledge of a word has been conceptualized in alternative ways". They state Dale's (1965) conceptualizations of word knowledge:

stage 1: never saw it before
stage 2: heard it, but does not know what it means
stage 3: recognizes it in the context
stage 4: knows it well.

Concerning the steps of learning new words Hatch and Brown (1995) noted that a learner first encounters new words, gets the word form, gets the word meaning, consolidates word form and meaning in memory, and finally uses the word.

Similarly, Paribakht and Wesche (1999) stated five major stages that learners go through when they first encounter a word until they use it: Noticing the unknown word, assigning meaning to it, assimilating the new linguistic information, integrating it into second language system and using the new knowledge actively.

The scope of the present study does not consist of the last stage of Paribakht and Wesche's (1999) stages; that is, using the new knowledge actively because the participants read the words in the texts, however; it was difficult to give contexts in which the participants will produce these words. Therefore, because of the measurement limitations concerning unknown words, which are present in the texts "using the vocabulary actively" level could not be measured.

Moreover, there have been studies that considered lexical units that some part is known. For example, Bogaard (2001) conducted two experimental studies on the learning of different types of lexical units. In the first experiment, he compared learning of totally new lexical items with multiword items that are made up of familiar forms. He found in the immediate post-test that the scores for the multiword items were higher than items whose meaning and form were unknown. In the second experiment, he compared meaning-related units with meaning-unrelated units and totally new words. He found that in the immediate post test there is a significant difference between the cases in which there is a relationship and a totally new lexical item. Post-tests showed the advantage of knowledge of form: Meaning related and non-meaning-related senses of well-known forms were significantly better retained than totally new lexical units.

In the present study, consideration is on one lexical item as an unknown target word.

2.2.3. Receptive and Productive knowledge of a word: The arguments above suggest that before producing a new word, a learner first reaches the receptive comprehension of this new word. When the terms receptive and productive are applied to vocabulary, they cover all the aspects of what is involved in knowing a word. Nation (2001) states what is involved in knowing a word receptively and productively as in the following:

Form	spoken	R	What does the word sound like?
		P	How is the word pronounced?
	written	R	What does the word look like?
		P	How is the word written and spelled?
	word parts	R	What parts are recognizable in this word?
		P	What word parts are needed to express the meaning?
Meaning	form & meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	concept & referents	R	What is included in the concept?
		P	What items can the concept refer to?
	associations	R	What other words does this make us think of?
		P	What other words could we use instead of this?
Use	grammatical function	R	In what patterns does the word occur?
		P	In what patterns must we use this word?
	collocations	R	What words or types of words occur with this?
		P	What words or types of words must we use with this word?
	constrains on use	R	Where, when, and how often would we expect to meet this word?
		P	Where, when, and how often can we use this?

R: receptive knowledge, P: productive knowledge (Nation; 2001, 27)

According to this information, knowledge of a word can be categorized into three: Form, meaning and use. Each category is analyzed in different parts. Let us take the example word “teach”. If the learner can recognize when someone says, “teach”, can recognize the written form when he reads, “teach” and can understand that the word

“teach” does not have any affixes, it means that the learner has receptive form knowledge of the word “teach”. If the learner can pronounce the word “teach” accurately, can write the word correctly, and knows what parts of the word are needed to express it, this learner has productive form knowledge of the word “teach”.

If the learner can understand that the word “teach” signals to cause to know something or to make known or accepted, if the learner can think of other words like educate, instruct that mean the same as “teach” , we can say that the learner has receptive knowledge of the meaning of the word “teach”. Productive knowledge of meaning requires that the learner knows he can use these variations of the word if they are appropriate in the context.

Knowing that the word “teach” is a verb, it has no restrictions on its use, that is, it is not rude or formal word, is not restricted to a particular dialect or use shows learner’s receptive knowledge of use. As the productive knowledge of use, the learner knows in what context and how to use this word.

As the example shows, vocabulary learning may be receptive or productive and Nation (2001) states: “We need to see learning any particular word as being a cumulative process where knowledge is built up over a series of varied meetings with the word. At best, teaching can provide only one or two of these meetings. The others involve deliberate study, meeting through meaning-focused input and output, and fluency development activities”.

Schmitt (2008) states that the word knowledge table of Nation (2001) highlights the necessity of thinking of vocabulary learning in incremental terms. In order to develop mastery of the different word knowledge types, learners need a long-term recursive approach to vocabulary learning.

In the present study, learners meet the vocabulary, in Nation’s terms through meaning-focused input, that is, through reading the texts. Receptive knowledge of L2 vocabulary is manifested through reading and listening. In reception, the L2 learner takes in the

language without necessarily having the need to produce it. Therefore, this study is concerned with receptive knowledge of vocabulary.

2.2.4. Processes involved in knowing a word: Another issue in the matter of vocabulary learning is the process of learning. For the process of vocabulary learning, two hypotheses have been proposed. One hypothesis, which has been named as "explicit vocabulary learning", states that learners specifically focus on the process of learning words. Learners notice vocabulary, attend to it, use a variety of strategies to infer meaning from the context or complete some tasks to learn it. The second hypothesis, which is referred to as "incidental vocabulary learning", proposes that learners learn the vocabulary items without intending to do so. That is, they are busy with doing something else like reading or listening to someone but the memory for the new word comes as a natural result (Schmitt, 2000).

What is involved in knowing a word is given by the model proposed by Levelt (1989). This model is valuable because it helps making decisions about the teaching and learning of vocabulary and how the aspects of vocabulary knowledge fit into the process of language use (Nation, 2001).

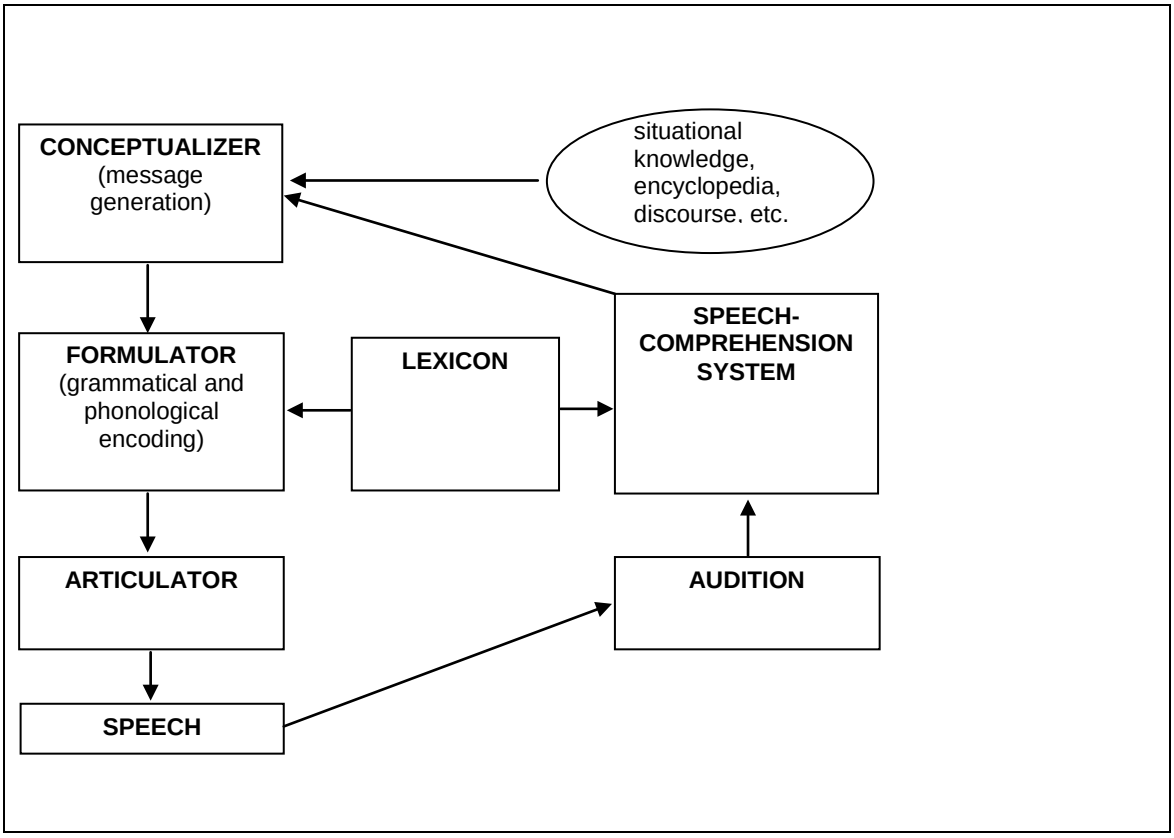


Figure1: Levelt's speech production model (Levelt, 1989)

In Levelt's model, there are three distinct levels of representation: the conceptual level, the lemma level, and the word form level. Each of these levels is central to the various forms of productive and receptive language use. A speaker's communicative intentions are formatted by the conceptualizer. Conceptualizer is the processing system that accomplishes the mental activities of conceiving an intention, selecting relevant information to be expressed, and ordering and monitoring the information (Levelt, 1989: 9). Its output is the preverbal message. The message fragments output of the conceptualizer is input for the formulator. Formulator changes the preverbal message into a phonetic plan through a process of selection of appropriate lexical entries and the application of grammatical and phonological rules. This process involves four kinds of lexical features: semantic, syntactic, morphological and phonological. The specifications of a lexical entry are represented at two different levels: the lemma and the lexeme. The lemma includes semantic and syntactic information. The articulator changes the process of conceptualizer and formulator into actual speaking. The other parts of the model are related to listening to what is being produced, comprehending, and using it to adjust further production (Levelt, 1989).

Levelt's model provides a good basis for the vocabulary investigation because first, the knowledge it contains is declarative. Declarative knowledge is examinable through conscious thought and reflection. Therefore, it can be build up through both incidental learning and formal study. Second, the choice of particular words determines the grammar and phonology of the sentences. Therefore, grammar and other aspects are important components of what it means to know a word. This is very important because it indicates the significance of meeting words in use as a way of developing vocabulary knowledge (Nation, 2001).

Another model of L2 incidental vocabulary learning has been proposed by deBot, Paribakht and Wesche (1997). This model is applicable to L2 incidental vocabulary learning through reading and it describes the learning of unknown words as they are encountered in a text. The model of deBot, Paribakht and Wesche (1997) is based upon the speech processing model of Levelt (1989).

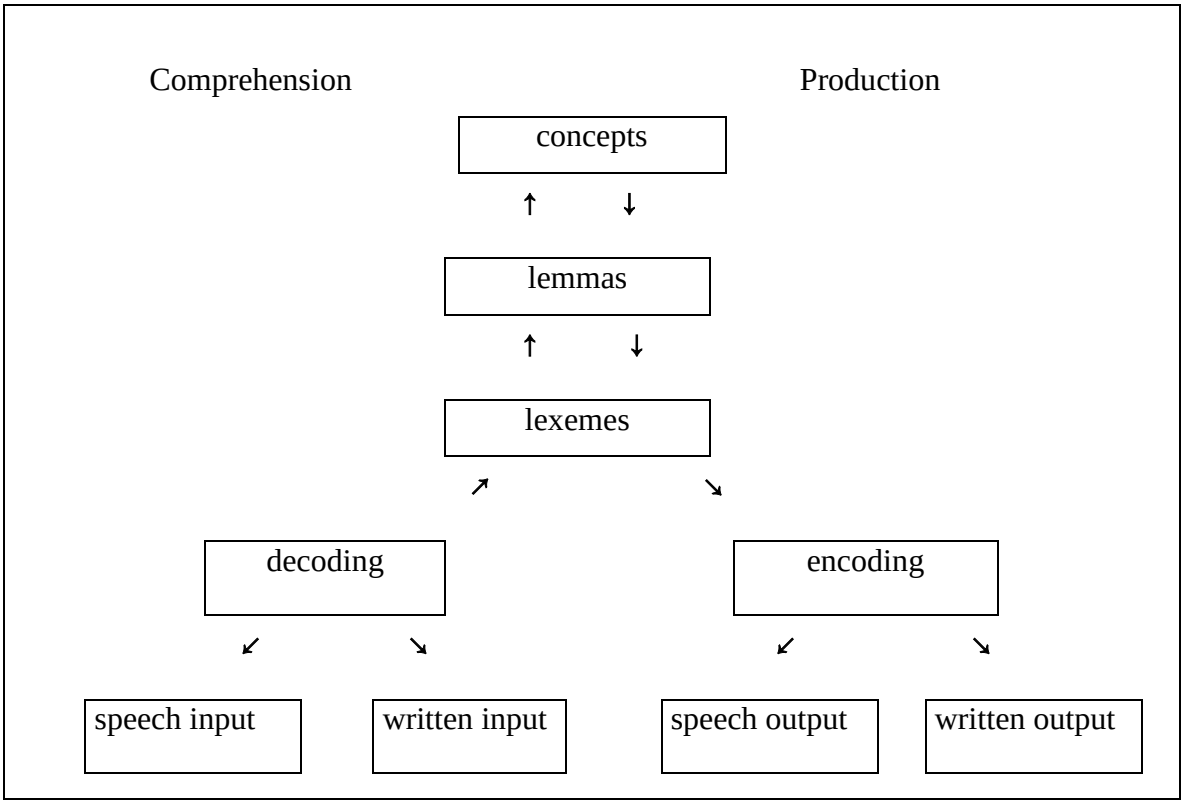


Figure 2: Lexical comprehension/production model (deBot, Paribakht and Wesche, 1997)

Lexical comprehension/production model for oral and written modalities (deBot, Paribakht and Wesche, 1997) shows that comprehension process in reading begins with written input. Letters that are read must be matched with a lexeme, which includes a lexical entry's morphological and form specification. When the string of letters has a lexeme, a lexeme-lemma connection is made. A lemma contains semantic properties and syntactic information for the lexical entry. After the lexeme-lemma connection is made, the lemma is matched with a concept for the comprehension at the word level. In the vocabulary learning through reading, according to the model proposed by deBot, Paribakht and Wesche (1997) learners match the semantic and syntactic information contained in the lemma to a concept while they are reading.

According to deBot, Paribakht and Weshe (1997) an important question is how word knowledge can be acquired from contextualized language input, such as in a reading text, without explicit vocabulary instruction. Such learning is determined by complex interactions of contextual, word, textual and learner factors. Learning from context involves three basic elements: learner processes of knowledge acquisition, contextual clues on which these processes operate, and moderating variables. Learner processes include selective encoding and selective combination of new information. Contextual clues include temporal, spatial and functional description cues. Moderating variables include factors such as number of occurrences of the unknown word and importance of the unknown word to understanding the context. Then the development of lexical knowledge depends on these factors: the word is judged by the learner to be of interest and learnable; the context in which it is presented must provide adequate information for its comprehension and it must be processed to a sufficient degree. In the light of these explanations, according to the model of deBot, Paribakht and Wesche (1997) the string of letters that are read has to be matched with a lexeme. When a match is made, this form must activate a lemma, which in turn must be matched with a concept if comprehension at the word level is to succeed. According to deBot, Paribakht and Wesche (1997) one important aspect in which comprehension differs from production is relevant to this process: in production all information is basically top-down, however; in comprehension there is an interaction between bottom-up information (letters or sounds) and top-down information (knowledge of the world, the discourse setting, the text, the sentences, etc.). In the interpretation of the text, both types of information are

used, and the learner has the possibility of internalizing at least some features of the new lexeme (deBot, Paribakht and Wesche, 1997:316).

The purpose of the present study is to investigate vocabulary learning through reading and it shows how vocabulary knowledge can be represented in terms of comprehension. The aim is not to show which language production model can best account for language production therefore; the written input-comprehension part of the model is concerned in the present study.

The participants read the texts and while reading they see the strings of letters, these letters have a lexeme and then lexeme-lemma connection is made. Then the lemma is matched with a concept. Production and output is not in the scope of the study because the participants read the texts and their lemma-concept matching for the unknown words is considered while reading for comprehension.

As Carlisle (2007) suggests, processing affects vocabulary learning and development and reading comprehension. Understanding this relation informs teachers about methods they might use to foster students' reading.

2.3. An Overview of L2 Vocabulary Learning

Vocabulary research first appeared in SLA research around 1970s (Anderson, 1973; Saragi, Nation and Meister, 1978). Holley and King (1971) investigated the use of glosses, Lippman and Shanahan (1973) conducted a study on interaction and use of pictures, Nation (1978) studied translation as a vocabulary learning technique.

In the 1980s vocabulary learning studies focused on guessing methods (Clarke and Nation, 1980), bilingual memory and mnemonics (Paivio and Lambert, 1981). 1980s were ended by Krashen's (1989) claim that "vocabulary and spelling can be learned by reading".

In the 1990s researchers continued to investigate learning L2 vocabulary and they added new topics. For example; Laufer (1992) searched difficulty of learning new L2

words; Dupuy and Krashen (1993) investigated learning L2 words explicitly or implicitly; Schmitt and Schmitt (1995) worked on vocabulary notebooks and they made suggestions for integrating vocabulary notebooks into classroom activities.

The focus has continued on reading with the 2000s but researchers have raised some doubt about the effect of reading on L2 vocabulary learning (Laufer, 2003).

In the history of L2 vocabulary learning, reading has always been an issue of interest, however controversy still exist whether reading alone promotes L2 vocabulary learning.

2.4. Incidental second language vocabulary learning through reading

The conditions and processes in the acquisition of vocabulary have been a core issue in the first language (L1) and second language (L2) acquisition research (Paribakht, 2005). It has been claimed that reading comprehension processes may offer some clues for the acquisition of vocabulary since reading is normally the main context for vocabulary acquisition (Paribakht and Wesche, 1997). The claim that reading is a major source of vocabulary growth is based on research showing that L1 learners are able to acquire L1 vocabulary while reading for meaning. Nation and Coady (1988); Herman, Anderson, Pearson and Nagy (1987); Konopak, Sheard, Longman, Lyman, Stanson and Atkinson (1987) have argued that vocabulary knowledge increases during reading for meaning. Nagy, Herman and Anderson (1985) concluded from their studies, which examined school children reading in their L1 that the learning of vocabulary is incremental and depends on repeated exposure. Acquiring vocabulary from input is justified in L1 because the number of words that people acquire in their L1 is too vast to be accounted for by direct teaching of vocabulary (Laufer, 2003).

Carlisle (2007) notes that learning an unfamiliar word begins when it is encountered in a written or oral context and when understanding that of the word matters to the reader or listener. If the word is encoded orthographically in written context or phonologically in oral context but no lexical representation is available, an inferential process is initiated such that cues from the immediate context of the new word are used to assign some sort of meaning. This process is called incidental word learning and it is the

primary way that people learn new words (Carlisle, 2007; 83). For example, according to what Carlisle says, when a learner encounters a word orthographically while reading a text and if he does not have a lexical entry for this word, he tries to infer its meaning to match this orthographic entry to a meaning. In order to infer the meaning, the learner makes use of context. Let us take the example "Do not eat that sour apple". When the reader first reads this sentence, he recognizes that he does not know what sour means. The context in which the word appears provides that sour is something unpleasant and the person who writes this does not approve the reader to eat it. If the reader reads the following sentence "There are sweet ones here", he can understand that sour is a word that is opposite of sweet. Further encounters with this word would lead to increased depth of knowledge about the meaning of the word. Thus, incidental learning draws on content analysis and is an incremental process.

Stahl and Nagy (2006) argue that words are tools we use to access our background knowledge, express ideas, and learn new concepts. The words the reader knows determine how well they can comprehend texts. Stahl and Nagy (2006) make a note of Stanovich's (1986) reciprocal hypothesis-that the relationship between vocabulary knowledge and reading comprehension goes in two directions. On the one hand, knowing more words would make one a better reader. On the other hand, being a better reader means that one reads more, and if person's vocabulary is gained through reading, better readers would develop larger vocabulary.

Second language researchers and practitioners have claimed that vocabulary is acquired through reading. Krashen (1989) and Coady (1993) argued that vocabulary must be acquired through reading and Coady (1993) stated that since less frequent items are encountered through reading, it is crucial for L2 vocabulary acquisition. There have been several basic assumptions underlying the claim that for L2 learners reading is a source of vocabulary acquisition; including the noticing assumption, the guessing ability assumption, the guessing-retention link assumption, and the cumulative gain assumption.

The noticing assumption: It is assumed that an unknown lexical item is noticed by the learner as an unknown word when it is encountered while reading for comprehension.

The guessing ability assumption: It is assumed that when an unknown lexical item is encountered while reading, the learner notices it as unknown item and decides to infer its meaning from context.
The guessing-retention link assumption: It is assumed that when an unknown lexical item is guessed, it would be retained.
The cumulative gain assumption: It is assumed that if an unknown lexical item is not remembered after the first exposure to it, the probability of retaining it would increase with additional encounters with the same lexical item.

2.4.1. The effectiveness of incidental vocabulary learning from reading: Accepting these assumptions, there have been studies, which support vocabulary acquisition through reading in a second language. For example, Day, Omura and Hiramatsu (1991) found that their participants who had been exposed to the text with target unknown words gained significant vocabulary. Pitts, White and Krashen (1989) replicated Saragi, Nation and Meister's (1978) L1 study in the L2 context. The original Clockwork Orange Study conducted by Saragi, Nation and Meister (1978) was half L1 and half L2 study because the participants were English and they read A Clockwork Orange, a novel in English containing 241 foreign words (Russian slang) which were used in the treatment. The researchers found that repeated words can be learned incidentally through extensive reading by encountering these words in the context, however; factors such as meaningfulness of the context affect the process of acquisition. They also concluded that minimum number of repetitions should be ten in order to acquire vocabulary. This study shed some light on the investigation of L2 vocabulary learning through reading.

Pitts, White and Krashen's (1989) replication of this study also gave similar results in the L2 context. They found that exposure to target words resulted in a significant gain of the L2 vocabulary. Zahar, Cobb and Spada (2001) also concluded that processing a word repeatedly in one or multiple texts contributes to incidental vocabulary learning.

Waring and Takaki (2003) conducted an incidental vocabulary learning study in order to find gains and retention for recognition and recall knowledge. In a classroom-based study, they investigated the rate at which vocabulary was learned from reading a graded

reader. Their subjects were fifteen Japanese females and they were asked to recall 25 substitute words immediately after reading, one week later, and three months later. Their results showed that subjects gained the meaning of 10.6 out of 25 words on an immediate multiple-choice test, but were able to translate only 4.6 out of 25 words. After three months, recognition of meaning score dropped to 6.1, the translation score dropped to 0.9. Waring and Takaki concluded that incidental vocabulary learning from reading is more likely to result in a partial rather than full level of mastery, and that any recall learning is more likely to lead to forgetting than recognition learning.

In a more recent study, Horst (2005) investigated 21 ESL learners reading in an extensive reading program during six weeks. The participants freely chose books that interested them. Horst examined vocabulary growth by using electronic scanning, lexical frequency profiles and individualized checklist testing. Her methodology was different from the previous studies because she measured the extent to which participants learned vocabulary in an entire extensive reading program. The results proved that participants learned over half of the unfamiliar words they encountered in their extensive reading program.

Pigada and Schmitt (2006) reported a case study of a learner of French. Their purpose was to investigate whether an extensive reading program could enhance lexical knowledge. Their concern was not only meaning but also spelling and recognizing grammatical characteristics of certain kinds of words. They used 133 words to examine during one month extensive reading program and they investigated the learning of spelling, meaning, and grammatical characteristics of the target words while the learner was engaged in reading four graded readers. They concluded that spelling was strongly enhanced and meaning and grammatical knowledge were enhanced less when compared to spelling. In general, 65% of the target words were gained.

Kweon and Kim (2008) claimed that second language vocabulary can be learned incidentally while the learner is engaged in reading for meaning. Their participants were 12 Korean learners of English who were reading authentic literary texts. The participants were tested on their knowledge of vocabulary before reading (pretest), immediately after reading (posttest 1) and, one month after posttest 1 (posttest 2). Their

results showed a significant word gain between the pretest and posttest 1. The gained words were retained at posttest 2.

Brown, Waring and Donkaewbua (2008) investigated English vocabulary acquisition by three different input modes: reading, reading while listening and listening. The researchers selected three sets of 28 words within four frequency bands. They administered two test types immediately after the reading and listening treatments, one week later and three months later. The results showed that new vocabulary could be learned incidentally in all three modes. They found that, on average, when subjects were tested by unprompted recall, the meaning of only 1 of the 28 items in either of the reading modes and the meaning of none of the items in the listening-only mode would be retained after three months.

Although the studies above have provided evidence for L2 vocabulary learning through reading, there have been concerns among researchers about reading only to acquire vocabulary, when the mentioned assumptions are taken into account: First, for the noticing assumption, it has been argued that L2 learners may not know how much they do not understand. They will not necessarily recognize unfamiliar words as unfamiliar (Laufer, 2003). Reasons for not recognizing unfamiliar words as unfamiliar may be different. For example, confusions may exist with words that have a deceptive structure like false cognates, homonyms. When a learner reads “adapt”, for instance, may perceive it as “adopt” rather than as an unfamiliar word (Laufer, 2003). Second, for the guessing assumption, it has been claimed that when a word is noticed as an unknown item, the learner may try to infer its meaning from context; however not all contexts provide clues for unknown words. For example, when the learner reads “I saw an X last night”, there is no way to know what or who X is (Laufer, 2003). Also, Nation and Coady (1988) argued that when the information in the reading text is rich, learners would comprehend the context and they would not attempt to learn the meaning of the unknown word; thus they would not try to infer the meaning of the unknown lexical item. Third, taking the guessing-retention link assumption into account, it has been suggested that as learners will ignore the unknown lexical items since they can comprehend the text, some of the unknown words will be guessed incorrectly. Also, most of the words which can be guessed with ease will not be retained (Laufer, 2003).

Fourth; for the cumulative gain assumption, it has been argued that even if learners are exposed to the same words many times, they would have to encounter these words under favorable conditions in each exposure; that is, they will have to understand the text, notice the new words, attempt the guess the words, be successful in their attempt to guess (Laufer, 2003).

The reasons that vocabulary acquisition through reading in an L2 may not be very efficient are also summarized by Hulstijn, Hollander and Greidanus (1996) as follows: Learners fail to notice the presence of unfamiliar words or they notice these words but ignore them. Second, the contextual context may be so rich that readers fail to connect the form to the meaning in the context, or meanings are not inferable from the context.

Concerning studies and arguments both for and against vocabulary acquisition through reading, it is clear that reading may result in word acquisition or it may become an unproductive process with learners making wrong inferences, learning wrong meaning or ignoring the acquisition of some words. Then Paribakht and Wesche (1997) argued that if systematic development of L2 vocabulary is desired, incidental vocabulary acquisition can not be left to the learners themselves. As the assumptions concerning vocabulary acquisition above suggest, learners need to notice the unknown lexical items in order to learn them. Gass (1988) argued that some level of noticing novel input features-whether conscious or not-is a necessary condition for new learning. Concerning vocabulary acquisition, Schmidt (2000), claimed that at least some degree of learners' attention is necessary for vocabulary learning.

2.5. Input enhancement - drawing learners' attention to target words

Awareness has been defined as "a particular state of mind in which an individual has undergone a specific subjective experience of some cognitive content or external stimulus" (Tomlin & Villa, 1994: p. 193). According to Schmidt (1990), attention is the mechanism that controls access to awareness, and awareness can be operationally defined as ability for verbal report. He distinguishes two levels of awareness: a low level, 'noticing', and a high level, 'understanding', which involves metalinguistic awareness. The Noticing Hypothesis posits that attention is necessary for noticing, and

that noticing is necessary and sufficient for intake, whereas understanding leads to deeper learning.

According to Schmidt's noticing hypothesis, awareness at the point of learning is required for all learning (Schmidt, 1995, p.27). The "noticing hypothesis" states that what learners notice in input is what becomes intake for learning (Schmidt, 1995, p. 20). SLA is largely driven by what learners pay attention to and notice in target language input and what they understand the significance of noticed input to be (Schmidt, 2001, p. 3 – 4).

As a way of helping draw L2 learners' attention to the formal features such as grammar and vocabulary of the L2 input they are exposed to, SLA researchers have investigated the role of enhanced input. Drawing learners' attention to target language forms in otherwise primarily meaning-communication oriented situations is expected to help learners to notice the gap between their interlanguage and the target language.

According to Schmidt's noticing hypothesis (1994) a set of pedagogical techniques to draw learners' attention to formal features in the L2 input has been called input enhancement (Sharwood-Smith, 1993). Input enhancement is expected to increase the chances that learners will pay attention to the targeted grammatical features. However, some aspects of language are noticed before others, or are not noticed at all. This is because they are "salient" in their context.

Han, Park, and Combs (2008) argue that L2 learners appear to ignore a vast sum of evidence and continue to operate with a system that is in contradiction with the target norms as manifest in the input. According to Han et al. (2008) the reasons are multi-faceted: "First, L2 learners lack sensitivity to grammatical features of target language input. Even when a large amount of input is available in their learning environment, they may not benefit from it. Second, certain grammatical features in the input to which learners are exposed are non-salient, and their presence escapes from the learners' attention. Thus, learners fail to benefit from input because of lack of noticing ability on the learner's part and poor input characteristics such as lack of perceptual salience or noticeability".

Schmidt (1990) hypothesizes that in order to stimulate input processing for form and meaning and therefore language learning, quality of input should be improved. The way of improving the quality of input can be "input enhancement" which is an operation where the saliency of linguistic features is increased, for example, color-coding, boldfacing, and underlining. According to Schmidt (1994) noticing is a prerequisite for learning.

Sharwood Smith (1990) suggests that "input salience can be created by an outsider (e.g. a teacher or researcher) or by an insider (i.e. the learners). Learners possess their own natural learning and processing mechanisms which can generate input enhancement. The learner's mind is not singular or global, but rather modular in character; the learner has many minds, different linguistic domains and subsystems. When exposed to externally enhanced input, learners may or may not notice it, or may notice it partially, depending on whether or not they are ready for it. Thus whether the enhanced input will ultimately trigger the relevant mental representation is an empirical question".

For example, reading a text for comprehension is a meaning-oriented situation. While reading the text, the learner's attention is on comprehension. While reading for comprehension, the learner may encounter unknown vocabulary and may not notice these words as unfamiliar. Thus, drawing learner's attention to these unfamiliar words may help him notice the words as unfamiliar. The present study, for example, uses eight target words; each target word appears six times in one text. In order to draw learners' attention to these words in the text, the target words were written in bold and underlined. (e.g: How can we **disentangle** the truth behind long life? Appendix A).

There have been studies concerning textual enhancement in SLA, most of which investigated targeted grammatical features. White (1998) used italics, bolding, enlarging to investigate English possessive determiners. It was found that the scores of the treatment groups increased significantly.

Doughty (1991) found that attention to form, either via detailed analysis of structure or highlighting of target language structures in context, promotes acquisition of interlanguage grammar.

Lee (2007) noted that textual enhancement aid the learning of the target forms while having unfavorable effects on meaning comprehension.

Concerning vocabulary acquisition, Kim (2006) conducted a study on typographical enhancement and input elaboration investigating whether lexical elaboration, typographical enhancement or both affected vocabulary acquisition. She found that typographical enhancement alone did not aid acquisition but both explicit and implicit lexical elaboration aided vocabulary gain.

However, not all the studies support that input enhancement is an effective way for the acquisition of target items. Leow (1997) used underlining and bolding for impersonal imperative forms of Spanish verbs. No effect for textual enhancement on form was found.

In another study, Leow, Egi, Nuevo and Tsai (2003) investigated the roles of textual enhancement and type of linguistic item in adult second language learners' comprehension and intake. Their results showed no significant benefit of textual enhancement over unenhanced input for the amount of reported noticing of Spanish present perfect or present subjunctive forms; learners' intake of the forms, or learners' comprehension of the reading passage. They concluded that there is a significant benefit of more salient forms over less salient forms for the amount of reported noticing of the targeted verb forms, but not for learners' intake or learners' comprehension.

Izumi (2002) investigated the facilitative effects of internal and external attention-drawing devices — output and visual input enhancement — on the acquisition of English relativization by adult English as a second language (ESL) learners. The study addressed: a) whether the act of producing output promoted noticing of formal elements in the target language input and affected learning of the form; and b) whether such output- induced noticing and learning, would be the same as that affected by visual

input enhancement designed to draw learners' attention to problematic form features in the input. Izumi found that participants, who engaged in output-input activities, performed better than those exposed to the same input for the sole purpose of comprehension. Moreover, the participants, who received visual input enhancement, failed to show measurable gains in learning.

Barcroft (2003) studied input enhancement and second language vocabulary learning with English-speaking L2 learners of Spanish. The participants studied lists of 24 new Spanish words along with their L1 translations in English. In experiment 1, one list of the words had 9 of 24 words enhanced, and the other lists were unenhanced. In experiment 2, one list of the words had 3 of 24 words enhanced and the other list was unenhanced. Four posttests were administered for immediate and delayed recall. Barcroft concluded that no effect was found for enhancing 9 out of 24 words on learning rates for the enhanced words; no effect was identified for enhancing 9 out of 24 words on learning rates for the unenhanced words and, a positive effect was noted for enhancing 3 out of 24 words on learning rates for the enhanced words based on some but not all dependent measures.

In sum, as Wong (2003) has noted, “the contribution of enhancement to SLA is presently not clear”. The literature has provided conflicting findings on its efficacy. The findings of previous research suggest that enhancement is either helpful or unhelpful. However, such an understanding is least desirable. From a theoretical standpoint, it neither validates nor invalidates the theory. From a practical standpoint, little can be inferred from the ambiguous findings. Moreover, it appears that there is a need for more data to shed light on the relation between vocabulary learning and input enhancement.

2.6. Intentional vocabulary acquisition and Word-focused tasks

Current definitions of implicit and explicit learning originate in the field of psychology; these definitions generally focus on the absence or presence of consciousness situations. Ellis (1994) defines implicit and explicit learning in the following way: “Implicit learning is typically defined as “acquisition of knowledge about the

underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operation", while explicit learning is said to be characterized by "more conscious operation where the individual makes and tests hypotheses in a search for structure" (Ellis 1994: 1).

As Doughty and Williams (1998) claim "the goal of explicit teaching is to "direct learner attention" whereas the aim of an implicit focus on form is to "attract learner attention" while minimizing any interruption to the communication of meaning. Implicit learning can only be incidental without learners' deliberate decision to commit information to memory".

In vocabulary acquisition, a distinction is frequently made which appears to correspond to the implicit/explicit debate: that of incidental vs. intentional vocabulary acquisition. Incidental vocabulary acquisition is generally defined as the "learning of vocabulary as the by-product of any activity not explicitly geared to vocabulary learning" and is contrasted with intentional vocabulary learning, defined as "any activity geared at committing lexical information to memory" (Hulstijn, 2001: 271).

From a cognitive psychology perspective, explicit learning can only be characterized as a conscious searching, building and testing of hypotheses and assimilating a rule following explicit instruction. Explicit vocabulary instruction includes studying decontextualized lexis or using dictionary. Implicit approach to vocabulary instruction primarily involves engaging students in meaning-focused reading. (Hunt and Beglar, 2005).

Schmitt (2008) argues that the currently favored language teaching paradigm highlights a focus on meaning-based learning, where language features are learned by using them rather than by focusing on them explicitly, but with a supplementary focus on language forms when necessary. However, there are reasons to believe that vocabulary requires a different approach which incorporates explicit attention to learning the lexical items themselves as Laufer (2003) suggests: a) learners who understand the overall message often do not pay attention to the precise meanings of individual words. b) guessing from context is often unreliable, if the learner does not know 98% of the words in the

context. c) words which are easily guessed from context may not generate enough engagement to be learned. d) new words which learners have met in context need to be met again relatively quickly to avoid their being forgotten.

Schmitt (2008) claims that the major reason for an explicit focus on vocabulary (intentional vocabulary learning) is that it is an effective way to learn vocabulary. Tang and Nesi (2003), for example, conducted a study on explicit focus on vocabulary. They compared the lexical environment of secondary school English language classrooms in Hong Kong and Guangzhou. Teacher output for one week of first-form lessons was recorded in two representative schools. The words that were explicitly taught were identified and categorized according to whether the teaching was planned or unplanned, and the teaching treatments that were used for these words were examined. The lexical richness of teacher output was found to be greater in the Hong Kong classroom than in the Guangzhou classroom. In the Guangzhou classroom more words were explicitly taught, but learners were exposed to fewer word types for incidental acquisition. In both classrooms, more unplanned words were explicitly taught. Teachers tended to teach planned words through multiple treatments, with various kinds of input, in different stages of the lesson. As a conclusion, they reported very low gains of words which were taught explicitly.

In L2 methodology and L2 vocabulary acquisition studies, focusing on learners' attention on vocabulary learning has taken different forms. Hulstijn (2003) noted that there is a continuing debate among teachers and learners on whether to learn words in monolingual or bilingual lists, whether it is better to give words in lists or in context. A number of studies have investigated the effectiveness of vocabulary learning techniques.

The technique most studied is keyword method involving the use of memory-facilitating words designed to help the learner make a link between the form and the meaning. The keyword method is a two-stage procedure for remembering materials that have an associative component. In the case of foreign vocabulary learning, for example, the learner first must acquire a stable association between the unfamiliar foreign word and a familiar English word that sounds like a salient part of the foreign word. The

acoustically similar English word is the keyword. The learner then encodes a meaningful interaction between the keyword and the foreign word's definition. The method has been investigated most extensively with respect to recall of definitions from vocabulary words (Presley, Levin and Delaney 1982). Memory techniques may produce high retention rates but are not intended to replace other approaches to vocabulary learning (Cohen, 1987). Keyword techniques should only be used for words that have not been successfully acquired through other techniques (Hulstijn, 1997).

Beaton, Gruneberg and Ellis (1995) assessed one individual's level of recall for foreign vocabulary learned ten years before using the keyword method. Without any revision at all, he remembered 35% of the test words with spelling fully correct and over 50% with only very minor errors of spelling. After 10 minutes spent looking at a vocabulary list, recall increased to 65%. After a period of revision lasting a further one and half hours, recall was virtually 100%. This level of recall was maintained for at least one month. The results of their study indicated that the keyword method might be used to learn a large list of vocabulary.

There have been several studies investigating different practices such as use of glosses and dictionary. Luppescu and Day (1993) conducted a study to investigate the effects of the use of bilingual dictionaries during reading to vocabulary learning. Their participants were 293 Japanese university students studying English as a foreign language. The results of the study show that students who used a dictionary scored significantly better on a vocabulary test than students who did not use a dictionary. Moreover, students who used a dictionary read nearly half as quickly as the group that did not use dictionaries.

Hulstijn, Hollander and Greidanus (1996) compared the acquisition of vocabulary by Dutch advanced students of French reading a French story in one of three text reading conditions: marginal glosses; dictionary; or control. Their results showed that dictionary use is more effective when compared to marginal glosses.

In a meaning-focused reading and vocabulary learning based study Laufer (2000) found that looking up new words in a dictionary during reading was more effective than

reading with the same words glossed in the text margin by the researcher. The study used electronic dictionaries, and all the look-ups of the learners were registered in log files. This way, it was possible to verify that the acquired words had been looked up by the students.

Nation (2001) claimed that incidental vocabulary is seen as something opposed to direct intentional learning and teaching of vocabulary. Given the relative effectiveness of intentional (explicit) techniques in vocabulary learning, one might think such an approach would be a major element in most classrooms; however, this is not necessarily so (Schmitt, 2008).

One focus of the present study is intentional vocabulary learning through reading supplemented with different activities. There have been studies comparing reading only to reading supplemented with another activity.

Hulstijin and Trompetter's (1998) conducted a study comparing vocabulary learning by the reading group and composition writing group. The subjects in the reading group, read a text about the weather, looked up unknown words in an electronic dictionary, answered comprehension questions and then they were tested unexpectedly on the recall. The words that the subjects looked up were recorded in the log file. The composition group was asked to write a composition about the weather and to look up any words they needed for the task in the dictionary. Each student in this group was also tested on the specific words looked up. The results showed that the composition group was more successful in vocabulary gains than the reading group.

Hulstijin and Laufer (2001) conducted two studies in the Netherlands and Israel. EFL learners in two countries participated in two parallel experiments. Their short- and long-term retention of ten unfamiliar words was investigated in three learning tasks: reading comprehension, comprehension plus filling in target words, and composition-writing with target words. The reading groups received a text with comprehension questions. Ten target words were glossed in the margin. The composition groups received the same target words with explanation and translation of meaning, and were asked to incorporate the target words in a composition. The groups took two tests,

immediate and delayed, on the recall of meaning of the target words. On both tests, the composition groups remembered significantly more words than the reading groups. Retention was highest in the composition group, lower in reading plus fill-in, and lowest in the reading.

Laufer (2003) reported three experiments on whether more words were acquired through reading or through completing exercises: completing given sentences, writing original sentences and writing compositions using the target words. In the first study, the learning of ten low frequency target words by two groups of EFL university learners was compared. One group read the words which were glossed in the text margin. The second group was given a list of the ten target words with explanation and translation of meaning, these words were given in isolation not in a text and the group was asked to write a sentence with each word. After the subjects completed their tasks, they were given an unexpected test in which they had to provide the meaning for the ten target words. In this test, the sentence writing group had better scores. Two weeks later, when the same test was repeated, the sentence writing group again had higher scores on the delayed test. In this study, one group of students only read the glossed words and the second group was given translation of meaning and explanations, so; it is clear that one treatment is receptive and the other treatment is productive.

The purpose of the second experiment was to compare the number of words retained after reading a text with incorporating the words into a composition. The reading group read a text with marginal glosses. The sentence writing group received the target words with explanations and translation of meaning and wrote a composition incorporating the target words. On the immediate test, composition writing group got better scores than reading group. Two weeks later, a delayed test was given. In this test, the composition writing group got higher scores than reading group.

The purpose of third experiment was to compare three tasks. One group read a text and looked up ten unknown words in the dictionary. The second group received the same target words without the text. The words were written out on a sheet of paper and each word was provided with a translation. The third group received a list of the ten target words and sentences written by the researcher. The subjects were asked to look up the

meaning of the words in a dictionary and complete each sentence with one target word. The results showed that both on the immediate and the delayed tests, the groups writing words and filling in target words got better scores. However, on the delayed test, the fill-in group performed best. In these experiments Laufer compared receptive knowledge with productive knowledge.

Paribakht and Wesche (1997) conducted a study to compare reading only and reading plus conditions. Their study took place with beginning and intermediate students in comprehension-based ESL course at the bilingual University of Ottawa's Second Language Institute. Reading only group read four texts and answered comprehension questions. Reading Plus group read four texts, answered comprehension questions and completed a combination of focused vocabulary exercises. The knowledge scale (VKS) used by Paribakt and Wesche, which is used as a base for the current study, was as the following:

Self-report-categories

I I don't remember having seen this word before.

II I have seen this word before, but I do not know what it means

III I have seen this word before, and I think it means _____

IV I know this word. It means _____

V I can use this word in a sentence: _____

VKS was given to the subjects before and after the treatments. They were presented with a list of target words and asked to indicate their level of vocabulary knowledge in the list. In order to find vocabulary gains, pre and post-tests were compared. Their results showed that reading plus group acquired significantly more words than reading only group.

In a more recent study, Min (2008) compared the effectiveness of reading thematically related articles and reading plus vocabulary-enhancement activities. Participants were 50 male Chinese speakers of English at a senior high school. The participants in reading plus vocabulary-enhancement group read selected texts and practiced various vocabulary exercises and reading only group read thematically related supplementary materials besides the selected texts. The treatments took two hours per week for five

weeks. The main texts were four authentic texts on two themes: computer culture and future of medicine. Vocabulary exercises tapped learners' receptive and productive knowledge of the target vocabulary. The participants read a total of 50 target unknown words.

Min (2008) found that reading plus vocabulary-enhancement group demonstrated significantly more knowledge about the target vocabulary than reading supplementary articles group on acquisition and retention tests. It is concluded that reading plus vocabulary exercises are more effective than reading related articles in enhancing vocabulary acquisition.

The reported studies comparing reading plus tasks with reading demonstrate that word-focused activities result in better vocabulary learning results as compared to reading a text with new words. The more effective tasks involved looking up the words in a dictionary, filling the target words in given sentences, using them in original output in the form of isolated sentences, or a composition that incorporated all the target words under investigation.

Although previous studies claimed that reading plus activities result in better learning, there have been some problems with these studies. For example, Laufer's three experiments were based on a single encounter of unknown words in texts although literature claims there should be at least four encounters with the unknown words. Paribakht and Wesche (1997) administered two different instructional treatments to the same group of students, and as a result, they had to use different sets of reading materials and target words for each treatment. Min's (2008) study design was completely different from the current study design. Min used two themes presented in four articles containing 50 target words. Reading only group read the target vocabulary and encountered them in supplementary texts and reading plus vocabulary group read the target vocabulary and encountered them in the vocabulary exercises.

There have been no empirical studies, which compare word focused activities and input enhancement to input only to show the effect of one treatment over others.

2.7. Engagement with Vocabulary- Involvement Load Hypothesis

Laufer and Hulstijn (2001) claim that "involvement is perceived as a motivational-cognitive construct which can explain and predict learners' success in the retention of unfamiliar words". They refer to information processing with the word cognitive. They argue that the retention of words when processed incidentally is conditional upon the following factors: need, search and evaluation.

The need is motivational and requirement for a linguistic feature in order to achieve some desired task. For example, the learner is reading a text and an unknown word is necessary for comprehension. In this case, the learner experiences the need to understand it. Two degrees were suggested for need: moderate and strong. Need is moderate when it is imposed by an external agent, and strong when it is intrinsically motivated. For example, a moderate need occurs when the teacher asks the student to fill a word in a sentence; a strong need occurs when the learner decides to look up a word in an L1–L2 dictionary during composition writing.

Search and evaluation are cognitive (information processing) dimensions. Search is the attempt to find the meaning of an unknown L2 word. Evaluation refers to a comparison of a given word with other words. Two degrees were suggested for evaluation: moderate and strong. In a moderate evaluation, the learner recognizes differences between words as in a fill-in task with words provided, or recognizes differences between several senses of a word in a given context as in the decision of the meaning of a homonym in a text context. Strong evaluation requires a decision as to how additional words will combine with the new word in an original as opposed to given sentence.

Involvement load refers to combination of the presence or absence of the involvement factor: need, search and evaluation. The hypothesis of involvement predicts that when word complexity factors are invariable, tasks with higher involvement load will yield better vocabulary learning results than tasks with lower involvement load.

When we consider Laufer and Hulstijn's Involvement Load Hypothesis, depending on the presence or absence of these components, each treatment may induce a different

degree of involvement on the part of the learner that will lead to noticing and elaborate processing of the words to some extent, and that will affect vocabulary retention as a result.

As the research shows, there is confusing evidence on whether reading is necessarily the best source of vocabulary. In order to acquire a word, word-focused activities are recommended but how do teachers know in advance which tasks will be effective for vocabulary learning? As the hypothesis of involvement claims, the presence of need, search and evaluation is the determining factor in vocabulary retention. As a by product of the current research involvement load hypothesis will be tested.

2.8. Grammatical form of the target word

Aitcihison (1994) divided word class into two main categories: content words and function words. Content words are nouns, verbs, adjectives and adverbs. They are defined as "words which have an independent meaning". They can represent individual arguments in a sentence that refer to particular entities or actions. Content words have the grammatical function of subject, verb and object within a sentence. Function words are articles, conjunctions and prepositions. The role of function words is primarily to relate one item to another. The importance of two categories is that learners acquire not only the grammatical class but also information about the correspondence between grammatical class and function. According to deBrot, Paribakht and Wesche (1997) the grammatical class of word is acquired along with their semantic specifications and conceptual information.

There have been studies in the first language that investigated grammatical class of words. Gentner (1982) proposed that children initially learn more nouns than verbs and attributed this finding to the tendency of children to name what is around them in the world. Caselli, Bates, Casaido, Fenson and Sanderl (1995) collected data from L1 Italian and L1 English children. Their data showed that children comprehended greater numbers of nouns than verbs and they concluded that occurrence of nouns is higher than verbs in children's receptive vocabulary.

Nagy, Anderson and Herman (1987) investigated the role of grammatical word class in learners' ability to incidentally acquire meaning of unknown words during reading. Their participants were third, fifth and seventh grade students. Each group read a text, which has a difficulty level suitable to its grade. One week after reading the texts, participants were given a multiple choice vocabulary test that contained the target words. These tests were designed for each grade level and participants saw the target word followed by five options for its meaning. The word classes were noun, verb, adjective, adverb and preposition. The researchers found out that word class had no significant effect upon the percentage of correct answers that the participants provided on the multiple choice test. They concluded that word class did not have a significant impact on learners' ability to learn word meaning from context.

In the second language studies, Ellis and Beaton (1993) investigated the effect of noun and verb keywords upon learners' recall of English-German word pairs in a study of keyword method. The learners were asked to think of an image of a referent of L1 word that corresponds to the L2 word in meaning. The researchers examined the effect of noun and verb keywords upon recall. They stated that nouns are far easier to learn as foreign language vocabulary than are verbs (Ellis and Beaton, 1993: 604).

In another L2 study Paribakht and Wesche (1999) examined inferencing of word meaning for different grammatical classes in reading situations. Grammatical word class was viewed as a knowledge source that L2 learners used to infer the meaning of unknown words form context in an L2 text. The researchers assessed intermediate level L2 English learners' ability to determine the meaning of unknown words while reading a text. They concluded that in inferencing learners guessed the meaning of more nouns than verbs.

Kweon and Kim (2008) investigated 12 Korean learners of English to see how and which unknown words can be learned and retained. The participants read authentic literary texts and they were tested on their vocabulary knowledge before, immediately after and one month after reading. They concluded that among the three word classes, nouns were a little easier to retain than verbs and adjectives.

In the present study, the participants will read texts in which a target word will occur six times. The study will last eight weeks, thus learners will encounter eight target words. Of these target words, four are nouns and four are verbs. Considering the previous research, there may be an effect of grammatical category of words in vocabulary learning. Therefore, grammatical category of gained target words will be investigated to find out whether any category is gained in a larger amount.

2.9. Working memory and vocabulary learning

Short-term memory (sometimes referred to as "primary memory" or "active memory") refers to the capacity for holding a small amount of information in mind in an active, readily available state for a short period of time. The duration of short-term memory (when rehearsal is prevented) is assumed to be in the order of seconds. Estimates of the capacity of short-term memory vary – from about 3 or 4 elements (i.e., words, digits, or letters) to about 9 elements. A commonly-cited capacity is 7±2 elements. In contrast, long-term memory indefinitely stores a seemingly unlimited amount of information and organizes everything we know and can do (Wikipedia, 2008).

Baddeley and Hitch (1974) proposed a model of working memory in order to describe a more accurate model of short-term memory. Working memory means the cognitive processes that maintain information in the mind during active processing of information. Working memory enables the coding, processing and recording of information here and now. The original model was composed of three main components: The central executive controls the flow of information and regulates cognitive processes. It has slave systems which are named as the phonological loop and the visuo-spatial sketchpad.

The phonological loop consists of two parts. The first part is articulatory control system which rehearses information verbally and has a time based capacity of about 2 seconds. The second part is phonological store and this part uses a sound based code to store information, but this information decays after about 2 seconds.

Visuospatial sketchpad stores visual information. It is used in the temporary storage and manipulation of spatial and visual information, such as remembering shapes and colors.

Baddeley (2000) added a forth component to this model, called the episodic buffer. This component links information across components of working memory to form integrated units of visual, spatial and verbal information, such as the memory of a story.

Stewick (1996) has presented an explanation about the way memory relates to SLA. Stevick (1996) states that "for the purposes of language teaching, it will be better off with two departures from the familiar short-term memory/long-term memory dichotomy. The first is to go along with those contemporary scientists who talk more about "working memory" and less about short-term memory". He argues that "a critical aspect of the working memory concept is that it involves the simultaneous storage and processing of information, and requires the maintenance of some information during the processing of that or other information…Long-term-memory refers to one physical part of our memory equipment; short-term memory refers to what another part of the equipment allows us to do with new data coming in through the senses; working memory refers to a capability for consciously handling data from both external and internal sources". According to Scovel (2001) Stevick has proposed a revision of the popular short-term memory/long-term memory dichotomy in order to be more useful in the field of SLA and foreign language teaching.

Memory and reading are in close interaction with each other. Working memory functions effectively enough and in a focused way during a reading event. Distinguishing and connecting speech sounds and recognizing speech and letter correspondence are central learning tasks at the first stages of acquiring reading skills. Phonological working memory also plays a key part in this. Phonological working memory refers to a process of receiving, analyzing and processing of sound elements in language. It is essential for reading that a learner remembers the connection between spoken and written language.

The relation between learning a new word and working memory is that learning of the phonological forms of new words is influenced by phonological memory factors. The

process of learning a new word involves the transfer of phonological information from its temporary representation in the phonological loop into some more permanent knowledge structure in the lexical-semantic memory system. The cognitive processes involved in constructing the long-term phonological representation from temporary store do not take place as soon as a new item is encountered (Mackey, Philip, Egi, Fujii and Tatsumi, 2002). According to Robinson (2002) the ease of learning is influenced by the adequacy of the representation in the temporary phonological memory system. When the quality of this memory sketch is better, the probability of a stable long-term memory representation is greater.

Within the framework of cognitive accounts of second language acquisition an important role has been attributed to working memory in terms of verbal input as Ellis and Scmidth (1997) and Williams (1999) have suggested. Considering the relation between working memory and vocabulary learning, the results of this study may explain which treatment results in better working memory operations.

To summarize, the previous research has suggested that learners will gain receptive vocabulary through reading only, however; other research has claimed that learners will gain receptive vocabulary through completing vocabulary tasks. Another argument has stated that input enhancement will result in more vocabulary gains. Schmidt (1995) has stated that what learners notice in input is what becomes intake for learning, so through typographical enhancement, learners will notice the target words and gain them. Another argument has stated that by completing vocabulary activities after reading, learners will go through a more elaborate mental processing and therefore will retain more words. Sonbul and Schmitt (2009) have claimed that gained vocabulary will be lost in time as receptive vocabulary is prone to easily forgetting. Lastly, Paribakht and Wesche (1999); Kweon and Kim (2008) have stated that nouns are learned easier than verbs. In the light of the previous research, the present study attempts to answer several unresolved questions with regard to incidental and intentional vocabulary learning and the effect of grammatical class on receptive vocabulary learning through reading. Based on incidental vocabulary learning and intentional vocabulary learning debate, the present study is guided by the research questions that follow as stated in the introduction part:

2.10. Research Questions

The study was designed to address the following research questions:

1. Which one of the following treatments leads to better form and meaning recognition of the target vocabulary?
    i. Input only
    ii. Input enhancement
    iii. Word focused tasks

2. If groups can retain the words within time, which group can best retain the learned words?

3. If there is an effect of grammatical form of the unknown word, which can be better learned?
    i. verb
    ii. noun

CHAPTER THREE- METHODOLOGY

3.1. Overview of the Study

The purpose of the present study is to investigate whether typographical input enhancement and word focused tasks are favorable as compared to input only when reading for comprehension.

In order to explore the effectiveness of one group over others, vocabulary gains and retention from input only, input enhancement and word-focused tasks groups were compared. The study was designed to measure word gains as form and meaning recognition, therefore; productive level of vocabulary learning is not in the scope of this study due to limitations in the data collection.

Moreover, while reading the texts, learners encountered nouns and verbs as target words throughout the study. There may be an effect of grammatical class on word learning as previous studies have claimed that there is (Ellis and Beaton, 1993; Kweon and Kim, 2008). Therefore, in order to find out whether there is an effect of grammatical class, gain and retention of nouns and verbs were compared for each group.

Quasi-experimental non-equivalent pre-test post-test design was used in the present study. Quasi-experimental designs do not require random assignment of participants to groups but include one or more control groups (Larsen-Freeman and Long, 1991). Hatch and Farhady (1982) state that in classroom research, it is unreasonable to expect to randomly assign students to classes for the benefit of our research. The data in the present study was gathered from 150 first year students. There were six groups of first years in the year data was gathered and it was not possible to assign these students randomly into control and experimental groups. However, since there would be mainly three groups in the study acting as one control group and two experimental groups, these groups were randomly assigned to Input Only, Input Enhancement and Word-focused Tasks groups. As control group Input Only group read the texts, answered the comprehension questions and then completed vocabulary gain measures. One of the

experimental groups-Input Enhancement group - read the texts in which target words were written in bold and underlined then they answered the comprehension questions and completed vocabulary gain measures. The second experimental group-Word-focused Tasks group- read the texts, answered the comprehension questions, completed a group of vocabulary exercises, and then completed vocabulary gain measures. Before starting the study, in order to control dependent variables in the study, all participants were given a TOEFL test for the level and a Vocabulary Knowledge Scale to ensure that they are unfamiliar with the target words. Treatments lasted eight weeks. Each week, groups read a different text containing one target word which appeared six times in the text. During the study, the participants got their treatments and immediately after the treatments, they got immediate post-tests. In order to investigate whether the participants can recall the words and whether time plays an important role in recalling, nine weeks later a delayed post-form-recognition test and ten weeks later a delayed post-meaning-recognition test was given.

3.2. Participants

The research was conducted at Anadolu University Education Faculty English Language Teaching Department, during 2006-2007 spring semester. The participants were 150 first year students. They passed the examination, which is given by Preparatory School. The scores from Preparatory School were obtained and those who got similar results in this examination were asked to participate in the study. The students were also given a TOEFL test one week before the instructional treatments to make sure that all the participants are at the same level. The students were given structure and written expression part and reading comprehension and vocabulary part, i.e. sections II and III, of the TOEFL test. The students who got between 65 and 75 out of 100 questions of the TOEFL test were selected as the participants in the study.

Before starting the study, the students, who agreed to take part in a study that would take ten weeks, signed a consent form stating that they agreed to take part in this study. Then to avoid the use of name, the students were given codes to be used on each of their paper.

The students were also given a vocabulary checklist before the treatments to make it sure that all participants were unfamiliar with the target words. Besides, all the participants were at similar ages, between 17-19 and all of them were in their first year at Education Faculty. All the participants had the same L1 background, Turkish.

The students were put into three groups randomly, so; there were mainly three groups getting different input, Word Focused Tasks group (WFT), Input Enhancement group (IE) and Input only group (IO). IE Group read typographically enhanced texts. WFT group read the texts and completed word focused tasks. IO group read the texts. All groups answered comprehension tests and then form and meaning recognition tests. The groups were not told that they would be tested on vocabulary not to direct their attention to the vocabulary rather they were told they would be tested on reading comprehension and that this was a research on reading comprehension.

3.3. Materials

This section provides description of

(1) how the reading texts were selected and selection criteria applied
(2) how the target words were selected and the selection criteria applied.
(3) how the reading texts were made typographically enhanced for the learners to be noticed
(4) how word focused tasks were prepared for each text.
(5) how vocabulary checklist tests were prepared.
(6) how vocabulary gain measures were prepared.

3.3.1. Selection of the texts based on readability: Eight texts were chosen from daily, weekly or monthly magazine, journal or newspaper web-sites such as the *BBC* website, *The New York Times, Science Daily* or books (Appendix I). For each text, a target word was selected (See selection of target words in 3.3.2). Each text contained a target word and this target word appeared six times in the text because learners need to encounter unfamiliar words repeatedly in order to make effective use of reading as a source for vocabulary growth (Rott, 1999). Some non-target words that could be either

familiar or unfamiliar to learners were replaced with high-frequency words to make text comprehension manageable for participants.

The texts were analyzed by using “Readability Index Calculator” at www.standards-schmandards.com/exhibits/rix/. Readability Index Calculator makes two types of analyses and gives two types of scores: Flesch-Kincaid Grade level and Flesch-Kincaid Reading Ease scores. Flesch-Kincaid Grade level was 12 for each text and Flesch-Kincaid Reading Ease scores were between 39 and 43.

The "Flesch–Kincaid Grade Level Formula" translates the 0–100 score to a grade level, making it easier to judge the readability level of various books and texts. It can also mean the number of years of education generally required to understand this text, relevant when the formula results in a number greater than 12. The grade level used in Flesh-Kincaid Grade Level is calculated with the following formula:

$$0.39\left(\frac{\text{total words}}{\text{total sentences}}\right)+11.8\left(\frac{\text{total syllables}}{\text{total words}}\right)-15.59$$

According to this formula, total sentences, are calculated. Then the average number of words used per sentence (the number of words divided by the number of sentences) and the average number of syllables per word (the number of syllables divided by the number of words) is calculated. The average number of words is multiplied by 0.39 and it is added to the average number of syllables per word multiplied by 11.8. Lastly, 15.59 is subtracted from the result.

The result is a number that corresponds with a grade level. For example, a score of 12 would indicate that the text is expected to be understandable by an average student in 12th grade.
http://www.readabilityformulas.com/flesch-grade-level-readability-formula.php
http://rfptemplates.technologyevaluation.com/Readability-Scores/Flesch-Kincaid-Readability-Score.html

In the Flesch Reading Ease test, higher scores indicate material that is easier to read; lower numbers mark harder-to-read passages. The formula for the Flesch Reading Ease Score (FRES) test is as follows:

$$206.835 - 1.015\left(\frac{\text{total words}}{\text{total sentences}}\right) - 84.6\left(\frac{\text{total syllables}}{\text{total words}}\right)$$

According to this formula, total syllables/total words is average number of syllables per word (ASW) and total words/total sentences is average sentence length (ASL). The formula is calculated in the following way:

206.835 – (1.015 x ASL) – (84.6 x ASW)

According to Flesch Reading Ease test scores of 90.0–100.0 are considered easily understandable by an average 5th grader. 8th and 9th grade students could easily understand passages with a score of 60–70, and passages with results of 0–30 are best understood by college graduates. The following table is also helpful to assess the ease of readability in a document:

90-100 : Very Easy
80-89 : Easy
70-79 : Fairly Easy
60-69 : Standard
50-59 : Fairly Difficult
30-49 : Difficult
0-29 : Very Confusing

(http://rfptemplates.technologyevaluation.com/rfp/for/flesh-kincaid-grade-level-definition.html) (http://www.brighthub.com/education/k-12/articles/38756.aspx)

In order to analyze the texts Flesh-Kincaid and Flesh Reading Ease were chosen because they are calculated online. Miyazaki (1996) and Brown (1998) proposed readability formulas for EFL learners. However, as Greenfield (2004) states Brown's formula is difficult to use as it requires long-word and passage-frequency word counts. Miyazaki EFL Readability Index formula is as follows:

EFL Difficulty = 164.935 - 18.792 letters/word - 1.916 words/sentence

For the result of text difficulty, The Miyazaki study provides a lookup table of scores. The scores are given in Table 1.

Table 1: Miyazaki Table of Scores

per entence	Letters per word																														
	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
2				99	97	95	93	92	90	88	86	84	82	80	78	77	75	73	71	69	67	65	63	62	60	58	56	54	52	50	48
3			99	97	95	93	92	90	88	86	84	82	80	78	77	75	73	71	69	67	65	63	61	60	58	56	54	52	50	48	46
4		99	97	95	93	91	90	88	86	84	82	80	78	76	75	73	71	69	67	65	63	61	60	58	56	54	52	50	48	46	45
5	99	97	95	93	91	90	88	86	84	82	80	78	76	75	73	71	69	67	65	63	61	60	58	56	54	52	50	48	46	44	43
6	97	95	93	91	90	88	86	84	82	80	78	76	75	73	71	69	67	65	63	61	59	58	56	54	52	50	48	46	44	43	41
7	95	93	91	90	88	86	84	82	80	78	76	74	73	71	69	67	65	63	61	59	58	56	54	52	50	48	46	44	43	41	39
8	93	91	89	88	86	84	82	80	78	76	74	73	71	69	67	65	63	61	59	58	56	54	52	50	48	46	44	42	41	39	37
9	91	89	88	86	84	82	80	78	76	74	73	71	69	67	65	63	61	59	57	56	54	52	50	48	46	44	42	41	39	37	35
10	89	88	86	84	82	80	78	76	74	72	71	69	67	65	63	61	59	57	56	54	52	50	48	46	44	42	41	39	37	35	33
11	87	86	84	82	80	78	76	74	72	71	69	67	65	63	61	59	57	56	54	52	50	48	46	44	42	41	39	37	35	33	31
12	86	84	82	80	78	76	74	72	71	69	67	65	63	61	59	57	56	54	52	50	48	46	44	42	40	39	37	35	33	31	29
13	84	82	80	78	76	74	72	70	69	67	65	63	61	59	57	55	54	52	50	48	46	44	42	40	39	37	35	33	31	29	27
14	82	80	78	76	74	72	70	69	67	65	63	61	59	57	55	54	52	50	48	46	44	42	40	39	37	35	33	31	29	27	25
15	80	78	76	74	72	70	69	67	65	63	61	59	57	55	54	52	50	48	46	44	42	40	38	37	35	33	31	29	27	25	23
16	78	76	74	72	70	69	67	65	63	61	59	57	55	53	52	50	48	46	44	42	40	38	37	35	33	31	29	27	25	23	22
17	76	74	72	70	68	67	65	63	61	59	57	55	53	52	50	48	46	44	42	40	38	37	35	33	31	29	27	25	23	21	20
18	74	72	70	68	67	65	63	61	59	57	55	53	52	50	48	46	44	42	40	38	36	35	33	31	29	27	25	23	21	20	18
19	72	70	68	67	65	63	61	59	57	55	53	51	50	48	46	44	42	40	38	36	35	33	31	29	27	25	23	21	20	18	16
20	70	68	66	65	63	61	59	57	55	53	51	50	48	46	44	42	40	38	36	35	33	31	29	27	25	23	21	20	18	16	14
21	68	66	65	63	61	59	57	55	53	51	50	48	46	44	42	40	38	36	34	33	31	29	27	25	23	21	19	18	16	14	12
22	66	65	63	61	59	57	55	53	51	49	48	46	44	42	40	38	36	34	33	31	29	27	25	23	21	19	18	16	14	12	10
23	64	63	61	59	57	55	53	51	49	48	46	44	42	40	38	36	34	33	31	29	27	25	23	21	19	18	16	14	12	10	8
24	63	61	59	57	55	53	51	49	48	46	44	42	40	38	36	34	33	31	29	27	25	23	21	19	17	16	14	12	10	8	6
25	61	59	57	55	53	51	49	48	46	44	42	40	38	36	34	32	31	29	27	25	23	21	19	17	16	14	12	10	8	6	4
26	59	57	55	53	51	49	47	46	44	42	40	38	36	34	32	31	29	27	25	23	21	19	17	16	14	12	10	8	6	4	2
27	57	55	53	51	49	47	46	44	42	40	38	36	34	32	31	29	27	25	23	21	19	17	15	14	12	10	8	6	4	2	0
28	55	53	51	49	47	46	44	42	40	38	36	34	32	30	29	27	25	23	21	19	17	15	14	12	10	8	6	4	2	0	
29	53	51	49	47	45	44	42	40	38	36	34	32	30	29	27	25	23	21	19	17	15	14	12	10	8	6	4	2	0		
30	51	49	47	45	44	42	40	38	36	34	32	30	29	27	25	23	21	19	17	15	13	12	10	8	6	4	2	0			

The text is analyzed by using Miyazaki formula and then the score is figured on 100-point scale. 100 is the easiest, 50 represents a text of average difficulty for EFL students.

Since these formulas are difficult to use and as Greenfield (2004) states, Miyazaki's results and Flesh_Kincaid and Flesh Reading Ease scores are similar to each other, Flesh_Kincaid and Flesh Reading Ease scores were preferred in this study.

Along with the analysis for text difficulty, the length of the texts were considered and all eight texts were about 415-445 words. The texts were selected considering student

interest. Before the pilot study, students were asked what kind of texts and topics they found interesting and during the pilot study, they were asked if they found the text interesting and if they liked reading it. Based on students' answers texts were selected from magazine, journal or newspaper web-sites. During the selection process of the texts it was important to find texts that dealt with up to date and interesting topics and such texts that would contain a target word which will be unfamiliar to the learners and which may occur several times in the text.

Concerning readability and unfamiliar words apart from target words, the texts were adapted. The following factors were taken into consideration while adapting the texts: It was important to have a text
in which the target word will occur six times
in which other words will be comprehensible for the learner so that their attention will be on unfamiliar target words not other words
which will be comprehensible
which will be of interest to the participants so that they will want to read.
which will be suitable for their age and level.

It was difficult to find such texts in which target words appeared six times, all of the other words are familiar, eight texts that have the same length and the same reading difficulty level which is suitable to our learner profile. Therefore, the texts were adapted and then they were read and checked by two native speakers to make sure that they still sounded native and authentic.

3.3.2. Selection of the Target Words: In order to make sure that target vocabulary is unfamiliar to the participants, target words were chosen from low-frequency words. Besides, Intermediate level textbooks that might be studied by the participants were analyzed considering vocabulary to make sure that they are unfamiliar to the learners. Moreover, in order to determine the frequency levels of the words in the texts, the texts were submitted to an online version of lexical frequency profiles at http://www.lextutor.ca/vp/. created by Tom Cobb at the University of Quebec. Vocabulary frequency profile was originally developed by Paul Nation and Batia

Laufer and is a text analysis program used to investigate the proportions of high-low frequency words in a written text.

79.9% of written English uses only the first 2000 most-frequent words in the language (Laufer 1999). Knowledge of these 2000 most-frequent words plus the 570 most-frequent 'academic' words is considered 'critical for academic success' (Beglar 1999). In the light of this information Laufer & Nation (1995) developed a procedure which categorises the words in a learner's text, according to which frequency band each word belongs to: first 1000 most-frequent, second 1000 most-frequent, 570 most-frequent 'academic' words not in either of the other two lists. They called this analysis the lexical frequency profile (LFP) of the text. The program shows the numbers and percentages of words and word families in a target English text. The output from the LFP program shows:

A. word list	B. types%	C. tokens%	D. families
1st 1000 (high frequency) word families			
2nd 1000 (medium frequency) word families			
Academic (low frequency) word families			
Technical (low frequency) word families			
off-list word families (low frequency)			

The program has performed a type and token analysis. A token is any occurrence of a word form in the text, regardless of whether it is occurring for the 1st time or many times. A type is any word form which occurs once; regardless of how many more times it might occur. Both numbers and percentages of occurrences are given. A word family

is the base form of a word, such as might appear as a headword in a dictionary, plus all the derived and inflected forms of it.

This profile was developed and is used by Tom Cobb available at http://www.lextutor.ca/vp/. The web-site informs that Vocabulary Profilers break texts down by word frequencies in the language at large and are based on Laufer and Nation's Lexical Frequency Profiler, and divide the words of texts into first, second thousand levels, academic words, technical words and the remainder are off-list words. Off-list shows that the words are not in the first 3 lists and are therefore by definition low frequency. For example, in the present study, the analysis of the first text called “A surprising secret to a long life: Stay in school” is as follows:

	Families	Types	Tokens	Percent
First 500:	...	...	(325)	(77.75%)
K1 Words (1 to 1000):	143	167	356	85.17%
Function:	...	...	(193)	(46.17%)
Content:	...	...	(163)	(39.00%)
K2 Words (1001 to 2000):	12	15	31	7.42%
AWL Words (academic):	13	14	21	5.02%
MED Words (technical):	...	1	1	0.24%
Off-List Words:	?	5	9	2.15%
	168+?	202	418	100%

Words in text (tokens):	418
Different words (types):	202
Type-token ratio:	0.48
(Tokens per type:	2.07)
Function-content ratio:	0.46

Onlist Tokens:	408
Onlist Types:	196
Onlist Type-Token:	0.48
Onlist Families:	168
Onlist Family/token:	0.41
Onlist Family/type:	0.86

Examples from 0-1000 [families 140 : types 164 : tokens 345] a a a a a a a a a about about after age ages also an and and and and and and and and and and and are as as as associated at average be be because been before behind between by by by by can care change changed changes children clear could depend did different different difficult does effort egg evenly every exists expectancy extended family few find find first following for for for for found friends from from get get go going…

First 500 functors: a a a a a a a a a about about after an and and and and and and and and and and are as as as at be be because been before behind between by by by by can did does for for for for from from has has how how however i i if in in in in in in in in in in instead interesting is is is is is is is is it it it it itself may much…….
First 500 content: age ages also change changed changes children clear could different different difficult evenly every expectancy family few find find following found friends get get go going……..

Second 500 content: associated average care depend effort egg exists extended first ill lack loving noticed opportunity population proposed race race related relation rich……..

1001-2000 [11:14:30] attending chicken compared educated educated education education education education education education education excited extra extra extra extra extra health health…….

AWL [13:14:21] affect affect data distributed economists factor finally hypotheses income income investing investing linked medical researcher researcher researcher researchers researchers researchers stress.

OFF LIST [?:5:11] disentangle disentangle disentangle disentangled disentangled disentangled geography spans vastly.

In the present study, selected texts were analyzed for the target words to make sure all target words are at the same frequency level. All of the target words were off-list words.

Eight target words were formed of four nouns and four verbs to control any possible effect of the grammatical category of the unknown lexical items because previous studies claimed that there is an effect of word category in the learning of vocabulary. Concerning the number of words to be learned throughout one semester, other word categories were excluded from the study.

Moreover, the target words in the texts gave enough clues to the learners so that they can infer the meaning by using context clues but there is no direct definition of the target words in the text.

3.3.3. Typographical Input Enhancement: Schmidt (2000) argues that the requirement of noticing applies to vocabulary as well as to grammar. According to Schmidt's noticing hypothesis if unknown items are not noticed, they can not be learned. Input enhancement may play a role in making L2 learners notice the unknown vocabulary while they are reading for comprehension.

Different types of typographical input enhancement seem to be effective in attracting L2 learners' attention to the targeted L2 forms in the input thus providing these forms to be noticed (Yano, Long and Ross, 1994).

In SLA studies, typographical enhancement takes the form of making unknown items physically salient. It was intended in this study that making unknown lexical items typographically salient would increase the amount and rate at which learners notice them. For typographical input enhancement the target lexical items were underlined and written in bold in the present study.

3.3.4. Word focused tasks: For each text, to be given to WFT group, vocabulary tasks were prepared. These contextualized exercises were given to participants after they read the text and answered the comprehension questions.

Paribakht and Wesche (1997) grouped tasks of vocabulary from the vocabulary teaching books and put the tasks into five distinct categories:

1. Selective attention: Providing learners with a list of target words in the beginning of a text and asking them to read the list and notice where the word appears. This category is used to draw the learners' attention.
2. Recognition: Matching the word with definition or synonym, recognizing the meaning from a multiple choice of meanings, choosing the correct picture after

seeing the target word or choosing the right word to label a picture. This category is used only to recognize the target words and their meanings.

3. Manipulation: Giving derivations of words, using stems and affixes to construct words. These tasks draw on learners' knowledge of morphology and grammatical classes.
4. Interpretation: Finding the odd word in a series of related words, multiple-choice cloze exercises, guessing the meaning of target words in context. This category involves analysis of meanings of words with respect to other words that are given in the context.
5. Production: Open cloze exercises, labeling pictures, finding the mistake in an idiom. This category requires the learners to use the target words in appropriate contexts.

Referring to Paribakht and Wesche's (1997) categories of task types, recognition tasks were used in this study.

The tasks for each text were prepared by the researcher and were checked by one nonnative teacher of reading and two native teachers of English and one native-like expert to find whether they really draw learners' attention to target words.

3.3.5. Vocabulary Checklist Test: A vocabulary pretest in the form of a checklist was given to make sure that target words are unfamiliar to the participants. Anderson and Freebody (1983) introduced a yes/no format test asking participants to indicate if they are familiar or unfamiliar with the word in the list. This test has been found to be sensitive to partial word knowledge and it has been extended by Knight (1994) by requesting learners to supply the meaning of the word they check as familiar.

The vocabulary checklist test in this study asked participants to indicate if they are familiar with the word or not and request them to supply the meaning of the word they indicate as familiar. This vocabulary pre-test was adapted from Paribakht and Wesche (1997). It contained four parts:

1. I have never seen this word before.
2. I have seen this word before, but I don't know what it means.
3. I know what this word means.
4. The meaning of the word (either in English or in Turkish).

The first part asked students to indicate if they think they have never seen this word before. The second part asked participants to indicate whether they have seen this word before albeit without knowing its meaning. The third part asked participants to indicate if they know the meaning and fourth part asked participants to give the meaning if they thought they knew the meaning.

3.3.6. Vocabulary Gain Measures: To assess acquisition (form and meaning recognition) two types of tests were administered to measure different levels of word learning through reading texts and to receive more generalizable data (Appendix II).

The first test contained the same parts used in the pre-test. It was used as a form-recognition test. The participants were presented with a total of six words consisting of one target word. The participants were asked if they have seen the words before, and if they know the meaning of the words in the list.

The second vocabulary test was administered in the form of a meaning-recognition test to measure receptive gain of meaning at the level of recognition. This test presented six words including the target word in the form of a list and participants were asked to match the correct definition of the word on the next column which consisted of two distracters.

There is a receptive-productive continuum involved in learning a word. Receptive processing is for comprehension and productive processing is for production. These are two different types of cognitive processes. It is assumed that reception precedes production and probably develop in different ways (Laufer,1998). Therefore, these distinctions have important implications in designing vocabulary gain measures. The purpose of the present study is to compare different treatments in vocabulary learning through reading, so it is preferred to measure receptive vocabulary learning.

3.4. PILOT STUDY

Pilot study was conducted during 2006-2007 fall semester. A text which was taken from Advanced English grammar was adapted to contain the target word six times because multiple exposures may be conceived as a facilitative element of both explicit and implicit vocabulary learning (Zahar, Cobb and Spada, 2001). Rott (1999) investigated exposure frequency and found that six exposures resulted in significant receptive and productive word knowledge.

Some words that could be either familiar or unfamiliar to learners in the text were replaced with high-frequency words to make text comprehension manageable for the participants. Then the text was analyzed by using "Readability Index Calculator" at www.standards-schmandards.com/exhibits/rix/. Flesch-Kincaid Grade level was 12 for this text and Flesch-Kincaid Reading Ease score was 41. Three groups of second year students were randomly chosen and they were randomly assigned to IO, IE and WFT groups. First, vocabulary checklist test was given. The students who knew the target word were excluded from the study. During the treatment, each group got their texts. After reading their texts, the texts were collected and the comprehension questions were given to the students. After the participants completed the comprehension questions, these were collected and the form-recognition tests were given. When the participants finished the form-recognition tests, they were taken by the researcher and finally the meaning-recognition tests were given to the participants. WFT Group read their text and after their texts were collected, they were given the comprehension test. After completing the comprehension tests, they were given the vocabulary tasks. First, the participants did their tasks and when everybody finished within the given time, the answers were discussed as a class activity. After that the participants were given the form-recognition tests and these were collected and the meaning-recognition tests were given. Then the scores were calculated using means and standard deviations. In order to find out if there is a difference among the groups ANOVA analysis was conducted. After the treatment students were asked whether they liked the text and what kind of topics they would like to read. They were asked whether they had any problems in

understanding the texts, comprehension questions and tests to prepare better materials for the study.

3.5. THE STUDY

3.5.1. Procedures: In the main study, first of all, the participants were given a TOEFL test to ensure that they have similar proficiency levels. Then they were given the vocabulary checklist test to make sure that they are all unfamiliar with the target items.

In the second week of the 14-week semester all the first year students got a TOEFL test and a vocabulary checklist test. Then according to the results of these tests, the students who got a score between 65 and 75 and those who were unfamiliar with all the target words were chosen as the participants.

There were six groups of first year students in the semester when the study was conducted. The participants were put into three groups, two experimental groups and one control group. Groups were randomly selected to be WFT, IE and IO groups. Each week, each group got its treatment. Each text in the study consisted of one target word which appeared six times because as previous research suggests (Rott, 1999; Schmitt, 2000) six exposures resulted in significant word knowledge.

The control group which was called IO group read the texts. After reading their texts, the texts were collected and the comprehension questions were given to the students. After the participants completed the comprehension questions, these were collected and the form-recognition tests were given. When the participants finished the form-recognition tests, they were taken by the researcher and finally the meaning-recognition tests were given to the participants. The IO group had the same procedure for eight texts during eight weeks.

One of the experimental groups, IE Group read the texts in which target words were typographically enhanced. The IE group also took the comprehension questions, form-recognition tests and meaning-recognition tests as IO Group.

The other experimental group, WFT Group read the assigned texts each week on the day of the treatment. After they read the text, their texts were collected and they were given the comprehension test. After completing the comprehension tests, they were given the vocabulary tasks. First, the participants did their tasks individually and when everybody finished within the given time, the answers of the tasks were discussed as a class activity. After that the participants were given the form-recognition tests and these were collected and the meaning-recognition tests were given.

Reading eight texts-one text that contained one target word appearing six times each week- lasted eight weeks. As delayed post-tests, first, on the ninth week, the participants were given the vocabulary checklist, which was given to them at the beginning of the study but this time for the purpose of form-recognition test to investigate whether they are familiar with the target words after treatments. Second, on the tenth week they were given the meaning-recognition tests to learn whether they can recognize the meaning of the target words.

3.5.2. Scoring the tests: After all the data was gathered, a scoring procedure took place before the analysis. In order to avoid the element of subjectivity, which may be involved in the scoring procedure, another judge marked the tests, too. While determining whether a translation or synonym was appropriate in the form-recognition test, it was possible that different judges could have different judgments. To solve this problem, the other judge, who is a colleague and has been teaching at the same department with the researcher for 14 years, also marked the tests independently. Then the results of the researcher and the judge were compared and in the case of discrepancies, the judge and the researcher arrived at an agreement. (See Appendix III for the Key of the meanings, which were considered correct and incorrect by the researcher and the judge).

CHAPTER FOUR- RESULTS AND DISCUSSION

In the present study, there were three different instructional treatments, which served as the independent variables in the data analysis procedure. The control group, which is called as IO group, only read the texts and answered the comprehension test and then completed the form-recognition and meaning recognition tests. The IE group read typographically enhanced texts and answered the comprehension test, form-recognition and then meaning-recognition test. The WFT group read the texts and completed the vocabulary tasks, discussed the tasks and then answered the comprehension test, form-recognition test and meaning-recognition test.

The research questions are repeated below for the ease of reference:

1. Which one of the following treatments leads to better form and meaning recognition of the target vocabulary?
    i. Input only
    ii. Input enhancement
    iii. Word focused tasks

2. If groups can retain the words within time, which group can best retain the learned words?

3. If there is an effect of grammatical form of the unknown word, which can be better learned?
    i. verb
    ii. noun

The purpose of the study was to investigate the effect of the treatments on the participants' target word learning. In order to answer the first question, first frequencies and percentages of the participants' answers to the form–recognition and meaning-recognition tests were calculated for each group. The results of frequency and percentages were presented in the tables and bar graphs for each target word. The frequency and the percentages obtained show what answer is given to each item by the participants in each group.

Then means were calculated for each word in order to find whether there are statistically significant differences among the groups in the form-recognition tests. For the mean analysis of the form-recognition; the following scoring scale test was adapted from Paribakth and Wesche (1997) which was used to find the differences within the groups. The scoring scale was as follows:

Form-recognition

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means (Correct definition)	**IV**. I know what this word means (Incorrect definition)
score	1	2	3	2

The data was then submitted to one-way analysis of variance (ANOVA) to analyze the target word scores across the three groups for each target word. Later, a Tukey multiple comparisons test was performed to further analyze the target word form-recognition and meaning-recognition among three groups. Tukey test compared groups in terms of word learning and showed whether there is a significant interaction between word learning and the treatment in each group and among groups.

The key for the scoring scale was prepared before the data analysis. A colleague from the same department with the researcher checked the participants' answers independently and then the researcher and the judge compared their results and got agreement on whether to accept the answer as correct or incorrect if the participants said they know the word and gave the definition (Appendix III, the key of the incorrect answers).

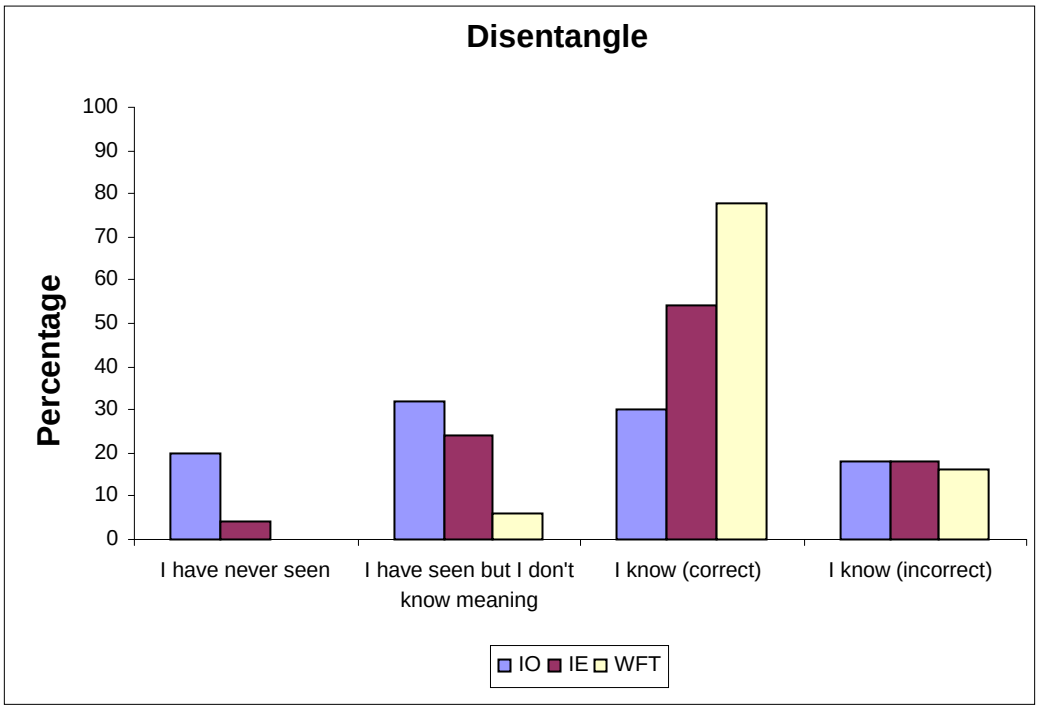
The following part gives the results of analyses.

4.1. The frequency and percentage analysis for the form-recognition and the meaning-recognition for each TW

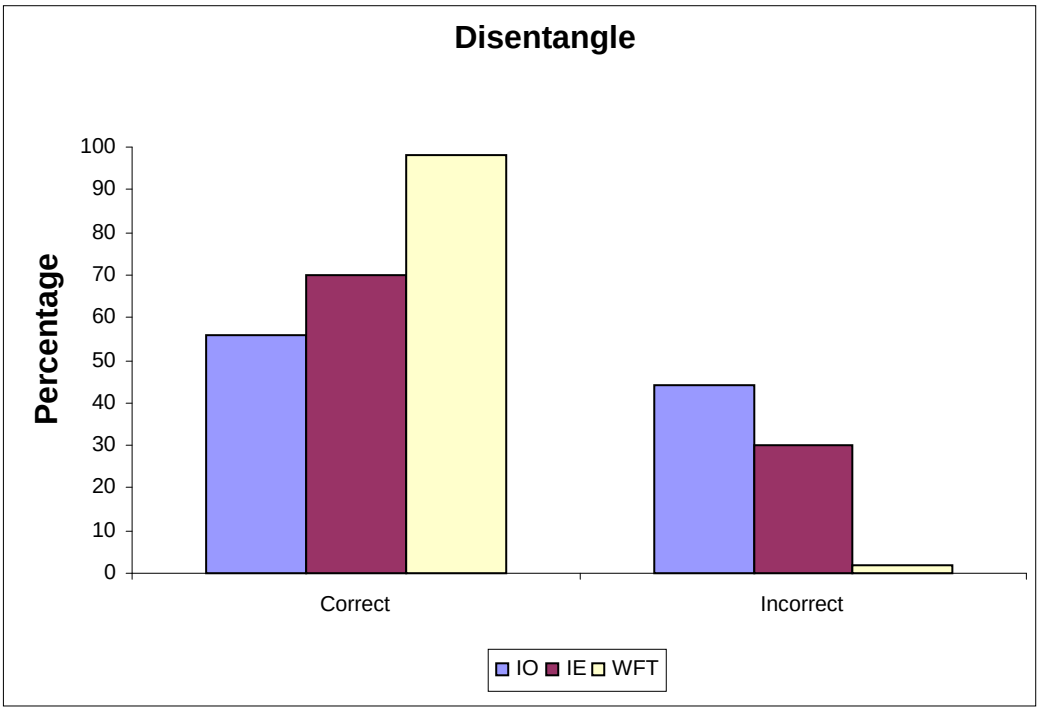
The purpose of the study was to investigate the effect of three treatments on the participants' target word learning. Frequencies and percentages of the participants' answers to the form–recognition and the meaning-recognition tests were calculated to show how each group performed in these tests for each TW (Appendix IV).

For the Target Word 1, **disentangle**, bar graphs for the form-recognition and meaning-recognition are given in Graph 1 and Graph 2.

Graph 1: **disentangle**, Form-recognition



Graph 2: **disentangle**, Meaning-recognition



The results show that while 20 % of the participants in the IO group stated that they have never seen the word “disentangle” before, only 4 % of the participants in the IE group said they have never seen TW “disentangle” before. None of the participants in the WFT group said they have never seen “disentangle” before.

In the IO group, 32% of the participants, in the IE group 24% and in the WFT group 6% of the participants indicated that they have seen the word “disentangle” before but they do not know its meaning. In the IO group 30%, in the IE group 54% and in the WFT group 78% stated that they know the word “disentangle” and gave the correct definition.

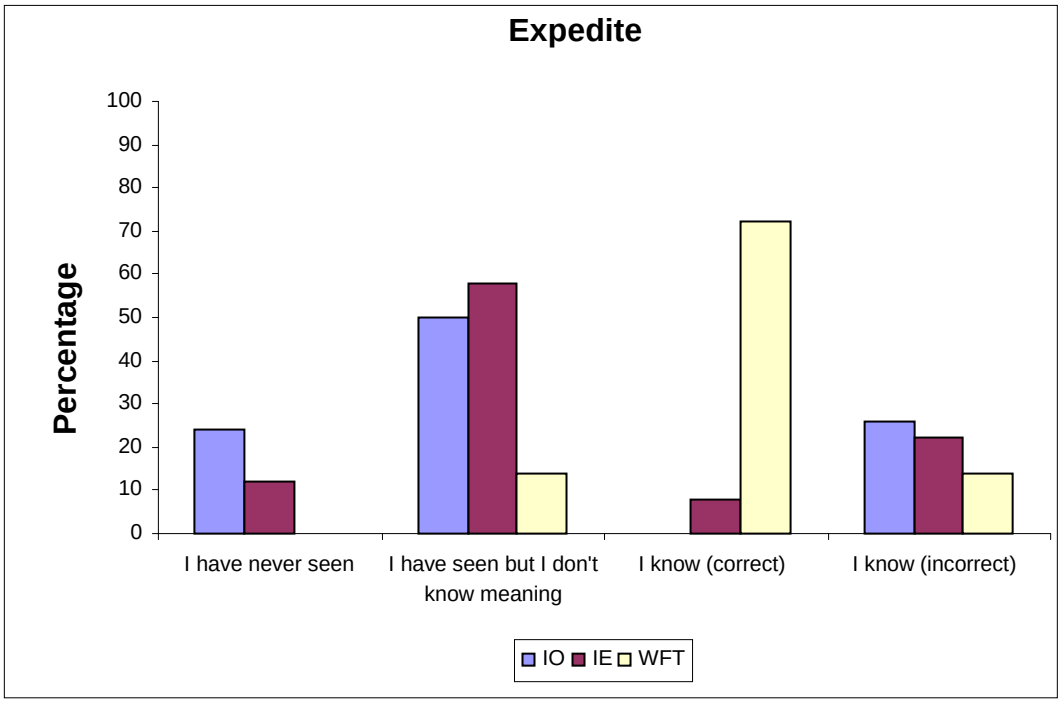
As the results show, more participants in the WFT group recognized the TW-disentangle than the participants in the IE and IO groups.

According to the meaning recognition test results 56% of the IO group, 70% of the IE group and 98% of the WFT group matched the correct definition with TW disentangle. These results indicate that for the meaning-recognition test most participants in the

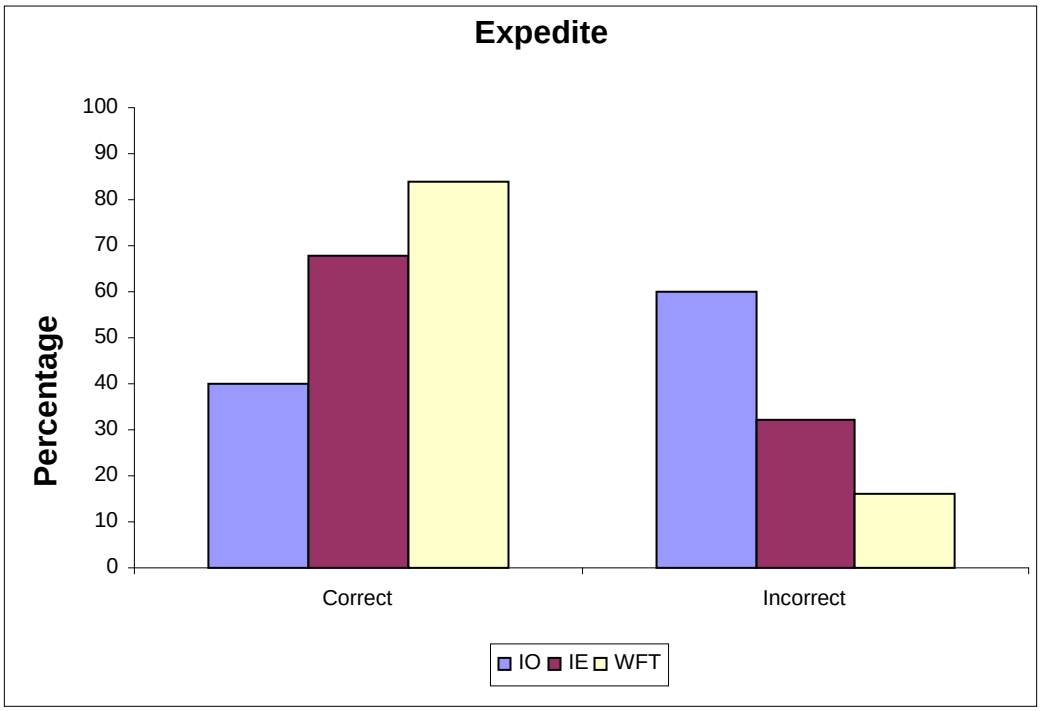
WFT group could give the correct definition of the TW “disentangle”. Meaning-recognition test shows that WFT group scored better than IE and IO groups.

Frequencies and percentages were calculated for form-recognition test and meaning-recognition test for TW “expedite”. Bar graphs for the Target Word **expedite** are given in Graph 3 and Graph 4.

Graph 3: **expedite**, Form-recognition



Graph 4: **expedite**, Meaning-recognition



The results show that in the IO group 50% of the participants said they have seen the word “expedite” before but they do not know meaning. 12% said they have never seen the word “expedite” before.

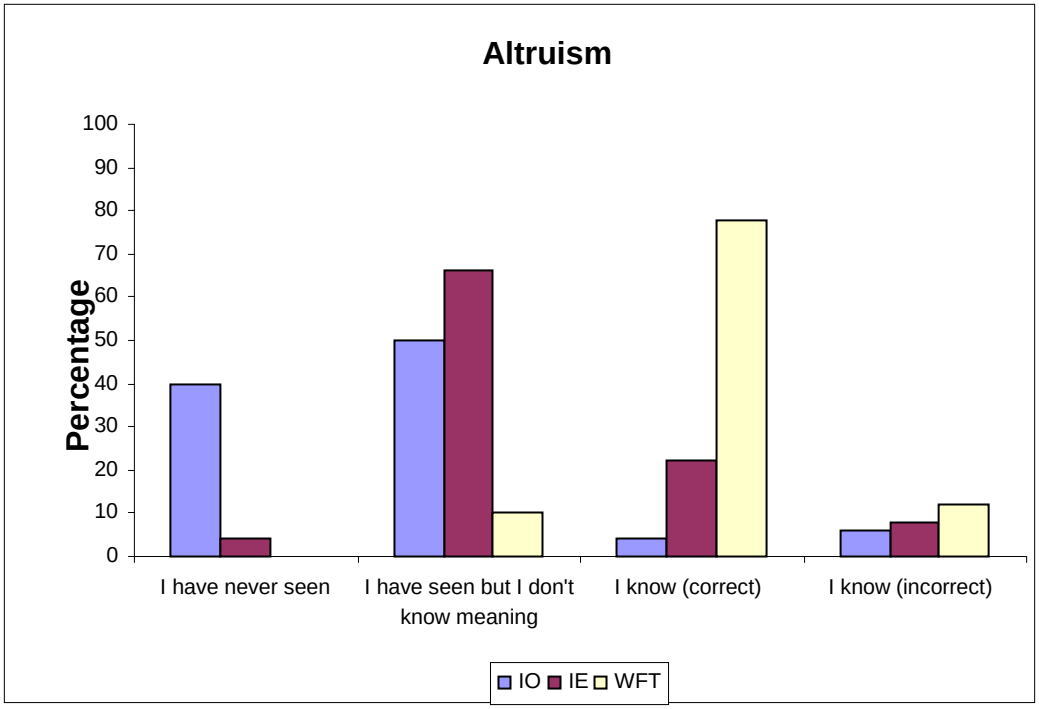
58% of the participants in the IE group said they have seen the word “expedite” before but they do not know the meaning of this word.

In the WFT group, only 14% of the participants said they have never seen this word before but 72% of the participants indicated that they know the word and they gave the meaning correctly.

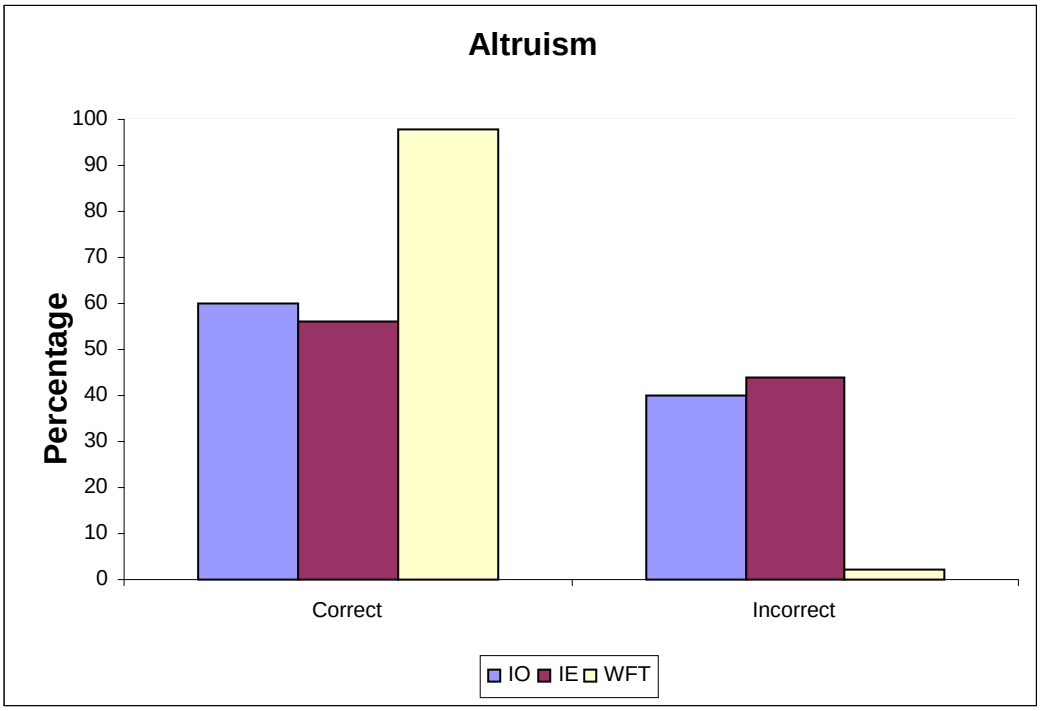
According to the results of the meaning-recognition test, 40% of IO group, 68% of IE group and 84% of WFT group matched the correct definition with TW expedite in the second text.

For the Target Word **altruism**, bar graphs are given in Graph 5and Graph 6.

Graph 5: **altruism,** Form-recognition



Graph 6: **altruism,** Meaning-recognition



The results for TW **altruism** show that in the IO group 40% of the participants said that they have never seen the word “altruism” before. 50% of the participants said they have seen the word “altruism” before but they do not know meaning. Only 4% of the

participants in the IO group said they know the meaning and gave the meaning correctly.

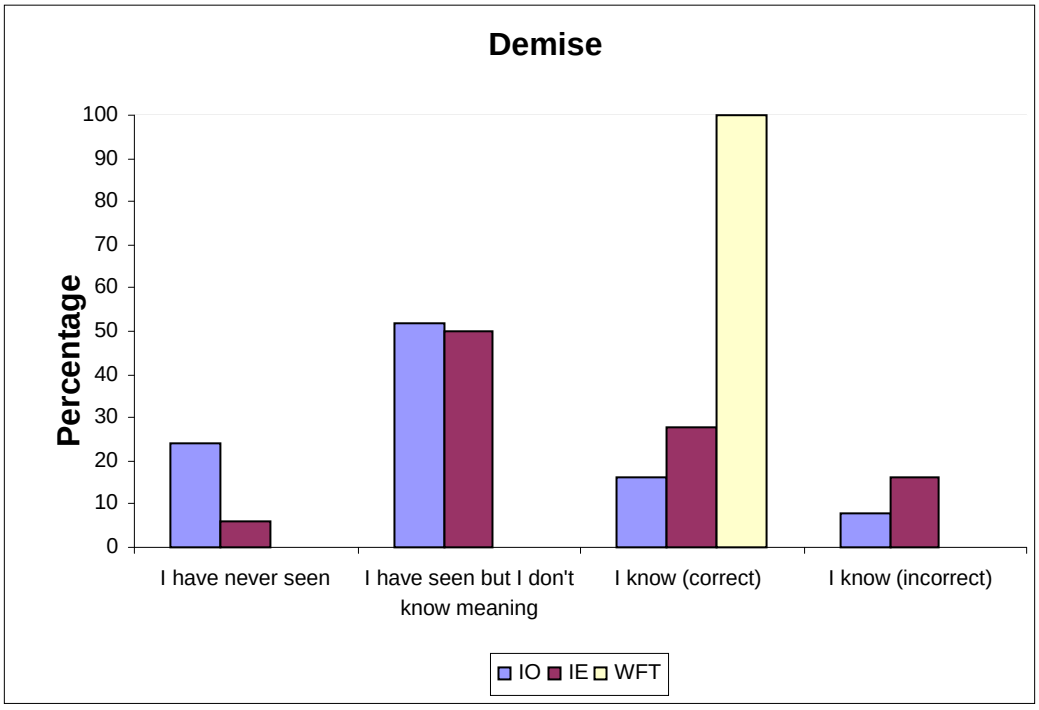
66% of the participants in the IE group said they have seen the word “altruism” before but they do not know the meaning of this word. Only 4% of the participants in the IE group stated that they have never seen this word before.

In the WFT group, only 10% of the participants said they have seen this word before but they do not know what it means. 78% of the participants indicated that they know the word and they gave the meaning correctly. No participant in the WFT group said “I have never seen this word before”.

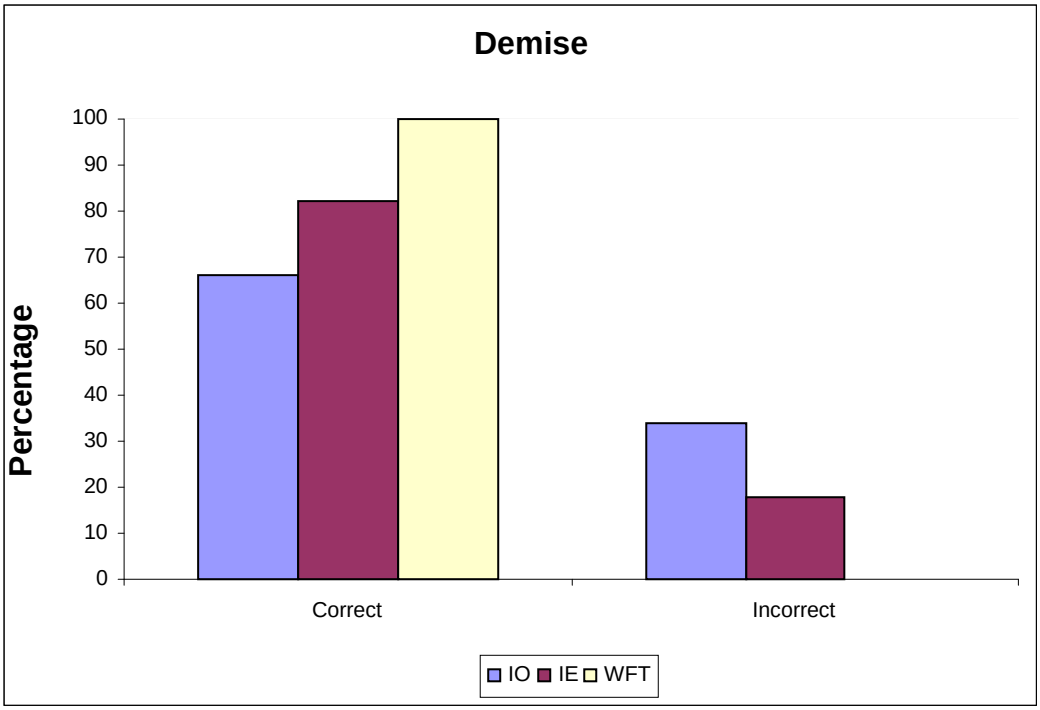
According to the results of the meaning-recognition test, 60 % of IO group, 56% of IE group and 98% of WFT group matched the correct definition of TW altruism in the third text.

The results for the Target Word **demise** are given in Graph 7 and Graph 8.

Graph 7: **demise,** Form-recognition



Graph 8: **demise,** Meaning-recognition



The results show that in the IO group 52% of the participants said they have seen the word “demise” before but they do not know meaning. 24% said they have never seen the word “demise” before.

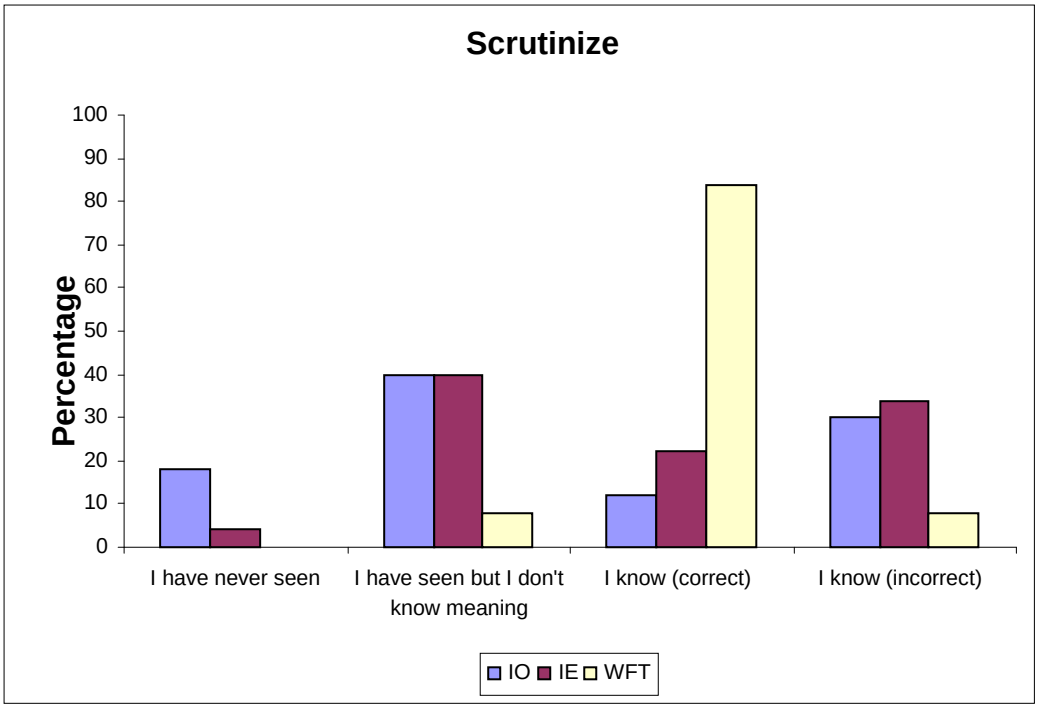
50% of the participants in the IE group said they have seen the word “demise” before but they do not know the meaning of this word.

In the WFT group, all of the participants stated that they know the word and they gave the meaning correctly. This means that WFT group recognizes the TW “demise”.

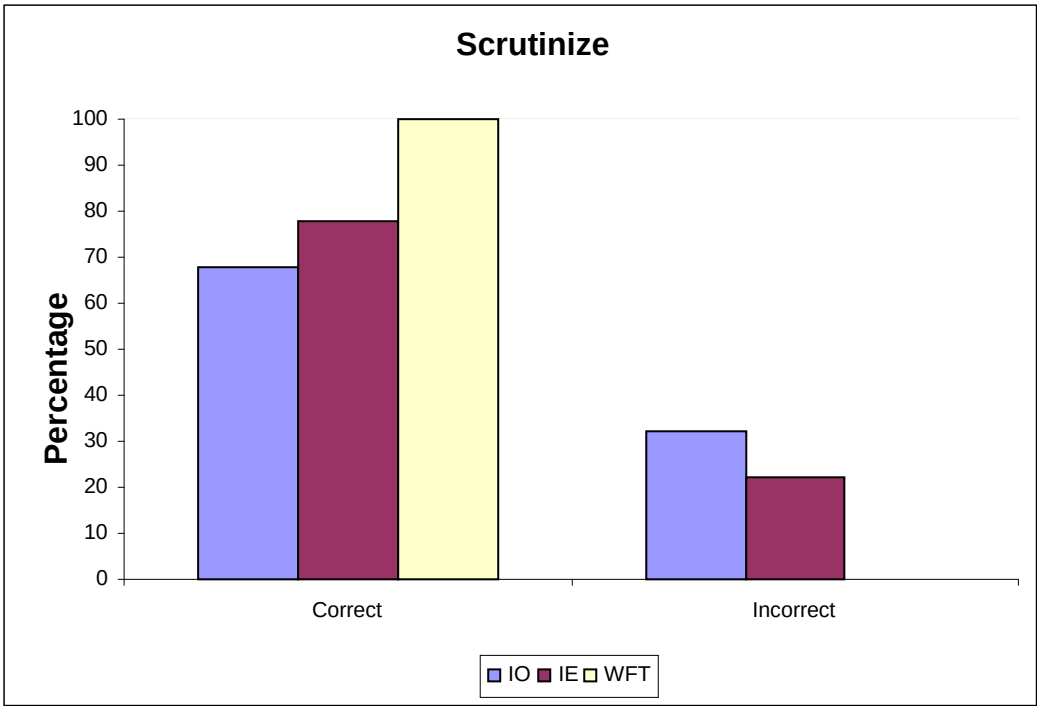
The results show that 66% of IO group and 82% of IE group matched the correct definition of TW “demise” in the fourth text. All of the WFT group matched the correct definition.

Frequencies and percentages were calculated for form-recognition test and meaning-recognition test for the Target Word **scrutinize**. The results are given in Graph 9 and Graph 10.

Graph 9: **scrutinize,** Form-recognition



Graph 10: **scrutinize,** Meaning-recognition

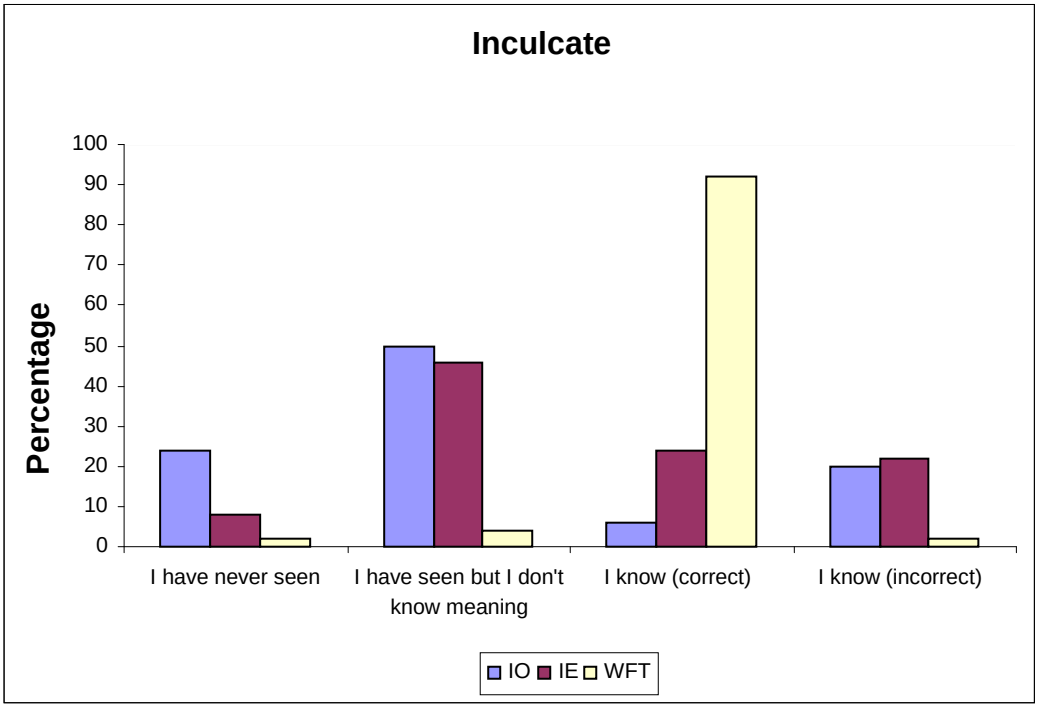


The results show that 18% of the participants in the IO group, 4% of the participants in the IE group and none of the participants in the WFT group stated that they have never seen the word “scrutinize” before.

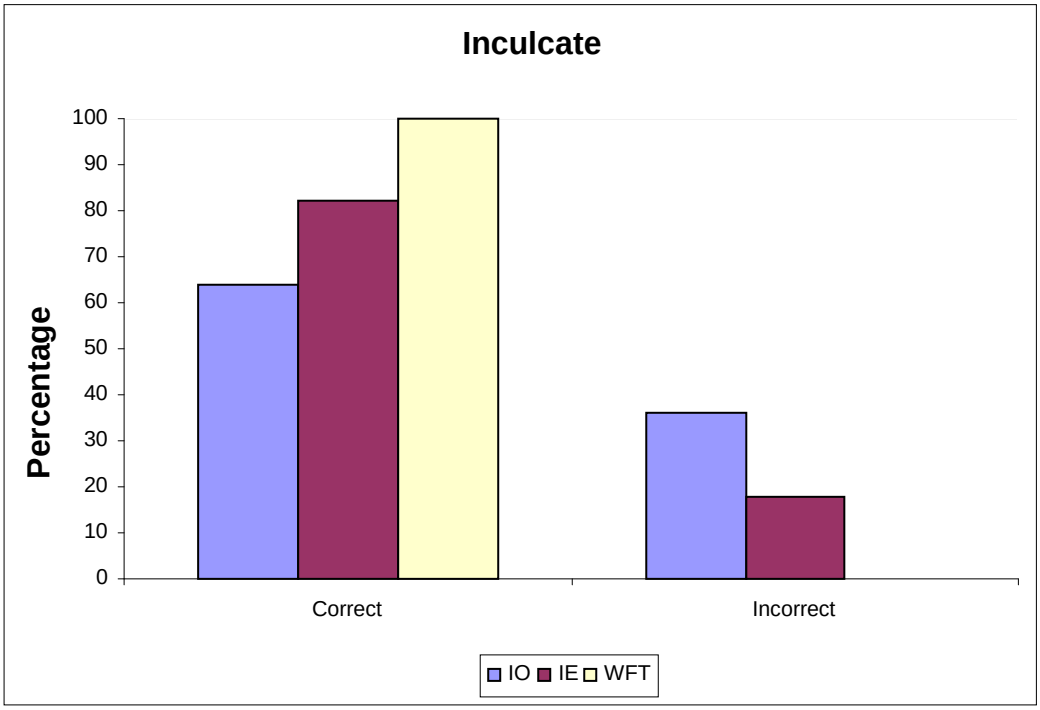
In the IO group, 40% of the participants, in the IE group 40% and in the WFT group 8% of the participants stated that they have seen the word “scrutinize” before but they do not know its meaning. In the IO group 12%, in the IE group 22% and in the WFT group 84% stated that they know the TW “scrutinize” and gave the correct definition.

For the Target Word **inculcate**, bar graphs are given in Graph 11 and Graph 12.

Graph 11: **inculcate,** Form-recognition



Graph 12: **inculcate,** Meaning-recognition



The results for TW **inculcate** show that in the IO group 24% said they have never seen the word “inculcate” before. 50% of the participants said they have seen the word “inculcate” before but they do not know its meaning. Only 6% of the participants in the IO group said they know the meaning and gave the meaning correctly.

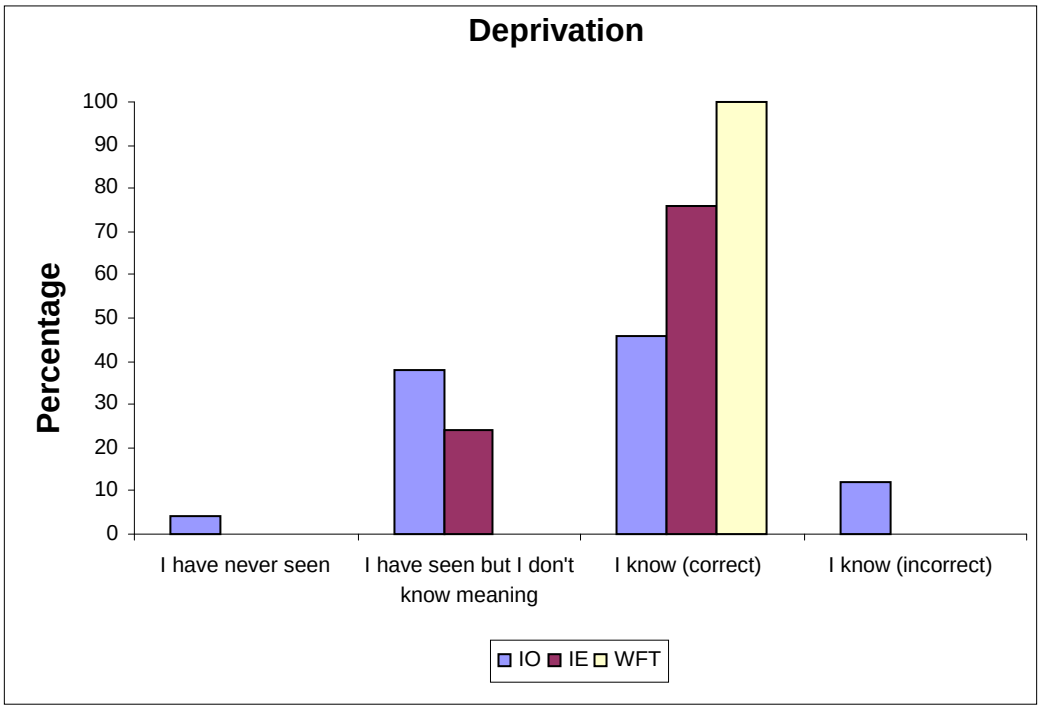
23% of the participants in the IE group said they have seen the word “inculcate” before but they do not know the meaning of this word. Only 4% of the participants in the IE group stated that they have never seen this word before.

In the WFT group, only 4% of the participants said they have seen this word before but they do not know what it means. 92% of the participants stated that they know the word and they gave the meaning correctly. 2% of the participants in the WFT group said “I have never seen this word before”.

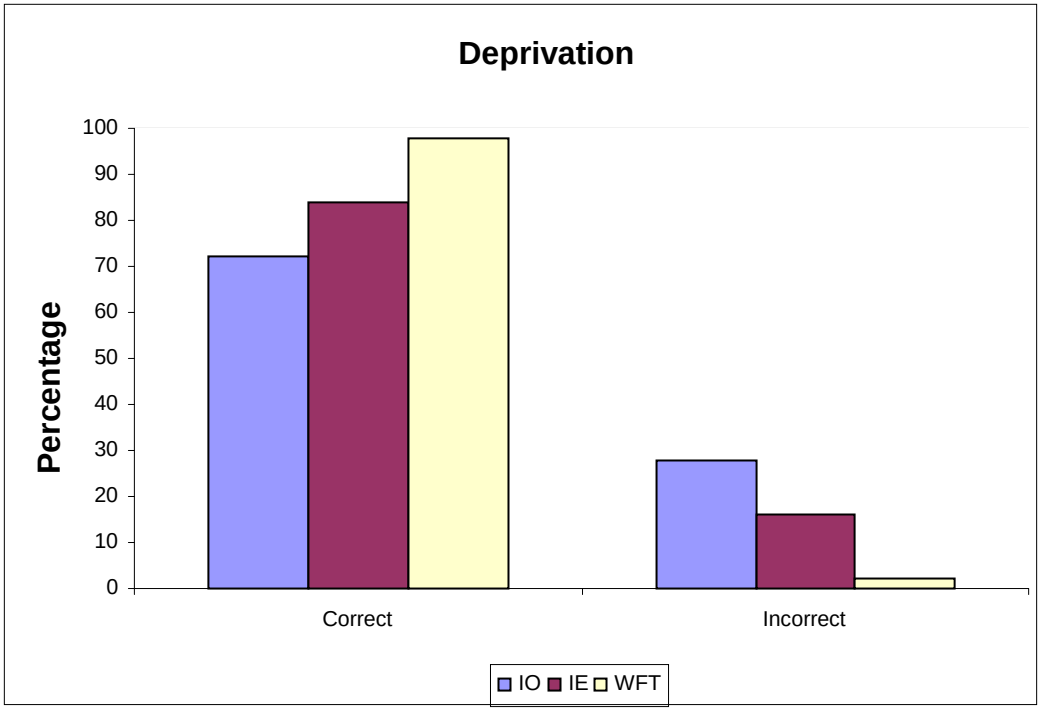
According to the results of meaning-recognition test, 64% of IO group, 82% of IE group and all WFT group matched the correct definition of TW “inculcate” in the sixth text.

Frequencies and percentages were calculated for form-recognition test and meaning-recognition test for the Target Word **deprivation**. The results are given in Graph 13 and Graph 14.

Graph 13: **deprivation,** Form-recognition



Graph 14: **deprivation,** Meaning-recognition



In the IO group 38% of the participants said they have seen the word “deprivation” before but they do not know its meaning. 4 % said they have never seen the word “deprivation” before.

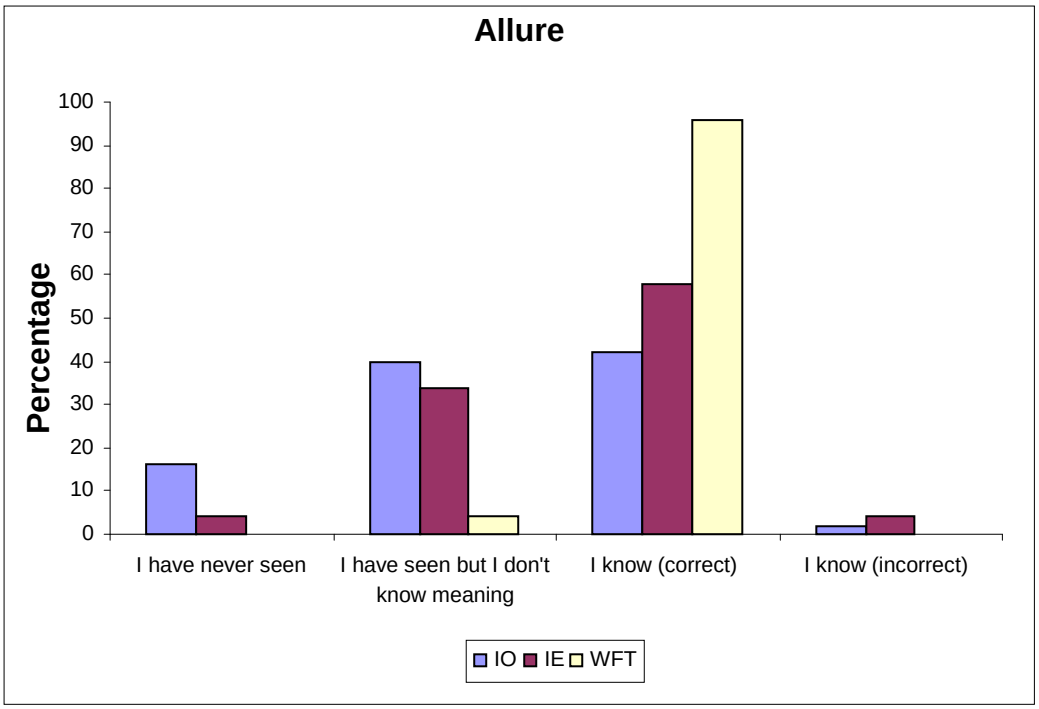
24% of the participants in the IE group said they have seen the word “deprivation” before but they do not know the meaning of this word.

In the WFT group, all of the participants stated that they know the word and they gave the meaning correctly. This means that WFT group recognizes the TW “deprivation”.

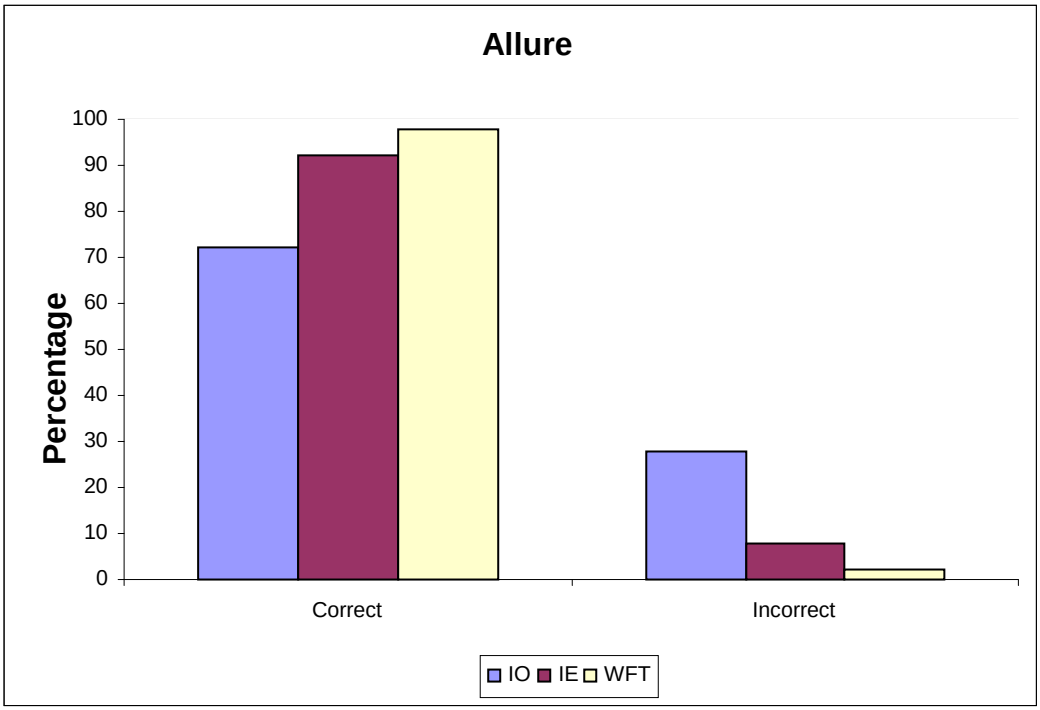
According to meaning-recognition test results, 72% of IO group and 84% of IE group and 98% of WFT group matched the correct definition of TW “deprivation”.

Frequencies and percentages were calculated for the form-recognition test and the meaning-recognition test for the Target Word **allure**. The results are given in Graph 15 and Graph 16.

Graph 15: **allure,** Form-recognition



Graph 16: **allure,** Meaning-recognition



The results show that in the IO group 16% said they have never seen this word before. 40% of the participants said they have seen the word “allure” before but they do not

know its meaning. 42% of the participants in the IO group said they know the meaning and gave the meaning correctly.

34% of the participants in the IE group said they have seen the word “allure” before but they do not know the meaning of this word. Only 4% of the participants in the IE group stated that they have never seen this word before.

In the WFT group, 4% of the participants said they have seen this word before but they do not know what it means. 96% of the participants stated that they know the word “allure” and they gave the meaning correctly. None of the participants in the WFT group said “I have never seen this word before”.

According to the results meaning-recognition test, 72 % of IO group, 92% of IE group and 98% of WFT group matched the correct definition of TW “allure” in the eighth text. (The Tables showing all target word scores for each group are given in Appendix D).

4.2. Total Frequency and percentage results for each group

To measure TW form-recognition and meaning-recognition, frequency and percentages were calculated.

Total scores were also calculated to compare the results of form and meaning recognition tests. The results are given in Table 2 for the form-recognition and in Table 3 for the meaning-recognition.

Table 2: Total Frequency and Percentages (Form-recognition)

	IO		IE		WFT	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
I have never seen	85	21.25	21	5.25	1	0.25
I have seen but I don't know meaning	176	44	171	42.75	23	5.75
I know (correct)	78	19.5	146	36.5	350	87.5
I know (incorrect)	61	15.25	62	15.5	26	6.5
Total	400	100	400	100	400	100

Table 3: Total Frequency and Percentages (Meaning-recognition)

	IO		IE		WFT	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Correct	249	62.25	306	76.5	388	97
Incorrect	151	37.75	94	23.5	12	3
Total	400	100	400	100	400	100

On the form-recognition test, about 22% of the participants in IO group said “I have never seen this word before”, and 44% of the participants said “I have seen this word before but I do not know its meaning”. This result indicates that more participants in the IO group recognized the form of the TW.

On the meaning-recognition test, the results show that 63% of the participants gave the correct definition of the word. This result shows that incidental vocabulary learning may occur -both form and meaning- while learners are engaged in reading when the necessary conditions like enough exposure and context clues to infer meaning, are provided.

The results of all TWs for the IE group show that only 5% of the participants said they had never seen the TW before. In general, 43% of the participants said “I have seen this word before but I do not know its meaning”. This result indicates that input enhancement is useful way for the noticing of the TW; participants were able to recognize the TWs. 37% of the participants said they knew the meaning and most of the meanings were correct. On the meaning-recognition test, 77% of the participants

identified the correct definition among other words and meanings. In sum, the results indicate that input enhancement is a useful way of recognizing the form and meaning of a new word.

In the WFT group, only 0.25% of the participants said they had never seen this word before. 6% of the participants said "I have seen this word before but I do not know meaning". 88% of the participants said they knew the meaning and they gave the correct meaning. On the meaning-recognition test, 97% of the participants identified the correct definition of the TWs. These results show that completing tasks that focus on vocabulary is a useful way for recognizing the form and the meaning of the vocabulary.

As the scores for each of the TW shows, more participants in the IO group say they have never seen the TW before as compared to IE and WFT groups. More participants in the WFT group say "I know this word" and the given meaning is correct. This result indicates that WFT group recognizes the forms of TWs better when compared to IO and IE groups.

When overall results of frequency and percentages are concerned, WFT group performed better both on the form-recognition and meaning-recognition when compared to IE and IO groups. IE group performed better than IO group. Frequency and percentage analyses show that reading only is not the most efficient way to learn vocabulary as claimed by Krashen (1989) and Coady (1993).

The data demonstrates that learners gained in their lexical knowledge of the target words through input only, input enhancement and word-focused activities. The analysis shows that input enhancement group can recognize the form of the unknown word.

Input Enhancement group, who read texts which contained typographically enhanced target words (written in bold and underlined), identified these words as unfamiliar. This let them notice the target words and go through a lexical inferencing process. The higher rates in the input enhancement group as compared to input only show that

noticing is important in word inferencing process. It seems that typographical input enhancement has allowed for a higher level of awareness than might normally occur in reading and resulted in higher scores.

The participants in the word-focused tasks group, first completed a matching exercise, and then completed a fill-in-the-blanks exercise as word-focused tasks. The results of the word-focused tasks group show that completing vocabulary tasks results in the form and meaning recognition of the target words. The findings suggest that using matching and fill-in-the-blank tasks proved to be useful for word learning.

Moreover, the purpose of the present study is to investigate group performances to learn about their vocabulary gains. Although it is not in the scope of this study, it might be interesting to note that the results show some differences in the learning of each target word even within the same group. For example, in the IO group for the target word “allure” only 4% said “I have never seen this word before” but for the target word “altruism” 40% said “I have never seen this word before”. In the WFT group for the target word “altruism” 10% said “I have seen this word before but I do not know what it means”. There might be several reasons of the differences in the learning of these words. First of all, although the words were chosen form the same frequency band, some of them are abstract, therefore; these may be more difficult to learn. Another reason may be related to the text, although the texts were analyzed for readability, the context may not provide enough clues for the learners to infer the meaning of the target word. The text might be understandable to the learners without knowing the meaning of the target word, therefore; they might not need to infer the meaning while reading.

4.3. Mean analysis for form-recognition and meaning-recognition for each TW

In order to find the average scores of groups mean analyses were calculated. (Appendix V).

The results of IO group show that most of the participants say they have never seen the TWs *expedite*, *altruism* and *inculcate* although they have encountered these words six

times in the texts while reading for comprehension. In the IO group, for the TWs *disentangle, demise, scrutinize, deprivation* and *allure* most of the participants say they have seen these words but they do not know what it means or they say they know these words but given meaning is not correct. This result shows that the participants in the IO group are able to recognize some of the form of the TWS.

For the target words *disentangle, expedite, altruism, demise, scrutinize, inculcate, deprivation* and *allure,* central tendency of the scores in the form- recognition test shows that in the IE group most of the participants score "I know the word but I do not know the meaning" or "I know the meaning" but the given meaning is incorrect. These results indicate that IE group recognizes the form of the target words.

The results of WFT group show that most participants say "I know the word" for TWs *disentangle, expedite, altruism, demise, scrutinize, inculcate, deprivation* and *allure* and given meaning for each of the TW is correct. These results indicate that WFT group recognizes and knows the meaning of TWs.

The results of mean analyses show that on the meaning-recognition test, WFT group got an approximate score of 8 for each of the TWs. This highest score means that most of the participants in the WFT group matched the TWs with the correct definitions; however, IE and IO groups were not as successful as the WFT group in matching the correct definition of the TW.

4.4. ANOVA results for form-recognition and meaning-recognition for each TW

The frequency and mean analyses show that three instructional treatments have an effect on student scores. One-way ANOVA compared the means of three different treatments to find out whether there is a statistically significant difference among the scores of IO, IE and WFT groups. Table 4 shows the results of One-way ANOVA for form-recognition test.

Sum of squares is a degree in order to find if the result is significant, it is the square number of mean square. Degree of freedom (df) is a parameter which determines the shape of F distribution. F shows us whether the results are significant or not.

Table 4: ANOVA (Form-recognition test)

		Sum of Squares	df	Mean Square	F	Sig.
disentangle	Between Groups	14,440	2	7,220	22,582	,000
	Within Groups	47,000	147	,320		
	Total	61,440	149			
expedite	Between Groups	25,653	2	12,827	64,750	,000
	Within Groups	29,120	147	,198		
	Total	54,773	149			
altruism	Between Groups	32,520	2	16,260	67,368	,000
	Within Groups	35,480	147	,241		
	Total	68,000	149			
demise	Between Groups	29,293	2	14,647	62,408	,000
	Within Groups	34,500	147	,235		
	Total	63,793	149			
scrutinize	Between Groups	20,693	2	10,347	46,598	,000
	Within Groups	32,640	147	,222		
	Total	53,333	149			
inculcate	Between Groups	29,560	2	14,780	60,452	,000
	Within Groups	35,940	147	,244		
	Total	65,500	149			
deprivation	Between Groups	8,493	2	4,247	24,674	,000
	Within Groups	25,300	147	,172		
	Total	33,793	149			
allure	Between Groups	12,280	2	6,140	20,645	,000
	Within Groups	43,720	147	,297		
	Total	56,000	149			

The results of one-way ANOVA test demonstrate that $p<0,05$. for each of the TW. The results show that there is a significant difference among three groups in their form-recognition of all TWs. Table 5 shows the results of One-way ANOVA for meaning-recognition test.

Table 5: ANOVA (Meaning-recognition test)

		Sum of Squares	df	Mean Square	F	Sig.
disentangle	Between Groups	58,333	2	29,167	5,999	,003
	Within Groups	714,760	147	4,862		
	Total	773,093	149			
expedite	Between Groups	224,920	2	112,460	27,355	,000
	Within Groups	604,340	147	4,111		
	Total	829,260	149			
altruism	Between Groups	152,040	2	76,020	23,121	,000
	Within Groups	483,320	147	3,288		
	Total	635,360	149			
demise	Between Groups	165,173	2	82,587	31,386	,000
	Within Groups	386,800	147	2,631		
	Total	551,973	149			
scrutinize	Between Groups	94,240	2	47,120	17,047	,000
	Within Groups	406,320	147	2,764		
	Total	500,560	149			
inculcate	Between Groups	107,573	2	53,787	24,123	,000
	Within Groups	327,760	147	2,230		
	Total	435,333	149			
deprivation	Between Groups	53,080	2	26,540	10,292	,000
	Within Groups	379,080	147	2,579		
	Total	432,160	149			
allure	Between Groups	224,760	2	112,380	33,735	,000
	Within Groups	489,700	147	3,331		
	Total	714,460	149			

The results show that $p<0,05$ for each TW which means that there is a statistically significant difference among three groups on the meaning-recognition test.

4.5. Tukey multiple comparisons test results for the form-recognition and the meaning-recognition for each TW

Research question one asked which one of the treatments leads to better form and meaning recognition of the target vocabulary. To answer this question and to further analyze the difference among the three groups, a Tukey multiple comparisons test was performed both for form-recognition and meaning-recognition tests. Since there is a statistically significant difference among the groups according to one-way ANOVA test, to find out the difference among the groups, Tukey analysis was run. The results of Tukey test for form-recognition are given in Table 6.

Table 6: Tukey (Form-recognition)

	(I) Factor	(J) Factor	Mean Dif.	Std. Error	Sig.
disentangle	IO	IE	-,52000(*)	,11309	,000
		WFT	-,74000(*)	,11309	,000
	IE	IO	,52000(*)	,11309	,000
		WFT	-,22000	,11309	,130
	WFT	IO	-,74000(*)	,11309	,000
		IE	,22000	,11309	,130
expedite	IO	IE	-,20000	,08902	,067
		WFT	-,96000(*)	,08902	,000
	IE	IO	,20000	,08902	,067
		WFT	-,76000(*)	,08902	,000
	WFT	IO	,96000(*)	,08902	,000
		IE	-,76000(*)	,08902	,000
altruism	IO	IE	-,54000(*)	,09826	,000
		WFT	-1,14000(*)	,09826	,000
	IE	IO	,54000(*)	,09826	,000
		WFT	-,60000(*)	,09826	,000
	WFT	IO	1,14000(*)	,09826	,000
		IE	,60000(*)	,09826	,000
demise	IO	IE	-,26000(*)	,09689	,022
		WFT	-1,04000(*)	,09689	,000
	IE	IO	,26000(*)	,09689	,022
		WFT	-,78000(*)	,09689	,000
	WFT	IO	1,04000(*)	,09689	,000
		IE	,78000(*)	,09689	,000
scrutinize	IO	IE	-,24000(*)	,09424	,032
		WFT	-,88000(*)	,09424	,000
	IE	IO	,24000(*)	,09424	,032
		WFT	-,64000(*)	,09424	,000
	WFT	IO	,88000(*)	,09424	,000
		IE	,64000(*)	,09424	,000
inculcate	IO	IE	-,32000(*)	,09889	,004
		WFT	-1,06000(*)	,09889	,000
	IE	IO	,32000(*)	,09889	,004
		WFT	-,74000(*)	,09889	,000
	WFT	IO	1,06000(*)	,09889	,000
		IE	,74000(*)	,09889	,000
deprivation	IO	IE	-,34000(*)	,08297	,000
		WFT	-,58000(*)	,08297	,000
	IE	IO	,34000(*)	,08297	,000
		WFT	-,24000(*)	,08297	,012
	WFT	IO	,58000(*)	,08297	,000
		IE	,24000(*)	,08297	,012
allure	IO	IE	-,32000(*)	,10907	,011
		WFT	-,70000(*)	,10907	,000
	IE	IO	,32000(*)	,10907	,011
		WFT	-,38000(*)	,10907	,002
	WFT	IO	,70000(*)	,10907	,000
		IE	-,38000(*)	,10907	,002

The mean difference is significant at the .05 level according to Tukey test. The results of Tukey test show that for the TW disentangle, since p<0,05 there is a statistically significant difference between IO-IE, IO-WFT, IE-WFT groups. This result means that IO group got the lowest scores on the form-recognition test.

According to the results of Tukey test, for TW expedite p<0,05 between the groups IO-WFT and IE-WFT. This means that there is a statistically significant difference between the groups IO-WFT and IE-WFT. This result may be caused by the high scores of WFT group on the form-recognition test.

The results of Tukey test for TW altruism show that since p<0,05 there is a statistically significant difference between IO-IE and IO-WFT and IE-WFT groups. This result may be caused by the high scores of WFT group or low scores of IO group on the form-recognition test.

The results of Tukey Test show that p<0,05 between the groups IO-IE, IO-WFT and IE-WFT in the form-recognition test for TW demise. This means that there is a statistically significant difference between the groups IO, IE and WFT in their TW recognition for TW “demise”. This result may be caused by the high scores of WFT group or low scores of IO group on the form-recognition test.

According to the results of Tukey test, p<0,05 between the groups IO, IE and WFT. This means that there is a statistically significant difference among three groups in their TW recognition for “scrutinize”. This result may be caused by the high scores of WFT group or low scores of IO and IE groups on the form-recognition test.

According to the results, for TW inculcate p<0,05 between the groups IO-IE, IO-WFT and IE-WFT. This means that there is a statistically significant difference between the groups IO-IE, IO-WFT and IE-WFT. This result may be caused by the high scores of WFT group on the form-recognition test.

The results of Tukey Test show that p<0,05 between the groups IO-IE, IO-WFT and IE-WFT in the form-recognition test for TW deprivation. This means that there is a

statistically significant difference between the groups IO, IE and WFT in their TW recognition for TW “deprivation”. This result may be caused by the high scores of WFT group or low scores of IO group on the form-recognition test.

Lastly, for TW “allure” $p<0,05$ between the groups IO-IE, IO-WFT and IE-WFT. This means that there is a statistically significant difference between the groups IO-IE, IO-WFT and IE-WFT. This result may be caused by the high scores of WFT group on the form-recognition test.

In general, these results indicate that there is a statistically significant difference between WFT-IE and WFT-IO group. This result indicates that WFT group got better scores when compared to IO and IE groups on the form-recognition test.

The results of Tukey test for meaning-recognition are given in Table 7.

Table 7: Tukey (Meaning-recognition)

	(I) Factor	(J) Factor	Mean Dif.	Std. Error	Sig.
disentangle	IO	IE	-,50000	,44101	,495
		WFT	-1,50000(*)	,44101	,002
	IE	IO	,50000	,44101	,495
		WFT	-1,00000	,44101	,064
	WFT	IO	1,50000(*)	,44101	,002
		IE	1,00000	,44101	,064
expedite	IO	IE	-1,06000(*)	,40552	,027
		WFT	-2,96000(*)	,40552	,000
	IE	IO	1,06000(*)	,40552	,027
		WFT	-1,90000(*)	,40552	,000
	WFT	IO	2,96000(*)	,40552	,000
		IE	1,90000(*)	,40552	,000
altruism	IO	IE	,18000	,36265	,873
		WFT	-2,04000(*)	,36265	,000
	IE	IO	-,18000	,36265	,873
		WFT	-2,22000(*)	,36265	,000
	WFT	IO	2,04000(*)	,36265	,000
		IE	2,22000(*)	,36265	,000
demise	IO	IE	-,52000	,32443	,248
		WFT	-2,44000(*)	,32443	,000
	IE	IO	,52000	,32443	,248
		WFT	-1,92000(*)	,32443	,000
	WFT	IO	2,44000(*)	,32443	,000
		IE	1,92000(*)	,32443	,000
scrutinize	IO	IE	-,08000	,33251	,969
		WFT	-1,72000(*)	,33251	,000
	IE	IO	,08000	,33251	,969
		WFT	-1,64000(*)	,33251	,000
	WFT	IO	1,72000(*)	,33251	,000
		IE	1,64000(*)	,33251	,000
inculcate	IO	IE	-,28000	,29864	,617
		WFT	-1,92000(*)	,29864	,000
	IE	IO	,28000	,29864	,617
		WFT	-1,64000(*)	,29864	,000
	WFT	IO	1,92000(*)	,29864	,000
		IE	1,64000(*)	,29864	,000
deprivation	IO	IE	,08000	,32117	,966
		WFT	-1,22000(*)	,32117	,001
	IE	IO	-,08000	,32117	,966
		WFT	-1,30000(*)	,32117	,000
	WFT	IO	1,22000(*)	,32117	,001
		IE	1,30000(*)	,32117	,000
allure	IO	IE	-,96000(*)	,36504	,025
		WFT	-2,94000(*)	,36504	,000
	IE	IO	,96000(*)	,36504	,025
		WFT	-1,98000(*)	,36504	,000
	WFT	IO	2,94000(*)	,36504	,000
		IE	-1,98000(*)	,36504	,000

The results of Tukey test for “disentangle” indicate that on the meaning-recognition test there is a statistically significant difference between groups IO and WFT. This statistically significant result may be caused by the high scores of WFT or low scores of IO group.

For the TW “expedite” the results of Tukey test show that there is statistically significant difference among groups since $p<0,05$. According to these results, there is a significant difference between IO-IE, IO-WFT and IE-WFT groups. This result indicates that more participants in the WFT group matched the correct definition for TW expedite than IO and IE groups.

The results of Tukey test for “altruism” show that in the comparisons among groups since $p<0,05$, there is a statistically significant difference between IO-WFT and IE-WFT groups. According to these results, more participants in the WFT group matched the correct definition for TW “altruism” than IO and IE groups.

The results of Tukey test show that $p<0,05$ in the comparisons between IO-WFT and IE-WFT groups. These results indicate that there is a statistically significant difference between IO-WFT and IE-WFT groups. According to these results, more participants in the WFT group matched the correct definition for TW “demise” than IO and IE groups.

According to the results, for TW “scrutinize” $p<0,05$ between the groups IO-WFT and IE-WFT groups. This means that there is a statistically significant difference between the groups IO-IE and IE-WFT. This result indicates that more participants matched the correct definition for TW “scrutinize” than IO and IE groups.

The comparisons between IO-WFT and IE-WFT groups for the TW “inculcate” show that $p<0,05$. These results indicate that there is a statistically significant difference between IO-WFT and IE-WFT groups. According to these results, more participants in the WFT group matched the correct definition for TW “inculcate” than IO and IE groups.

For the TW “deprivation” p<0,05 between IO-WFT and IE-WFT groups. According to these results, more participants in the WFT group matched the correct definition for TW “deprivation” than IO and IE groups.

According to the results, for TW “allure” p<0,05 between the groups IO-WFT, IO-IE and IE-WFT groups. This means that there is a statistically significant difference between the groups IO-IE, IO-WFT and IE-WFT. This result indicates that fewer participants matched the correct definition in the IO group than IE and WFT groups and more participants matched the correct definition for TW “allure” than IO and IE groups.

In general, the results of Tukey test show that there is statistically significant difference between WFT-IO and WFT-IE groups. This result indicates that WFT group got better results on meaning-recognition test, that is, more participants matched the correct definition of the TW.

These results show that when the participants are reading for comprehension, if they complete some vocabulary tasks after reading focusing on targeted vocabulary, they recognize form and meaning of the vocabulary, that is they learn better than only reading or reading in a text with enhanced unknown words.

4.6. Discussion of Findings

The findings of the present study provide evidence that inferring meaning is a productive way for receptive vocabulary learning. Most of the participants in the input only group state that “I have seen this word before but I do not know what it means”. This result shows that while reading for comprehension learners can recognize the form of an unknown word. As the meaning recognition test results of the input only group show more than half of the participants gave the correct definition of the target words. This result shows that word learning may occur while reading for comprehension. These results indicate that while reading for comprehension learners engage in hypothesis formation and testing about word meaning as suggested by Ellis (1994) and, the context that the text provides can help for the cognition of new words.

However, for the word learning to occur while reading for comprehension necessary conditions ─like enough exposures, context clues to infer meaning, the difficulty of the text羊 should be provided. The finding that input only group recognized form and meaning of the target vocabulary supports evidence for the view that vocabulary is learned incrementally over multiple encounters (Nagy, Herman and Anderson, 1985). Moreover, it was substantiated in Rott's (1999) study that receptive vocabulary knowledge can be enhanced during reading from a number of exposures. (In the present study, participants encountered each TW six times in the text).

In general most of the participants in the input enhancement group stated that they have seen this word before but they do not know what it means. This result shows that input enhancement group can recognize the form of the unknown word. When learners read the typographically enhanced word (written in bold and underlined), they identified these words as unfamiliar. This noticing let them go through a lexical inferencing process. The higher rates in the input enhancement group as compared to input only shows that noticing plays an important role in word inferencing process. It seems that typographical input enhancement has allowed for a higher level of awareness than might normally occur in reading and resulted in higher scores.

In the present study, the participants in the word-focused tasks group did one matching exercise which instructed them to match the words with definitions. Second exercise asked them to fill in the blanks in the sentences by using the given words one of which is the target word. The results of the word-focused tasks group show that most of the participants said they know the word and they gave the correct definition. This result shows that completing vocabulary tasks when learners read for comprehension results in the form and meaning recognition of the target words. The findings suggest that using matching and fill-in-the-blank tasks proved to be useful for word learning. The results of the present study substantiate Folse (2006), who argued that a fill-in-the-blank exercise is not only deep but also highly efficient. Concerning the type of word-focused tasks Folse (2006) has concluded that completing multiple fill-in-the-blank tasks is more effective than the task of writing original sentences.

Similarly, Hill and Laufer (2003) explored the different effects that message-oriented and form-oriented tasks might have on the retention of unfamiliar words which are encountered during reading. In each task learners looked up unfamiliar target words in an electronic dictionary. They concluded that the form-oriented tasks resulted in a higher number of acquired words.

In general, the results of the present study show that all of the treatments have an effect on learner scores and results when learning an unknown word.

4.7. Research Question One

Research question one asked which treatment ─ input only, typographical input enhancement or word-focused activities after reading ─ leads to better learning of unknown vocabulary. The results of the study showed that the group which completed word-focused activities after reading the texts gained more receptive knowledge of words as compared to input enhancement and input only groups. This result substantiated Paribakht and Wesche's (1997) study which compared reading only and word-focused activities.

Moreover, the results of the study showed that Input enhancement group, which read typographically enhanced texts, gained more receptive knowledge of words than input only group. This result did not corroborate Barcroft's (2003) study which concluded that no effect was found for enhancing 9 out of 24 words on learning rates for the enhanced words. A variety of reasons might have led to receptive vocabulary learning for two groups. In the IE group, target words were highlighted in boldface and were underlined during the instructional period. This typographical input enhancement might have led to noticing and thus inference that resulted in recognition of form and meaning of the unknown words on the tests. On the other hand, since Input only group that focused on reading comprehension only, might have failed to apperceive the target words.

The most important finding of the study showed that word-focused activities result in more receptive vocabulary gains as compared to input only and input enhancement groups.

One of the aims of the study was to explore which way ─ reading only, input enhancement and word-focused tasks ─ would promote word learning when learners read an L2 text for comprehension. Participants who carried out word-focused tasks outperformed the other two groups in the number of words recognized both in the form-recognition and meaning-recognition. Completing vocabulary activities appeared to have contributed to WFT group's significantly better performance than IE and IO groups on form-recognition and meaning-recognition tests. Completing a variety of vocabulary exercises seems to have tapped different levels of processing capabilities such as recognition and interpretation. WFT group completed a variety of exercises during the instructional period so; they had more opportunities to consciously go through an elaborated mental processing of these words. This finding supports evidence for the findings obtained by Paribakht and Wesche (1997, 1998) and Laufer (2003) that a word-focused activity after having read a text yields better results than only reading a text.

The findings can be interpreted according to the lexical processing model proposed by de Bot, Paribakht and Wesche (1997). They hypothesized that in order to infer the meaning of an unknown word read in the context, the letters of the word are matched with a lexeme which includes its morphological and form specification. When a sufficient match is made, this form must activate a lemma and must be matched with a concept. When an unknown word is encountered, the "not knowing" can be the result of a number of factors. The word form is given in the text, and the conceptual system contains the conceptual frames that are needed to go from a lexeme to a lemma and to a concept. One or more of these in-between steps can be the source of the "not knowing".

The results of the present study suggest that reading only did not prove to be effective in recognizing both the form and meaning. It can be concluded that the participants failed to fill the lemma with both syntactic and semantic information. Sternberg (1987)

has suggested that learning from context involves three elements: a. learner processes of knowledge acquisition as selective encoding, selective combination of new information, and selective comparison in relating this to previous knowledge b. contextual cues on which these processes operate and c. moderating variables as number of occurrences of the unknown word, importance of the unknown word to understand the context. It can be concluded that in learning vocabulary from reading, the factor which affects learners' gain of word form and meaning is their ability to infer meaning. In the present study learners may have had difficulty in determining the meaning or they may have failed to recognize the word as an unknown word since their focus was on comprehension. Moreover, the data from Input Enhancement group suggests that noticing the word did not prove to be sufficient for inferencing process as suggested by de Bot, Paribakht and Wesche (1997).

The findings for research question one can be interpreted referring to psycholinguistics which offers a series of studies that are related to implicit and explicit learning. According to experimental psychologists, explicit instruction and explicit learning are different. Explicit instruction does not necessarily lead to explicit learning. If the instruction is confusing and the rules are complex, the learner may get little out of explicit instruction. On the other hand, even without explicit instruction, a student may attempt to extract an explicit rule to characterize a set of input data. Reber (1993) basing his argument on the experiments with artificial grammars, has stated that subjects can learn rules underlying the complex pattern of cooccurrence of forms without consciously thinking about these rules, and this implicit learning may be superior to explicit (conscious) induction of the rules. Psychologists have shown that learners can use explicit instruction to allocate attention to specific types of input (Ellis, 1994; Schmidt, 1994) or consolidate their memory traces (Gupta & MacWhinney, 1997). According to psycholinguistic theory, some types of learning can occur implicitly. Explicit instruction works best for clear, simple structures (Green & Hecht, 1992), and instruction in hopelessly complex rules can be counterproductive.

The arguments on the explicit and implicit learning in the psycholinguistic theory were further analyzed by empirical studies in second language acquisition area. The studies on second language acquisition have demonstrated that focusing learners on form, by

teaching rules and correcting errors, is superior to implicit learning. Lightbown and Spada (1990) have stated that there is a link between the teacher's emphasis on certain grammatical structures and the learners' level of accuracy for the same structures. White, Spada, Lightbown, and Ranta (1991) found that form-focused instruction had a positive impact on ESL learners' ability to form questions correctly. On the other hand, according to Ellis (1993) and Sharwood Smith (1993) more limited role should be directed to focus on form at how learners perceive and process input. Thus, the cognitive-psychological literature and the psycholinguistic research on the learning of grammar provide some evidence for implicit learning, but not for learning rules without awareness. On the other hand, classroom studies of second language learning that have investigated the effect of explicit instruction have demonstrated an advantage of explicit over implicit learning. However, this advantage was no longer found for delayed tests in some of these studies.

In the case of vocabulary learning, a distinction is frequently made which appears to correspond to the implicit/explicit debate. Here, incidental vocabulary acquisition is generally defined as the "learning of vocabulary as the by-product of any activity not explicitly geared to vocabulary learning" and is contrasted with intentional vocabulary learning, defined as "any activity geared at committing lexical information to memory" (Hulstijn, 2001: 271). Explicit learning is characterized as involving the learner's online awareness, whereas implicit learning is seen as an automatic process without awareness of either the acquisition process or the resulting incidental vocabulary acquisition (Reber 1993: 12). Applied linguistic theories of vocabulary acquisition range from unconscious positions to those which claim that learners should be explicitly taught large amounts of vocabulary.

The findings of the present study support evidence for the claim that vocabulary can best be learned through intentional vocabulary tasks. The instructional treatments received by Input Only, Input Enhancement and Word-Focused Tasks groups can be characterized as incidental/implicit versus intentional/explicit learning of vocabulary. In the present study, vocabulary tasks practiced by Word-Focused Tasks group were regarded as intentional/explicit learning. Conscious learning and processing of the formal, semantic and syntactic features of the target words in the vocabulary activities

resulted in more number of words learned because the Word-focused tasks group outperformed the scores of Input enhancement and Input Only groups on the form-recognition and meaning-recognition tests. Thus, the present study provides evidence for the implicit/intentional debate and it can be concluded that perceptive and receptive lexical knowledge can better be expanded by intentional/explicit learning.

Moreover, there has been an age related issue in the incidental-intentional distinction as applied to second language learning. This distinction is made between use of the language for some further purpose, where learning may occur as a byproduct of any other activity like communication or reading and conscious study of aspects of the language code in an effort to master them (Schmidt 1990, 1993). This dimension of consciousness is thus related to the choice between experiential and analytic teaching approaches in the second language classroom. Children appear to be incidental learners of their L1, and that adults can also learn L2 features incidentally (Hulstijn 1992). An important question is whether there is any advantage to intentional learning, that is, to classroom activities in which learners are directed to intentionally pay attention to specific language features. If so, it is likely that this teaching strategy will be more useful among older L2 learners than among children because according to Schmidt (1990: 145) children appear less able to voluntarily pay selective attention to features of a learning task.

This age-related issue can find support in the present study. The participants are adult intermediate learners and the results suggest that when participants are directed to intentionally pay attention to vocabulary through tasks, the result is more vocabulary gain scores as compared to incidental vocabulary learning situation.

Another interpretation can be made by referring to Robinson (1995) who states that activation of information in short-term memory must exceed a certain threshold in order for learners to be consciously aware of it. According to Robinson (1995) detected information that receives focal attention enters working memory and is rehearsed. In the light of this information, the results of the study show that vocabulary enters working memory through a set of vocabulary tasks while reading for comprehension.

4.8. POST-TESTS

The second research question asked if the groups can retain the words within time, which group can best retain the learned words. The delayed post-tests were given one-week after the treatments ended. The treatments took eight weeks and the participants encountered one new word each week. Therefore, there is a time difference between TW 1 and TW 8. That is, between the delayed post-test and the TW 1 nine weeks passed but between the delayed post-test and TW 8 there is one week time. So, it is expected that TWs that were encountered in the last weeks would be better recalled in the delayed post-tests.

According to the results of mean analyses (Appendix VI) for form-recognition delayed post-test, most of the participants in the IO group said “I have never seen this word before”. Some of the participants said “I have seen the word but I do not know what it means” or they said they knew the word but they did not know the word correctly. These results indicate that most of the participants in the IO group did not recall the TWs. However, the last two TWs were recalled better in the delayed post-test by IO group.

IE group performed better than IO group according to the results of the delayed post-test mean analysis. They said “I have seen this word before but I do not know what it means” or “I know this word” but the given meaning is not correct. Their scores indicate that the participants in the IE group recognized the form of the TWs after some time passed when they first encountered the TW.

The WFT group’s scores are similar to the IE group in the delayed post-test according to the mean analysis. Most of the participants said “I have seen this word before but I do not know what it means” or “I know this word” but the given meaning is not correct. However, last two TWs were better recalled and participants gave the meaning correctly when they said “I know this word”. This result shows that time plays an important role in the recall of learned words.

The results of mean analysis for meaning-recognition test (Appendix VI) show that WFT group got the highest scores which means that most of the participants in the WFT group matched the TWs with the correct definitions, however, IE and IO groups were not so successful as the WFT group in matching the correct definition of the TW. The IE group is slightly more successful than IO group in matching the correct definition according to the mean analysis.

The mean analyses show that the participants' recall level is different in three groups. One-way ANOVA (Appendix VII) compared the means of delayed post-test of three different groups. According to the results of the form-recognition one-way ANOVA test, $p<0,05$. and the meaning-recognition one-way ANOVA test $p<0,05$ for each of the TW. These results show that there is a significant difference among three groups in their form-recognition and meaning-recognition on the delayed post-tests. In order to analyze the difference, Tukey analysis was run. The results of Tukey test are given in Table 8 for the form-recognition and in Table 9 for the meaning-recognition.

Table 8: Tukey Test (Post-test) (Form-recognition)

Dependent Variable	(I) Factor	(J) Factor	Mean Difference (I-J)	Std. Error	Sig.
disentangle	IO	IE	-,26000(*)	,08520	,008
		WFT	-,30000(*)	,08520	,002
	IE	IO	,26000(*)	,08520	,008
		WFT	-,04000	,08520	,886
	WFT	IO	,30000(*)	,08520	,002
		IE	,04000	,08520	,886
expedite	IO	IE	-,16000	,07458	,084
		WFT	-,34000(*)	,07458	,000
	IE	IO	,16000	,07458	,084
		WFT	-,18000(*)	,07458	,045
	WFT	IO	,34000(*)	,07458	,000
		IE	,18000(*)	,07458	,045
altruism	IO	IE	-,20000	,09467	,091
		WFT	-,40000(*)	,09467	,000
	IE	IO	,20000	,09467	,091
		WFT	-,20000	,09467	,091
	WFT	IO	,40000(*)	,09467	,000
		IE	,20000	,09467	,091
demise	IO	IE	-,16000	,09739	,231
		WFT	-,48000(*)	,09739	,000
	IE	IO	,16000	,09739	,231
		WFT	-,32000(*)	,09739	,004
	WFT	IO	,48000(*)	,09739	,000
		IE	,32000(*)	,09739	,004
scrutinize	IO	IE	-,30000(*)	,12180	,039
		WFT	-,54000(*)	,12180	,000
	IE	IO	,30000(*)	,12180	,039
		WFT	-,24000	,12180	,123
	WFT	IO	,54000(*)	,12180	,000
		IE	,24000	,12180	,123
inculcate	IO	IE	,00000	,08816	1,000
		WFT	-,32000(*)	,08816	,001
	IE	IO	,00000	,08816	1,000
		WFT	-,32000(*)	,08816	,001
	WFT	IO	,32000(*)	,08816	,001
		IE	,32000(*)	,08816	,001
deprivation	IO	IE	-,24000	,11120	,082
		WFT	-,40000(*)	,11120	,001
	IE	IO	,24000	,11120	,082
		WFT	-,16000	,11120	,324
	WFT	IO	,40000(*)	,11120	,001
		IE	,16000	,11120	,324
allure	IO	IE	-,38000(*)	,10480	,001
		WFT	-,60000(*)	,10480	,000
	IE	IO	,38000(*)	,10480	,001
		WFT	-,22000	,10480	,093
	WFT	IO	,60000(*)	,10480	,000
		IE	,22000	,10480	,093

Table 9: Tukey Test (Post-test) (Meaning-recognition)

Dependent Variable	(I) Factor	(J) Factor	Mean Difference (I-J)	Std. Error	Sig.
disentangle	IO	IE	-1,62000(*)	,51647	,006
		WFT	-3,80000(*)	,51647	,000
	IE	IO	1,62000(*)	,51647	,006
		WFT	-2,18000(*)	,51647	,000
	WFT	IO	3,80000(*)	,51647	,000
		IE	2,18000(*)	,51647	,000
expedite	IO	IE	-1,56000(*)	,49114	,005
		WFT	-3,92000(*)	,49114	,000
	IE	IO	1,56000(*)	,49114	,005
		WFT	-2,36000(*)	,49114	,000
	WFT	IO	3,92000(*)	,49114	,000
		IE	2,36000(*)	,49114	,000
altruism	IO	IE	-1,38000(*)	,48482	,014
		WFT	-3,56000(*)	,48482	,000
	IE	IO	1,38000(*)	,48482	,014
		WFT	-2,18000(*)	,48482	,000
	WFT	IO	3,56000(*)	,48482	,000
		IE	2,18000(*)	,48482	,000
demise	IO	IE	-1,54000(*)	,49646	,006
		WFT	-3,68000(*)	,49646	,000
	IE	IO	1,54000(*)	,49646	,006
		WFT	-2,14000(*)	,49646	,000
	WFT	IO	3,68000(*)	,49646	,000
		IE	2,14000(*)	,49646	,000
scrutinize	IO	IE	-1,38000(*)	,48309	,014
		WFT	-3,64000(*)	,48309	,000
	IE	IO	1,38000(*)	,48309	,014
		WFT	-2,26000(*)	,48309	,000
	WFT	IO	3,64000(*)	,48309	,000
		IE	2,26000(*)	,48309	,000
inculcate	IO	IE	-1,42000(*)	,48356	,011
		WFT	-3,64000(*)	,48356	,000
	IE	IO	1,42000(*)	,48356	,011
		WFT	-2,22000(*)	,48356	,000
	WFT	IO	3,64000(*)	,48356	,000
		IE	2,22000(*)	,48356	,000
deprivation	IO	IE	-1,26000(*)	,47571	,024
		WFT	-3,12000(*)	,47571	,000
	IE	IO	1,26000(*)	,47571	,024
		WFT	-1,86000(*)	,47571	,000
	WFT	IO	3,12000(*)	,47571	,000
		IE	1,86000(*)	,47571	,000
allure	IO	IE	-1,50000(*)	,49508	,008
		WFT	-3,48000(*)	,49508	,000
	IE	IO	1,50000(*)	,49508	,008
		WFT	-1,98000(*)	,49508	,000
	WFT	IO	3,48000(*)	,49508	,000
		IE	1,98000(*)	,49508	,000

According to the results of Tukey, there is a significant difference between IO-WFT and IE-WFT groups in the mean comparisons of form-recognition. These results indicate that WFT group got higher scores than IO and IE groups in recalling the forms of TWs.

The results of Tukey for meaning-recognition delayed post-test show that $p<0,05$ for each of the comparisons among groups. This result indicates that there is a statistically significant difference among the groups concerning their recall of the previously met TWs in their meaning-recognition.

The results show that the best performance in recall of the meaning is in WFT group, then IE group and IO group.

4.8.1. Immediate and Delayed Post-tests: A further analysis compared immediate and delayed post-tests for each group in order to examine how much each group recalled the TWs one or eight weeks after encountering the words. Immediately after the treatments, each group got the form-recognition tests. After all the treatments ended eight weeks later, the participants in each group were given the delayed post-tests for the form-recognition and the meaning-recognition. Paired sample t-tests were run to compare immediate and delayed posttests. Paired-sample t-tests can be used to determine if two means are different from each other when the two samples that the means are based on were taken from the matched individuals. The results of immediate-delayed post-test comparisons for IO group are given in Table 10 for the form-recognition and in Table 11 for the meaning-recognition.

Table 10: Paired Sample T-Test (Form-recognition, **IO** group)

Form-recognition		Paired Differences					
Immediate-post (**IO** Group)		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	disentangle	,22000	,70826	,10016	2,196	49	,033
Pair 2	expedite	-,14000	,60643	,08576	-1,632	49	,109
Pair 3	altruism	-,18000	,74751	,10571	-1,703	49	,095
Pair 4	demise	,14000	,67036	,09480	1,477	49	,146
Pair 5	scrutinize	,12000	,77301	,10932	1,098	49	,278
Pair 6	inculcate	-,04000	,66884	,09459	-,423	49	,674
Pair 7	deprivation	,14000	,75620	,10694	1,309	49	,197
Pair 8	allure	,20000	,85714	,12122	1,650	49	,105

Table 11: Paired Sample T-Test (Meaning-recognition, **IO** group)

Meaning-recognition		Paired Differences					
Immediate-post (**IO** Group)		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	disentangle	2,76000	3,02749	,42815	6,446	49	,000
Pair 2	expedite	2,04000	3,00313	,42471	4,803	49	,000
Pair 3	altruism	2,92000	2,70178	,38209	7,642	49	,000
Pair 4	demise	2,86000	2,32124	,32827	8,712	49	,000
Pair 5	scrutinize	3,38000	2,73966	,38745	8,724	49	,000
Pair 6	inculcate	3,66000	2,61557	,36990	9,895	49	,000
Pair 7	deprivation	3,32000	2,63756	,37301	8,901	49	,000
Pair 8	allure	1,82000	2,77518	,39247	4,637	49	,000

Paired sample T-test form-recognition results for IO group show that there is not a statistically significant difference between immediate and delayed post-tests. Only in the first TW - *disentangle*, there is a statistically significant difference between the immediate post-test and delayed post-test. These results indicate that the participant's TW form recall of disentangle did not change in eight weeks time. However, this result may be due to their failure in the immediate test results.

Paired sample t-test for the meaning-recognition revealed a statistically significant difference between immediate and delayed post-test for each TW. At the 0.05 level of significance, there exists enough evidence to conclude that the participants did not recall the meaning of TWs some time later after the first encounter with it.

Table 12 shows the form-recognition and Table 13 shows the meaning-recognition results of immediate and delayed post-test comparisons of IE group.

Table 12: Paired Sample T-Test (Form-recognition, **IE** group)

Form-recognition		Paired Differences					
Immediate-post (**IE** Group)		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	disentangle	,48000	,70682	,09996	4,802	49	,000
Pair 2	expedite	-,10000	,58029	,08207	-1,219	49	,229
Pair 3	altruism	,16000	,54810	,07751	2,064	49	,044
Pair 4	demise	,24000	,89351	,12636	1,899	49	,063
Pair 5	scrutinize	,06000	,68243	,09651	,622	49	,537
Pair 6	inculcate	,28000	,70102	,09914	2,824	49	,007
Pair 7	deprivation	,24000	,55549	,07856	3,055	49	,004
Pair 8	allure	,14000	,70015	,09902	1,414	49	,164

Table 13: Paired Sample T-Test (Meaning-recognition, **IE** group)

Meaning-recognition		Paired Differences					
Immediate-post (**IE** Group)		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	disentangle	1,64000	3,66873	,51884	3,161	49	,003
Pair 2	expedite	1,54000	3,47710	,49174	3,132	49	,003
Pair 3	altruism	1,36000	2,98130	,42162	3,226	49	,002
Pair 4	demise	1,84000	3,22845	,45657	4,030	49	,000
Pair 5	scrutinize	2,08000	2,74672	,38845	5,355	49	,000
Pair 6	inculcate	2,52000	3,23400	,45736	5,510	49	,000
Pair 7	deprivation	1,98000	3,10030	,43845	4,516	49	,000
Pair 8	allure	1,28000	3,23905	,45807	2,794	49	,007

Form-recognition paired sample t-test for IE group shows that $p<0,05$ for the words *disentangle, altruism, inculcate and deprivation*. These results indicate that the participants did not recall the forms of these words in the post-test. Two of these TWs are nouns and two of them are verbs. *Disentangle* (v) and *altruism* (n) were given in the first and third weeks but *inculcate* (v) and *deprivation* (n) were given in the sixth and seventh weeks. Thus, these results do not tell much about the form of the word or time to recall the TW.

The meaning-recognition-test shows that $p<0,05$ for each of the TW. This result means that there is a significant difference between immediate and delayed post-test. According to these results, there exists enough evidence to say that the participants in the IE group did not recall the meanings of TWs on the delayed post-test.

Table 14 shows the form-recognition and Table 15 shows the meaning-recognition results of immediate and delayed post-test comparisons of the WFT group.

Table 14: Paired Sample T-Test (Form-recognition, **WFT** group)

Form-recognition		Paired Differences					
Immediate-post (**WFT** Group)		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	disentangle	,66000	,51942	,07346	8,985	49	,000
Pair 2	expedite	,48000	,64650	,09143	5,250	49	,000
Pair 3	altruism	,56000	,61146	,08647	6,476	49	,000
Pair 4	demise	,70000	,46291	,06547	10,693	49	,000
Pair 5	scrutinize	,46000	,57888	,08187	5,619	49	,000
Pair 6	inculcate	,70000	,58029	,08207	8,530	49	,000
Pair 7	deprivation	,32000	,47121	,06664	4,802	49	,000
Pair 8	allure	,30000	,46291	,06547	4,583	49	,000

Table 15: Paired Sample T-Test (Meaning-recognition, **WFT** group)

Meaning-recognition		Paired Differences					
Immediate-post (**WFT** Group)		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	disentangle	,46000	2,42613	,34311	1,341	49	,186
Pair 2	expedite	1,08000	3,08942	,43691	2,472	49	,017
Pair 3	altruism	1,40000	2,22234	,31429	4,455	49	,000
Pair 4	demise	1,62000	2,32897	,32937	4,919	49	,000
Pair 5	scrutinize	1,46000	2,04251	,28885	5,054	49	,000
Pair 6	inculcate	1,94000	2,41939	,34215	5,670	49	,000
Pair 7	deprivation	1,42000	2,35684	,33331	4,260	49	,000
Pair 8	allure	1,28000	2,39080	,33811	3,786	49	,000

Form-recognition paired sample t-test for WFT group shows that $p<0,05$ for each TW. These results indicate that the participants did not recall the forms of these words on the delayed post-test.

The meaning-recognition test shows that $p<0,05$ for each of the TW except disentangle. This result means that there is a significant difference between immediate and delayed post-test except one TW. According to these results, it can be said that the participants in the WFT group did not recall the meanings of TWs on the delayed post-test.

4.9. Research Question Two

The second research question asked if groups can retain the words within time which group can best retain the learned words.

The results of the post-tests show that Input Only group can not recall the target words. This result proves that reading any text for comprehension does not result in vocabulary learning in the long term learning process. Although the participants in the Input Only group recognized both the form and meaning in the immediate post-tests, they failed to recognize these in the delayed post-tests.

The comparisons among groups show that Word Focused Tasks group can best recall the target words. As in immediate post-test results, this finding proves that in the long-term learning the best practice is to complete vocabulary tasks. This finding corroborates previous research that reading followed by word-focused tasks are more effective for vocabulary retention (Laufer, 2003; Min, 2008; Paribakht and Wesche, 1997).

Given the results of the study, the findings of post-tests provide evidence for Laufer and Hulstijn's (2001) Involvement Load Hypothesis. The Involvement Load Hypothesis is based on the Depth of Processing Hypothesis (Craik, Lockhart; 1972) which assumes that learning occurs through mental activities that require elaborate mental processing of thought, manipulation or processing of necessary information. According to Involvement Hypothesis, the retention of words when processed incidentally is conditional upon the following factors: need, search and evaluation. When reading for comprehension, there may be a need to infer or look up dictionary or may not be a need if the learner can understand the text without knowing this word. The results of the present study show that Word-Focused Tasks group used target words in activities thus a strong need occurred in order to find the meaning of the target words. When the need occurred the learners searched for the meaning by inferring. Thus, as Involvement Load hypothesis claims word learning occurred as learners involved in word learning activities that require deep levels of processing. The word focused tasks in the present study were matching and fill-in-the-blanks tasks.

Similarly, Keating (2008) who investigated three vocabulary learning tasks that varied in the amount of involvement found that reading plus fill-in-the-blanks (moderate evaluation) and sentence writing (strong evaluation) tasks resulted in significantly more gains and retention when compared to the reading comprehension task (no evaluation).

The comparisons between immediate and delayed post-tests prove that Input Only group did not recall the target words on the form-recognition and meaning-recognition tests. This finding is not surprising when the results of immediate post-tests are concerned. However, Input Enhancement and Word Focused Tasks group scores were similar in the immediate and delayed post-test comparisons and no group recalled the target words.

This finding on vocabulary learning can be explained referring to working memory. According to these results, an issue to be taken into consideration related to the learning of L2 target words read in context is if the working memory of a text and of individual words in that text affects their acquisition and retention of lexical information. The participants may not have been able to store sufficient information in their working memory about the text and target word that would allow them to recall the meaning of the words on the retention tests or may have failed to send the information which is stored in working memory in their long-term memory. Working memory is a system for the temporal storage of information and cognitive task processing, such as learning, reasoning and comprehending (Gathercole, and Baddeley, 1993). According to Baddeley and Hitch's (1974) model of working memory, as it was explained in the literature review chapter, there are separable components for the temporary storage of verbal and visuospatial information: the phonological loop and the visuospatial sketchpad. A centralized component is responsible for coordinating the flow of information between these storage systems and the temporary activation of long-term memory. The central executive functions as a mental workspace involved in the temporary storage and management of information.

Working memory functions as a coordinator of various levels of processing in language comprehension which involves lexical processing, syntactic analysis and thematic analysis. Gathercole and Baddeley (1993) claim that phonological loop facilitates working memory functioning. They suggest that the phonological loop plays an important role in learning vocabulary and efficient decoding facilitates phonological loop functioning. According to Atkins and Baddeley (1998) acquiring vocabulary items involves linking a new phonological or lexical sequence to its meaning. The learners need to recognize enough of the new structure to differentiate it from other known or new items.

The results of the present study indicate that in recalling the target words in the immediate post-tests Word Focused Tasks group performed significant scores. As Atkins and Baddeley (1998) state, the participants need to recognize enough of the new structure in order to store it in the working memory. This finding indicates that the participants in the Word Focused Tasks group were able to recognize enough of the new structure and store it in the short term memory. So, completing vocabulary tasks have a positive effect in the short term storage.

Stevick (1996) notes that differences between merely searching a word, visualizing what the word stands for and making inference related to the word can influence identification and performance. Moreover, cognitive depth is necessary in order for the information to go from working memory to long-term memory through networks. However, according to the result of delayed-post tests comparisons, no group performed significant scores in recalling the target words. In the immediate post-tests the best performance was displayed by Word Focused Tasks group, storing the words in the working memory. However, recall results show that information stored in the working memory was not stored in long-term memory. This shows that completing vocabulary activities does not necessarily result in cognitive depth. In general, in the framework of “depth of processing theory” the findings could be explained by the fact that completing word focused tasks did not result in higher long term effects. Although the initial learning was largely maintained throughout the study, completing vocabulary tasks did not end with the capacity to develop new, long-term phonological representations. Then for the new information to go from working memory to long-

term memory, completing vocabulary exercises after reading for comprehension did not prove to be effective. However, in order to make it effective and to activate operations of sending information from working memory to long term memory, learning needs to be recycled as Sonbul and Schmitt (2009) suggest.

On the other hand, the findings of immediate-delayed post test comparison results do not corroborate Rott (1997) who found that participants in the two-exposure set group retained receptive vocabulary knowledge over a period of four weeks. Six-exposure treatment demonstrated highest vocabulary gains and four weeks later the treatment recall was the same. Rott (1999) concluded that six-exposure group performed better both in the gain and recall of the unknown vocabulary.

The findings of the immediate-delayed post test comparisons of the present study, however, were based on a nine-week delay. According to the design of the present study, participants encountered the first target word in the first week of the treatment period and the last target word in the eight week. The delayed post-tests were given one week after the treatments ended. Thus, delayed post-tests give different delay periods for each target word; between the first immediate-delayed post test comparison there are eight weeks and between the eight immediate-delayed post test comparison there is only one week period. Thus, it is clear that the results of the seventh and eighth week immediate-delayed post test comparison results give higher recall results.

Similarly, Bogaard (2001) found that there is a significant difference between immediate-post test results and participants do not recall what is learned in the immediate post-tests. He concludes that many lexical items that one may consider to have been learned at one moment are not available later on.

Hulstijn (2003: 372) has explained that an assessment of "the cognitive processing of new lexical information" should be independent of issues such as forgetting or attrition of lexical information which may occur between the immediate and delayed post-test. An immediate-posttest could be used when measuring the effects of cognitive processes in a single learning session such as the effort of working memory upon the acquisition of unknown words read in a text. A delayed post-test would show attrition

with regard to information acquiring during reading but not necessarily specify why that attrition occurred. Thus, according to Hulstijn (2003) it would not be possible to differentiate the extent to which performance on delayed-post tests is affected by processes during the experimental learning session or by processes if any after that session. Then focusing on cognitive processes that impact on vocabulary learning through reading an immediate post-test would be a more valid measurement than a delayed post-test since its results would not reflect attrition of lexical information that might occur due to factors that might appear after reading.

To conclude, the data from the present study prove that reading provides comprehensible input for vocabulary learning; the best practice is to give learners vocabulary tasks along with the text if as teachers we desire our learners to gain receptive vocabulary through reading. Thus, the present study further strengthens the case for intentional vocabulary instruction while reading for comprehension. However, the information gained through reading and completing vocabulary tasks activates working memory but does not go to long-term memory. As it is suggested vocabulary learning has an incremental nature; to help it increase in cognitive level repetition in time is a necessary condition.

4.10. The Frequency and percentage analysis based on word category for the form-recognition and meaning-recognition for each TW

In order to investigate whether there is an effect of grammatical form of the TW, four nouns and four verbs were selected for the study. The frequency and percentage analyses for form-recognition for the nouns are given in Table 16 and for the verbs in Table 17, in order to see if there is a difference in the results of nouns and verbs.

Table 16: Total Frequency and Percentages for Nouns (Form-recognition)

	(Noun)					
	IO		IE		WFT	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
I have never seen	42	21	7	3.5	0	0
I have seen but I don't know meaning	90	45	87	43.5	7	3.5
I know (correct)	54	27	92	46	187	93.5
I know (incorrect)	14	7	14	7	6	3
Total	200	100	200	100	200	100

Table 17: Total Frequency and Percentages for Verbs (Form-recognition)

	(Verb)					
	IO		IE		WFT	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
I have never seen	43	21.5	14	7	1	0.5
I have seen but I don't know meaning	86	43	84	42	16	8
I know (correct)	24	12	54	27	163	81.5
I know (incorrect)	47	23.5	48	24	20	10
Total	200	100	200	100	200	100

The analyses for meaning-recognition for nouns are given in Table 18 and for verbs in Table 19, in order to see if there is a difference in the results of nouns and verbs.

Table 18: Total Frequency and Percentages for Nouns (Meaning-recognition)

	(Noun)					
	IO		IE		WFT	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Correct	135	67.5	157	78.5	197	98.5
Incorrect	65	32.5	43	21.5	3	1.5
Total	200	100	200	100	200	100

Table 19: Total Frequency and Percentages for Verbs (Meaning-recognition)

	(Verb)					
	IO		IE		WFT	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Correct	114	57	149	74.5	191	95.5
Incorrect	86	43	51	25.5	9	4.5
Total	200	100	200	100	200	100

The results of form-recognition test show that 21% of the participants said “I have never seen this word before” for nouns and 21.5% of the participants said “I have never seen this word before” for verbs in the IO group. 45% of the participants said “I have seen this word before but I do not know what it means” for nouns and 43% of the participants said “I have seen this word before but I do not know what it means” for verbs.

In the IE group, in the noun analysis 43.5% of the participants and in the verb analysis 42% of the participants said “I have seen this word before but I do not know what it means”. This result shows that the form of noun and verb TWs was recognized by similar number of participants.

The results of form-recognition test show that in the noun analysis, none of the participants and in the verb analysis 0.5% of the participants said “I have never seen this word before” in the WFT group. In the noun analysis, 81.5% of the participants and in the verb analysis, 43% of the participants said “I know what this word means” and they gave the meaning correctly.

On the meaning-recognition test, similar number of participants matched the correct definition and TW both in the verb and noun TWs.
These results indicate that there is not much difference in the form and meaning-recognition when the TW is a noun or verb.

4.11. Research Question Three

Research question three asked if there is an effect of grammatical form of the unknown word, which can be better learned, verb or noun.

The initial analysis of the vocabulary gain scores demonstrated that there is a difference in the gain of individual target words even within the same group. For example, although 10% of the WFT group said "I have seen this word before but I do not know what it means" for the target word *altruism* the remaining words were recognized and the meaning was provided. There might be several reasons of the differences in the learning of the target words in the same group. One reason might be the word category; therefore this issue was left for further analyses. Other reasons might include abstractness of the word or textual issues. Although the words were chosen form the same frequency band, some of them are abstract, therefore; these may be more difficult to learn. Another reason may be related to the text, although the texts were analyzed for readability, the context may not provide enough clues for the learners to infer the meaning of the target word. The text might be understandable to the learners without knowing the meaning of the target word, therefore; they might not need to infer the meaning while reading.

When overall results of groups are concerned, taking the grammatical form of target words into account, further analyses showed that there is not a significant difference in the results when the target word is a noun or a verb. The grammatical class of a target word did not appear to play a role in the form and meaning recognition. This shows that the grammatical form of the target word does not play an important role in the word learning, what is more important than grammatical form of the target word is whether to read just for comprehension or read the texts with input enhancement or complete vocabulary activities after reading.

This result does not substantiate previous research, which has provided evidence of greater gain of nouns than verbs (Ellis and Beaton, 1993; Na and Nation, 1985; Paribakht and Wesche, 1997). Paribakht and Wesche (1999) found that in inferencing learners guessed the meaning of more nouns than verbs and Kweon and Kim (2008)

concluded that among the three word classes, nouns were a little easier to retain than verbs and adjectives.

CHAPTER FIVE- CONCLUSION

5.1. Introduction

One motivation to conduct the present study was language learners' complaints about difficulties they face when learning vocabulary and their need to speed up vocabulary growth. Green and Meara (1995) state that language learners see vocabulary acquisition as their biggest language problem. Reading may play an important role in vocabulary learning and teaching because it provides contextual input for vocabulary learning. Therefore, the study set out to investigate the effectiveness of input enhancement and word focused tasks over input only on vocabulary learning when reading for comprehension.

It is accepted that comprehensible input (Krashen, 1989), in the present study in the form of reading text, is necessary for learners' language development. However, this study proved that input enhancement, drawing learners' attention to the target words, enhanced word gain. The main finding is that among three groups ─ reading only, input enhancement word-focused tasks ─ word-focused tasks group gained the most words on the form-recognition and the meaning-recognition tests.

5.2. Summary of the findings

The importance of lexis has been emphasized in theoretical and empirical SLA vocabulary research. The previous vocabulary research has shed light on various themes both in theory and pedagogy. In the domain of theory, the focus of discussions has been on the themes like whether the emphasis of teaching should be the word (e.g. Hunt and Beglar, 2005), breadth and depth in lexical competence (e.g. Laufer and Goldsein, 2004), whether the languages in multilingual mind are represented separately (Singleton, 2007), strategies employed by the learners in their attempt to learn vocabulary (Nation, 2005).

In the domain of pedagogy, attention has been devoted to finding the best pedagogical practices when learning and teaching vocabulary. One area of investigation has been

on whether to teach vocabulary explicitly or implicitly (e.g. Laufer, 2005). Other studies have investigated whether use of dictionary (e.g. Luppescu and Day, 1993) or word focused activities (e.g. Paribakht and Wesche, 1997) result in more word learning.

In the wide range of study themes mentioned above, the present study attempted to add both to the domain of theory and pedagogy and explored L2 vocabulary learning, specifically, the effectiveness of word-focused activities and input enhancement as compared to input only. Previous arguments suggested that reading is the best and the only way for vocabulary learning. The advocates of vocabulary through reading position claim that acquiring vocabulary from reading is a cumulative process which results from repeated exposures to the same words (Laufer, 2003) and learners learn vocabulary implicitly.

However, there have been other arguments and findings suggesting that input only is not the only way for vocabulary learning. Paribakht and Wesche (1997), for example, found that completing word-focused activities is a more effective way for learning vocabulary.

In the present study, all participants were given Vocabulary Knowledge Scale to make sure that each participant is unfamiliar with the target words before the treatments. In general, the data from the form-recognition and meaning-recognition tests showed that learners gained in their lexical knowledge of the target words through input only, input enhancement and word-focused activities.

In the attempts to understand how incidental learning occurs with respect to the cognitive and metacognitive processes learners engage in when they encounter any unfamiliar word, it has been claimed that incidental vocabulary occurs through inferring word meaning. However, Laufer (2003) opposes the claim that incidental vocabulary learning through reading is possible. She argues that learners ignore the unfamiliar words because context may not provide enough clues to infer meaning or learners do not have any need to infer the meaning because they may understand the context without knowing the unfamiliar word. Moreover, Fraser (1999) states that

some research has concluded that inferring word meaning is a productive way for vocabulary learning, however, some research has claimed that inferring is not always easy because of text which may not provide sufficient clues to infer meaning. Thus, it is clear that there is lack of consensus regarding the benefit of the use of lexical inference while reading for L2 learners.

According to the findings of the present study inferring meaning is a productive way for receptive vocabulary learning. The results indicate that while reading for comprehension learners engage in hypothesis formation and testing about word meaning as suggested by Ellis (1994) and, the context that the text provides can help for the cognition of new words.

For the vocabulary learning to occur, however, some necessary conditions must be provided. These are: enough exposures, context clues to infer meaning, the difficulty of the text (if the text is too easy for the learners' level, they would not attempt to infer the meaning of the unknown word because they understand the context). The finding that input only group recognized form and meaning of the target vocabulary supports evidence for the view that vocabulary is learned incrementally over multiple encounters (Nagy, Herman and Anderson, 1985).

In the input enhancement group, learners read the typographically enhanced words (written in bold and underlined) and noticed these words as unfamiliar. This noticing let them go through a lexical inferencing process. The higher rates in the input enhancement group as compared to input only shows that noticing plays an important role in word inferencing process. It seems that typographical input enhancement has allowed for a higher level of awareness than might normally occur in reading and resulted in higher scores.

Completing vocabulary tasks after reading for comprehension results in the form and meaning recognition of the target words. This finding suggests that using matching and fill-in-the-blank tasks is beneficial for vocabulary learning. These types of tasks are not too demanding for the teacher because teacher preparation time is minimal, student

time is less than writing sentences task and teacher check and correction can be done easily.

In general, the results of the present study show that when learning an unknown word, all of the treatments have an effect on learner scores and results.

Research question one asked which treatment ─ input only, typographical input enhancement or word-focused activities after reading ─ leads to better learning of unknown vocabulary. The results of the study showed that completing word-focused activities after reading the texts resulted in more receptive knowledge of words as compared to input enhancement and input only.

The results of the study showed that Input enhancement group, which read typographically enhanced texts, gained more receptive knowledge of words than input only group.

The most important finding of the study showed that word-focused activities result in more receptive vocabulary gains as compared to input only and input enhancement groups.

The main purpose of the study was to explore which way - reading only, input enhancement and word-focused tasks - would promote more word learning when learners read an L2 text for comprehension. Word-focused tasks group outperformed the other two groups in the number of words recognized both in the form-recognition and meaning-recognition.

WFT group's significantly better performance than IE and IO groups appeared to have been caused by completing vocabulary activities. The findings can be interpreted according to the model proposed by de Bot, Paribakht and Wesche (1997). They hypothesized that in order to infer the meaning of an unknown word read in the context, learners fill in an empty lemma structure. The string of letters that are read has to be matched with a lexeme. When a sufficient match is made, this form must activate a lemma and must be matched with a concept. The word form is given in the text, and

the conceptual system contains the conceptual frames that are needed to go from a lexeme to a lemma to a concept. One of these steps must be missing in Input Only and Input Enhancement groups.

The findings for research question one can be interpreted referring to psycholinguistics which offers theory and a series of studies that are related to implicit and explicit learning. Empirical studies on second language acquisition have demonstrated that focusing learners on form, by teaching rules and correcting errors, is superior to implicit learning. There has been no consensus over whether implicit or explicit learning results in better learning. The findings of the present study support evidence for the claim that vocabulary can best be learned through intentional vocabulary tasks.

The present study provides evidence for the implicit/intentional debate and it can be concluded that perceptive and receptive lexical knowledge can better be expanded by intentional/explicit learning.

Moreover, in second language learning, age has been a widely concerned issue. In the incidental-intentional distinction it has been claimed to have a role. This age-related issue can find support in the present study. The participants are adult intermediate learners and as it is argued adult learners may pay attention to intentional tasks more and may learn better explicitly. The results suggest that when participants are directed to intentionally pay attention to vocabulary through tasks, the result is more vocabulary gain scores as compared to incidental vocabulary learning situation.

Another interpretation can be made by referring to Robinson (1995) who states that activation of information in short-term memory must exceed a certain threshold in order for learners to be consciously aware of it. According to Robinson (1995) detected information that receives focal attention enters working memory and is rehearsed. In the light of this information, the results of the study show that vocabulary enters working memory through a set of vocabulary tasks while reading for comprehension.

The second research question asked if groups can retain the words within time which group can best retain the learned words. According to the results of the post-tests,

Input Only group can not recall the target words. The comparisons among groups show that Word Focused Tasks group can best recall the target words. As in immediate post-test results, this finding proves that in the long-term learning the best practice is to complete vocabulary tasks.

The findings of the post-tests provide evidence for Laufer and Hulstijn's (2001) Involvement Load Hypothesis. The Involvement Load Hypothesis is based on the Depth of Processing Hypothesis (Craik, Lockhart; 1972) which assumes that learning occurs through mental activities that require elaborate mental processing of thought, manipulation or processing of necessary information. WFT group completed vocabulary tasks after reading for comprehension. The results show that a strong need occurred in order to find the meaning of TW among the WFT group while completing the tasks.

The comparisons between immediate and delayed post-tests prove that Input Only group did not recall the target words on the form-recognition and meaning-recognition tests. This finding is not surprising when the results of immediate post-tests are concerned. However, Input Enhancement and Word Focused Tasks group scores were similar in the immediate and delayed post-test comparisons and no group recalled the target words.

Immediate and delayed post-test comparisons can be explained referring to working memory. The findings indicate that the participants in the WFT group were able to recognize enough of the new structure and store it in the short term memory. So, the results show that completing vocabulary tasks have a positive effect in the short term storage. However, immediate-delayed post test comparisons show that no group can recall the target words after nine weeks. This result shows that in order to activate operations of sending information from working memory to long term memory, learning needs to be recycled over time.

It can be concluded that focusing on cognitive processes that impact on vocabulary learning through reading an immediate post-test would be a more valid measurement

than a delayed post-test since its results would not reflect attrition of lexical information that might occur due to factors that might appear after reading.

Research question three asked if there is an effect of grammatical form of the unknown word, which can be better learned, verb or noun. Previous studies in vocabulary learning have claimed that nouns are acquired easier and in larger quantities than verbs. Taking the grammatical form of target words into account, the present study concludes that there is not a significant difference in the results when the target word is a noun or a verb.

5.3. Pedagogical Implications

The present study set out to investigate the debate over incidental versus intentional vocabulary learning and has confirmed that second language learners can acquire vocabulary through reading for comprehension. According to the supporters of incidental vocabulary acquisition, extensive reading which exposes learners to large quantities of material is beneficial because it is pleasurable and efficient.

However, the suggestion to place a focus on reading and word-focused tasks in intermediate level classes needs to be looked in the light of the main finding of the present study. Giving learners texts in which the target words are highlighted may help them gain these words. However, the most effective way proved to be giving learners word-focused activities as they read for comprehension. The study demonstrated that the most word gain is achieved when the learners read for comprehension and later complete a series of word-focused tasks.

Considering the findings of the present study, learners should be given reading texts, encounter the intended vocabulary several times in the reading text to promote acceleration of incidental vocabulary. However, sole reliance on reading is a questionable reading strategy in terms of vocabulary learning. Many important words in the texts will not be learned incidentally. When learners are reading any text for comprehension, they may learn words which are unfamiliar to them if they notice and give attention to the meaning of the word. Moreover, giving learners word-focused

activities would enhance their receptive vocabulary. When learners are involved in vocabulary tasks, they go through a more complex input processing. Then completing vocabulary tasks is an effective instructional option for the systematic development of word knowledge. It might be concluded that teaching practice of intentional vocabulary instruction while reading for comprehension is not a waste of time and effort; rather a practical save of time in the EFL reading class for building a large amount of vocabulary.

The main pedagogical implication is based on the superiority of intentional vocabulary learning while reading for comprehension over incidental learning alone. Advocates of incidental vocabulary claim that exposing learners to large amounts of reading in the form of extensive reading helps them gain large amounts of reading. However, the present study proved that in order to help the process of vocabulary development of our learners, a systematic way should be followed. The reading text we provide the learners should contain intentional focus on vocabulary. The teacher does not need to take long time to prepare complicated tasks. The present study proved that all the teacher needs to do is to prepare matching and fill-in-the-blanks tasks to help learners' incremental process of vocabulary learning.

In the light of the findings of the present study, incidental vocabulary learning through reading is not enough to learn vocabulary. If the teachers desire more vocabulary gains of their students, they should focus on intentional vocabulary teaching in the form of word-focused activities. These activities proved to be helpful for the initial stages of vocabulary learning process and vocabulary gained through reading and vocabulary tasks does seem to go from working memory to long-term memory.

5.4. Limitations of the present study and future research

The main purpose of the present study was to shed light on basic assumptions about the relationship between reading and vocabulary development. The following limitations need to be kept in mind when interpreting the results.

First, word-focused tasks used in the present study were selected from recognition category as grouped by Paribakht and Wesche (1997). Therefore, the effectiveness of word-focused activities is limited to recognition category.

Second, word gains were measured by the form and meaning recognition tests, that is, in the present study, learners' vocabulary gain was measured through receptive tasks. Further study is needed to determine whether word gain is achieved through productive tasks.

Third limitation of the study is on methodology. Delayed-post test was given at the end of the treatments in the 9th week. In the delayed post-test all target words were given to the participants and they were asked to recognize the words in the form-recognition test and match the meaning in the meaning-recognition test. However, the first target word was given in the first week of the study and the last target word was given in the 8th week. Therefore, there is a time measurement problem in the delayed post-tests. In short, retention period for each target word is not measured in a fixed time period. The results showed that target words which were given in the 7th and 8th weeks were better retained because there was a two week period between immediate and delayed post-tests for the target word given in the 7th week and one week period for the target word given in the 8th week.

DeKeyser (2000) argues that age is an effective factor in implicit learning procedures: children are better than adults at acquiring the language implicitly, while adolescents and adults tend to benefit more from explicit instruction, which is the one provided at school. The participants in the present study are adults and expected to benefit more from explicit instruction. Therefore, further study is needed for implicit and intentional reading comparisons for younger learners.

Moreover, this study is concerned with vocabulary gain at the receptive level. Further study is needed for vocabulary gain through reading at the productive level.

Since the study proved that intentional tasks give better vocabulary gain results, a further study may investigate different vocabulary tasks.

5.5. Conclusion

The present study investigated the roles and effectiveness of enhancement and word-focused activities in the vocabulary learning through reading. Specifically, the study investigated whether typographical input enhancement and word focused tasks are favorable as compared to input only when reading for comprehension.

Considering the ways of data collection, the study was designed to measure form and meaning recognition, therefore; form and meaning recognition levels were referred to as vocabulary learning.

Moreover, learners encountered nouns and verbs as target words while reading throughout the study. There may be an effect of grammatical class on word learning. Therefore, in order to find out whether there is an effect of grammatical class, gain and retention of nouns and verbs were compared for each group.

The main purpose of this study was to test whether reading is necessarily the main or the best way of learning vocabulary as suggested by many researchers who claim that it is. It is aimed to extend previous research and to provide more empirical evidence from EFL intermediate level learners' vocabulary learning and retention on the effectiveness of reading, reading plus word-focused activities and input-enhancement.

The results of the study provided evidence that completing vocabulary exercises after reading for comprehension is a useful way for vocabulary development. The findings were discussed under different paradigms and teachers were suggested to prepare matching and fill-in-the-blanks tasks for reading texts they give for comprehension in order to ensure vocabulary development of their learners.

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Appendix I

Text 1- Target Word (disentangle)

A Surprising Secret to a Long Life: Stay in School

There has been a variety of hypotheses about living a long life: money, lack of stress, a loving family, and lots of friends.

It is clear that on average some groups in every society live longer than others. Living long is not evenly distributed in the population and different life spans also depend on race, geography and education. However, the matter for the researchers is the reason for longer life. What really matters? How can we **disentangle** the truth behind long life?

Researchers think that highly educated people live longer than those that are not well-educated. Education is a more important social factor that is linked to longer life compared to race and income. Therefore, researchers think that providing people with more income will not really affect their health. Instead what may affect their health is keeping young people in school. A few extra years of school is associated with extra years of life and vastly improved healthy years later in their old ages.

A puzzling question that has to be **disentangled** is that: Does education really change people so that they live longer? The first important effort to **disentangle** ourselves from the problem of whether education really changes people so they live longer was a hopeless one. In 1999, three economists noticed that there was a relation between education and health. If you want to improve health, you will get more return by investing in education than by investing in medical care. This is interesting in itself and yet why this correlation exists needs to be **disentangled.**

In order to overcome this puzzling situation, a researcher proposed some possibilities as in the following: Maybe ill children did not go to school. Or maybe only rich people could find opportunity to get good education and maybe this wealth led to health. Yet it was difficult to find. It was the chicken-and-egg problem.

Soon, the researcher **disentangled** the truth when she found the laws in the different states related to attending school one extra year. She used the data to find out how long people lived before and after the law about going to school for an extra year was changed. The researcher says: “I was very excited because I finally managed to **disentangle** myself from the problem.” It turned out that life expectancy at age 35 was

extended by as much as one and half years simply by going to school for one extra year.

(**Flesch-Kincaid Grade level: 12**, **Flesch-Kincaid Reading Ease score: 43)**

(Number of words: 405)

(adapted from: The New York Times, by Gina Collata at www.nytimes.com/2007/01/03/health)

Text 2 -Target Word (expedite)

The Computer

Computers are all around us and can be considered a wonder of the world. Computers are helpful because they offer a wide range of functions and services that make us solve a lot of problems and **expedite** our lives in every field. We drive computerized cars, we receive letters sent by computers, astronauts can go to the space and return safely. Thus, the computer has significantly changed our world through advances in science and medicine, business and education. In fact, the computer is a wonderful tool that we have come to rely on. Computers help us solve the most important problems in our life, such as the problems in the cities, health and education.

First of all, computers are used to solve the problems in the cities. They are used to **expedite** heavy traffic flows and to clear streets in front of emergency vehicles. Also, in the large parking places, computers calculate parking fees and they direct cars to open parking spaces. Police departments use computer systems in order to store information on unpaid traffic tickets and stolen cars. With only a radio call, any policeman in the city can **expedite** the process of catching the driver of a stolen car. Besides, computers are used for city planning. For example, people try to use a computer to predict how, when and where a city will expand. With this information, more effective plans can be developed for city services, such as water distribution, fire and police protection.

Computers are very helpful in the hospitals, too. Doctors use computers to treat patients and find diseases such as brain tumors. So computers are making it easier for doctors to tell us what's wrong with our health. Besides, computers **expedite** the process of sending patient information between doctors and laboratories in the hospitals. This makes the jobs of doctors, nurses and laboratory technicians much

easier. Computers also **expedite** the recognition of changes in serious patient conditions in intensive care units and help doctors save the lives of the patients.

Perhaps, computers will be most helpful in the education field. In the near future, probably it will be almost impossible to have enough well educated teachers for students due to population growth and increasing student numbers. Pilot projects show that a computer can be a student's personal teacher.

As a conclusion, the application of the computer to solve problems is very important. However, we will soon realize that a computer is not an electronic brain. It is a tool that can help us overcome our human incapability to **expedite** calculations. Like any tool, it needs an intelligent human being who knows how to apply it to his problem.

(**Flesch-Kincaid Grade level: 12**, **Flesch-Kincaid Reading Ease score: 39)**

(Number of words: 443)

(adapted from: Advanced English Grammar, Helen Hidth Smidt, 2001,pp, 24, Prentice Hall)

Text 3- Target Word (altruism)

How to become Happier

One day last fall, I attended a positive-psychology class on how to make yourself happier—at George Mason University. This university is a challenge for positive psychologists because it is one of the 15 unhappiest campuses in America. Many students are married and already working and they travel to go to school. This university is a place where you go to move your career forward, not to find yourself.

The class was taught by a 32-year-old psychology professor whose area of research is "curiosity and well-being". He said that during the semester, the syllabus would take the students through the various building blocks of positive psychology: optimism, gratitude, mindfulness, hope, spirituality. Although the syllabus promised to "approach every topic in this class as scientists" and the assigned readings were academic, the students seemed interested.

The focus of the class that day was the distinction between feeling good, which according to positive psychologists, creates a hunger for more pleasure and doing good which can lead to lasting happiness. In the previous class, the students had been asked first to do something that gave them pleasure and then to perform an act of **altruism**. They talked about experiences in the class. They approached the first part of the

assignment eagerly. One student said that she had sex with her boyfriend 30 feet underwater while scuba diving. Another said he "went to horse races and got excited". A third attended a car race in North Carolina, smoked and drank. Some also watched favorite TV shows; others chatted with friends.

When it came to talk about the second part of the assignment which was about performing an act of **altruism**, the students were excited, too. The car attendee, who was afraid of needles, gave blood. Another collected clothes from family members and donated them to shelter for poor women. A boy bought a homeless person an alcoholic drink at a famous café, wondering if it was the right thing to do. At times, the professor, who ran the class in a nonjudgmental manner, complimented them on their act of **altruism**.

Later, he asked students to write about their experience. One student wrote selfish behavior gives pleasure only to her; **altruism** gives pleasure both to her and other people. When he read this summary, the professor noted: The student had learned that **altruism** is good for you, too.

What he did was pleasure versus **altruism**; in his later classes he meant to take up gratitude and forgiveness, close relationships and love, then spirituality and well-being and finally reach to meaning and purpose in life.

(Flesch-Kincaid Grade level: 12, Flesch-Kincaid Reading Ease score: 40)

Number of words: 429

(adapted from: The New York Times, by D.T. Max at www.nytimes.com/2007/01/07/magazine)

Text 4- Target Word (demise)

Echoes of Plato's Atlantis

It is a mystery in itself why a story written 2500 years ago by the Greek philosopher Plato continues to interest the public. This is also a topic of a lot of books, films, articles, web pages and a Disney cartoon.

Part of the contemporary interest in the Atlantis story has no doubt been kept alive by scientists. Historians, archaeologists and geologists have also discussed various literary, historical or geographical elements of the story.

So what do we actually know about Atlantis and its **demise**? The answer is not much. Plato's story comes to us from two short books, which were supposedly written before his death in 348 BC.

According to Plato, Atlantis was a great island. It was larger than the Asian continent in the Atlantic Ocean. The land was rich and fertile, its people were technologically advanced. They had written laws and they were fine engineers and architects. However, it got into a war with its former friend, Athens, and this caused its destruction. Of the **demise** itself, Plato simply notes, "Some time later there were earthquakes and floods of extraordinary violence, and in a single day and night, fighting men were swallowed up by the earth. The island of Atlantis was swallowed by the sea and the result was the **demise** of Atlantis."

In fact, there have been mainly three views on Atlantis and its **demise**. Some views believe that Atlantis existed as Plato described. The lost city was probably located somewhere between the Caribbean, South America, Antarctica and Ireland.

According to the other view, Plato's Atlantis refers to the rise and **demise** of a known ancient civilization. However, there has been debate over which civilization it is. Some believe that they are the Minoans of Crete or the people of Troy.

However, many researchers think that Atlantis is only a made-up story. But if it was made-up, to what extent was Plato inspired by the events in Classical Greek history? We know from the studies of historical scientists who examine earthquakes that Greece was very much affected by frequent earthquakes at that time. There were also many wars in the history of the Greeks. Helike was the capital of the Achaean League, a confederation of city states and Plato was born around 427 BC and he was in his mid 50s when Helike was lost because of an earthquake and seismic sea wave. Its disappearance into the sea is reminiscent of the main features of Atlantis' sudden **demise**.

(Flesch-Kincaid Grade level: 12, **Flesch-Kincaid Reading Ease score: 41)**.

Number of words: 416

(adapted from: BBC, by Dr. Iain Stewer at www.bbc.couk/history/ancient/greeks/atlantis)

Text 5-Target Word (scrutinize)

Trusting Your Instincts Leads You To The Right Answer

It is said that you are more likely to perform well if you do not think too hard and instead trust your instincts. In some cases, instinctive decisions are more reliable than decisions taken by using higher-level cognitive processes.

In order to prove this, participants in a research study were asked to find the strangest symbol on a screen. There were 650 symbols on the screen including one rotated version of the same symbol. Participants actually performed better when they were given no time at all to think about the symbols and so were forced to rely entirely on their subconscious.

On the contrary, you would expect people to make more correct decisions when given the time to look properly. However, they performed better when given almost no time to think. The conscious part of the brain does not accept our first subconscious decision even when it is correct. This makes us unaware of our instincts.

The study shows an example when our mind performs worse than our subconscious. Ten participants were asked to locate the only back to front side of a repeated symbol on screen and were given between zero and 1.5 seconds to **scrutinize** the image. Participants had to decide whether the strange one was on the left or the right-hand side of the screen. The researchers found that participants scored better if they were given no time at all to **scrutinize**. With a very short period of time to **scrutinize** the target, people performed with 95 % correctness. With more time to **scrutinize** the image, people were only correct 70 % of the time.

In this "**scrutinize** the image" test, the instinctive decisions were more correct because the subconscious brain recognizes a rotated side of the same object as different from the original. Whereas, the conscious brain sees that two objects are the same. For the conscious brain, an apple is still an apple whether rotated or not. Therefore; when people were given more time to **scrutinize** their decisions, they were more likely to be wrong.

Analyzing people's eye movements, the researchers explained that our eye movements are often involuntary. What seems like a random movement of the eye is often a scanning technique that allows us to pick out typical features in a crowd. Soon after we fix our eyes on a target, the conscious part of cognition examines whether the

candidate really is the target or not. If the target is not typical enough in the “eyes” of the conscious, failure of identification can occur.

(Flesch-Kincaid Grade level: 12, **Flesch-Kincaid Reading Ease score: 44)**.

Number of words: 421

(adapted from: Micaela Rubalcava, Educational Leadership, May 2005, pp, 70-72)

Text 6- Target Word (inculcate)

Let Children Come First

Rising student numbers, increasing teacher retirement and a high number of teacher leave all are reasons for an important teacher shortage in the United States. Studies show that a lot of teachers leave their jobs within three years, and also most of them leave in the first five years. Why do so many teachers leave? Many people believe that reasons may be low salary, student discipline problems, and lack of administrative support. However, one factor is not noticed. This is the disconnection between the goals of new teachers and the goals of the government.

In my classes, I usually ask my teacher education students about their goals. As a result, I have found that most of my teacher education students want to connect with children as persons in their careers. They want to create a community with students, and they want to help students develop their personal creativity. These teacher students’ expectations are very different from the real life teaching. In short, teacher education students want more than just “**inculcate** knowledge in children.”

As a professor of teacher education, I have started each semester for the last six years by discussing four basic goals of education. These goals are:

Citizenship; Schools **inculcate** political beliefs, rules, and the history of the surrounding society and government. Socialization; Schools **inculcate** students with communication skills and problem solution in social relations. Economic efficiency; Schools **inculcate** students with necessary skills and try to help them add to the economy as adults. Self-actualization; Schools think students as persons and **inculcate** them with knowledge to form their personal development.

I say that all these goals are important. I then explain that I believe that a good education system should consider all of these four goals. We should guide our students in different activities which can be both student-centered and teacher-directed. When I ask my students to choose a single goal, the results are almost the same. I asked around

1000 students since 1999, and every year, my students either choose self-actualization or socialization. These future teachers enter the career of education because they want to connect with students personally. They want to reach the hearts and minds of students as well as they want to **inculcate** knowledge in their students.

Then I ask another question: "Which goal do you think the education system in the United States presently favors?" Students answer quickly: "Economic efficiency." Students recognize that their goal for community and creative expression does not necessarily match what is actually happening in schools.

(adapted from: Science Daily, at www.sciencedaily.com/releases/2007/o1/07010812159.htm)

Text 7- Target Word (deprivation)

Sleepless nights may hinder moral judgment

Sleep **deprivation** is very common in modern culture. Every day people have lots of work to do and little time to complete all this work. This results in either long periods of being awake or a decrease in sleep for a long period of time. While some people may like to believe that they can teach their bodies not to require as much sleep, this belief is false. Sleep is needed to renew different parts of the body, especially the brain, so that it may continue to function properly. After long hours of being awake or reduced sleep, neurons may begin to fail in their functions, and this affects a person's behavior. Sleep loss may also interfere with good moral judgment.

Studies show that sleep **deprivation** reduces people's ability to deal with unexpected changes. Researchers developed a computer game in which players market a product for a company to study the effects of sleep loss. Players understand information on their progress as they go along, and success depends on how well they watch their performance in the light of their own previous decisions, their competitor's actions and the basic guidelines of marketing. After 32 to 36 hours' sleep **deprivation**, the performance of the group who lacked sleep was spoiled by an inability to adjust plans when new information became available. This shows us that sleep loss would be expected to harm someone's ability to make decisions and judgments during a problem situation.

In another study, 26 healthy military workers were given dilemmas to examine the results of sleep **deprivation.** The dilemmas in this case were imaginary situations, and not actual events. But the findings can explain the situations of people who are both regularly sleep-deprived and often need to make quick decisions in a problem situation, such as soldiers in war and medical professionals who take care of emergency patients. These imaginary situations varied from minor, morally unimportant ones to serious personal problems in which the decision would harm someone in order to protect someone else. Volunteers were given dilemmas before and after 53 hours of sleep **deprivation**. In general, they took a longer time to think over the morally important questions when they lacked sleep than when they were well rested. This was not the case with the more insignificant situations.

As these studies suggest sleep **deprivation** affects decision making and moral judgment in a negative way. Probably, sleep loss slows the brain's ability to combine cognitive and emotional information and this is very important to deal with serious moral dilemmas.

(adapted from: Reuters, at www.reuters.com/article/healthNews/iduUSCOL46453320070314)

Text 8-Target Word (allure)

How the Idea of Beauty Develops

Marilyn Monroe's measurements were accepted by many of her age group as perfect. But a new study suggests that her wonderful figure alone was not enough for her **allure**; it also had to be coupled with the way she moved.

A psychologist and writer of the new report says that for many years people have been trying to understand what makes people decide that someone is beautiful. She notes that finding only one factor that defines beauty has been difficult. For example, men in Western cultures generally prefer women like Monroe and more attractive and thin actresses of our day. However, in some remote African cultures women who are very fat have an **allure** for most of the men.

Researchers say that it is impossible to find only one factor as a common sign of beauty without putting it in a sexual category. And that includes waist to hip proportion, which is generally accepted as an important factor that determines **allure.** According to a researcher the determination of sex is the first factor in looking at another person. Once you know the sex of a person, any other factors will be easy to decide within that context. He notes that while making social judgments, people go through two steps. First, they decide whether a person is male or female. It is automatic and one of many basic social thoughts. After you decide about the sex of a person, then you check out other factors, such as walk, waist to hip proportion and hair length. Finally, you examine them all together and decide whether the person is beautiful.

The researchers tested the idea of beauty by asking 370 people about animations walking differently. The researchers gave shapes of human walkers and people observed these animations. Then they decided how much these figures seemed female or male and if they have an **allure**. In some cases, the sex of the figure was clear; in others, it had to be found from the shape and walk of the figure.

The results show that a female person was viewed as having an **allure** if the way of walking, waist to hip proportion and so on were found to be more toward what is seen as the feminine extreme. Likewise, a male person showing more masculine cues would be favored. For example, a figure seen as a woman with a favorable waist to hip proportion but with a clumsy walk would generally be thought as having less **allure** than the same figure with a definite hip sway.

(adapted from: Sydney Morning Herald at www.blogs.smh.com.au/sit/archieves/2007/03.htm

Appendix II- Tests

Text 1- TW (disentangle)

After you read the text, choose the most appropriate information according to the text.

1. Which one of the following is the most important factor for a long life according to the text?

a. race
b. geography
c. education
d. wealth

2. Researchers agree that

a. earning more money means having better health.
b. being rich results in better social life.
c. having good income leads to better health in older ages.
d. attending school for a few more years improves health.

3. Which one of the following best explained the relation between education and health according to the text?

a. only rich people could go to school.
b. sick children did not go to school.
c. attending school for an extra year improved health.
d. education was a hopeless reason for a long life.

4. How did the researcher find out that education improved health?

a. by finding the number of ill children who did not go to school.
b. by comparing how long people lived before and after the requirement brought by the law which extends the education for one more year.
c. by calculating how much rich people earned.
d. by analyzing chicken-and-egg problem.

5. It can be conclude from the text that

a. economy and health are related.
b. economy and education are related.
c. education and health are related.
d. education, health and wealth are related.

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
diminish				
invest				
disentangle				
expectancy				
primordial				
associate				

II. Match the following words with their definitions.

1. primordial ( )
2. associate ( )
3. diminish ( )
4. disentangle ( )
5. invest ( )
6. expectancy ( )

a. to reduce the value of one country's money when it is exchanged for another country 's money.

b. to become or make something become smaller or less.

c. the feeling that something pleasant or exciting is going to happen.

d. to make something or someone seem better or more important than they really are.

e. to make a connection in your mind between one thing or person and another.

f. to separate and explain different ideas or pieces of information that have become confused.

g. existing at the beginning of time or the beginning of the Earth.

h. to commit money in order to earn a financial return.

Complete the following exercises.

I. Match the following words with their definitions.

1. diminish ( )
2. disentangle ( )
3. expectancy ( )
4. invest ( )
5. associate ( )
5. primordial ( )

a. to make something or someone seem better or more important than they really are.
b. existing at the beginning of time or the beginning of the earth.
c. to make a connection in your mind between one thing or person and another.
d. to separate and explain different ideas or pieces of information that have become confused.
e. to commit money in order to earn a financial return.
f. the feeling that something pleasant or exciting is going to happen.
g. to reduce the value of one country's money when it is exchanged for another country 's money.
h. to become or make something become smaller or less.

II. Fill in the blanks by using one of the following words.

associate diminish disentangle
invest primordial expectancy

1. Life _____ for the patient was not much, as we could see in the doctor's eyes.
2. It is very difficult to _____ fact from fiction in what she is saying.
3. His bad life style does not _____ the importance of his discoveries.
4. The city has _____ millions of dollars in the museum.
5. Although there are many other reasons for it, I _____ the word obesity with eating too much.

Text 2-TW (expedite)

After you read the text, choose the most appropriate information according to the text.

1. According to the text, computers are used to solve problems in different fields. Which one of the following fields is not mentioned?
    a. medicine
    b. education
    c. meteorology
    d. communication
2. According to the text, computers are used to solve problems in the cities. Which one of the following is not mentioned concerning problems in the cities?
    a. heavy traffic flow
    b. parking problems in parking places
    c. city planning
    d. constructing buildings
3. Which one of the following is an application of the computer in hospitals, according to the text?
    a. examine patients
    b. tell doctors what to do
    c. send patient information in a short time, thus, help stuff
    d. teach patients what to do in the hospital
4. Which one of the following sentences is correct according to the text?
    a. Computers do not offer any help in the education field.
    b. As population grows, we have more and more well educated teachers.
    c. Pilot projects tell students what they should do in the school.
    d. Computers can act as teachers.
5. It is concluded in the text that….
    a. Computers can solve each problem in our lives.
    b. Human beings are incapable of solving problems.
    c. The computer is an electronic brain.
    d. Computers help human beings in solving problems.

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
coincide				
flair				
distribution				
expedite				
glean				
predict				

II. Match the following words with their definitions.

1. predict	( )	a. extremely small compared to the normal size of things.
2. flair	( )	b. to show that an idea or belief is false.
3. glean	( )	c. to say that something will happen, before it happens.
4. coincide	( )	d. a natural ability to do something very well.
5. expedite	( )	e. to find out information slowly and with difficulty.
6. distribution	( )	f. the act of sharing things among a large group in a planned way.
		g. to make a process or action happen more quickly.
		h. to happen at the same time as something else, especially by chance.

Complete the following exercises.

I. Match the following words with their definitions.

1. distribution ( )	a. to find out information slowly and with difficulty.
2. flair ( )	b. to show that an idea or belief is false.
3. expedite ( )	c. to make a process or action happen more quickly.
4. coincide ( )	d. a natural ability to do something very well.
5. glean ( )	e. to say that something will happen, before it happens
6. predict ( )	f. the act of sharing things among a large group in a planned way.
	g. extremely small compared to the normal size of things.
	h. to happen at the same time as something else, especially by chance.

II. Fill in the blanks by using one of the following words.

glean expedite flair coincide predict distribution

1. The population _____ is not equal in different parts of the country.
2. He _____ the additional information for his assignment from different sources, so it took him a lot of time to hand-in his assignment.
3. We need to apply strategies to _____ decision-making process because until we decide our rival companies may take action.
4. Jane has no _____ for languages.
5. The president's visit has been planned to _____ with the school's 100th anniversary.

Text 3- TW (altruism)

After you read the text, choose the most appropriate information according to the text.

1. What was the positive psychology class interested in?
    a. unhappy campuses in America
    b. how to make yourself happier
    c. how to live on a campus
    d. how to move your career forward
2. The writer attended one of the classes of the psychology professor. What was the topic that day?
    a. how to do assignments
    b. how to help the poor
    c. differences between feeling good and doing good
    d. how to attend interesting races
3. According to positive psychologists doing good _____ .
    a. is not a topic to be analyzed in positive psychology.
    b. and feeling good are the same.
    c. creates a hunger for more pleasure.
    d. leads to lasting happiness.
4. Which one of the following can be an example of an act that gives pleasure to only the person who does it?
    a. going to horse races
    b. giving blood
    c. donating clothes to the shelter for the poor
    d. buying food for a homeless person
5. How did the professor run the class?
    a. in a judgmental manner
    b. in a nonjudgmental manner
    c. by insulting students
    d. by showing no enthusiasm

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
gratitude				
hinder				
dilemma				
donate				
altruism				
challenge				

II. Match the following words with their definitions.

1. hinder ( )
2. altruism ( )
3. donate ( )
4. gratitude ( )
5. challenge ( )
6. dilemma ( )

a. to give something, especially money, to a person or an organization in order to help them.

b. a problem or difficulty that you must deal with before you can achieve something.

c. unselfish regard for or devotion to the welfare of others.

d. to be or get in the way of, to obstruct or delay the progress of.

e. the feeling of being thankful

f. to make something seem bigger by using special equipment.

g. a situation in which it is very difficult to decide what to do because all the choices seem equal.

h. extremely funny

Complete the following exercises.

I. Match the following words with their definitions.

1. dilemma ( )
2. gratitude ( )
3. altruism ( )
4. hinder ( )
5. challenge ( )
6. donate ( )

a. unselfish regard for or devotion to the welfare of others.

b. a situation in which it is very difficult to decide what to do because all the choices seem equal

c. extremely funny

d. to make something seem bigger by using special equipment.

e. to be or get in the way of, to obstruct or delay the progress of.

f. a problem or difficulty that you must deal with before you can achieve something.

g. to give something, especially money, to a person or an organization in order to help them.

h. the feeling of being thankful

II. Fill in the blanks by using one of the following words.

dilemma donate altruism gratitude challenge hinder

1. The committee expressed its _____ for the contribution he had made.
2. She performs an act of _____ whenever she can. On the other hand, her husband is very selfish and does not like his wife to behave on behalf of other people.
3. Working women are faced with the _____ of choosing between work and family commitments.
4. The travelers were _____ by the storm and they had to wait for long hours.
5. The richest man in the country _____ only 1000 dollars to cancer research last year.

Text 4- TW (demise)

After you read the text, choose the most appropriate information according to the text.

1. What is the origin of Plato's story according to the text?
    a. two short books written before Plato's death
    b. history that discusses the story
    c. films which are about Plato's story
    d. a Disney Cartoon
2. What is the reason for the destruction of Atlantis?
    a. engineers and architects
    b. a war with its former friend, Athens
    c. the width of the land
    d. advances in the technology
3. According to one of the views on Atlantis, it really existed. Which one of the following is correct according to this view?
    a. It had a lot of musicians.
    b. It was located in Australia.
    c. It is a civilization which will occur in the future.
    d. It was located between South America, Antarctica and Ireland.
4. Many researchers think that Atlantis was a made-up story. Which civilization inspired Plato in this story?
    a. South America
    b. Classical Greek
    c. Ireland
    d. Caribbean
5. What was the reason for the end of Atlantis according to the view that Atlantis was a made-up story?
    a. a war between Athens and South America
    b. The land became infertile.
    c. an earthquake and seismic sea wave.
    d. There was no rain, people had to move.

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
debate				
demise				
swap				
inspire				
defy				
fertile				

II. Match the following words with their definitions.

1. fertile	( )	a. a situation in which all people are treated equally.
2. swap	( )	b. to encourage someone by making them feel eager to do something.
3. debate	( )	
4. demise	( )	c. to state to be true, especially when open to question.
5. inspire	( )	d. to challenge to do something considered impossible.
6. defy	( )	e. to discuss a subject formally when you are trying to make a decision.
		f. to give something to someone and get something in return, exchange.
		g. the end of something that used to exist.
		h. a piece of land which is able to produce good crops in great quantities

I. Match the following words with their definitions.

1. debate	( )	a. to challenge to do something considered impossible.
2. swap	( )	b. a situation in which all people are treated equally
3. defy	( )	c. to remove by erasing or cutting out.
4. demise	( )	d. the end of something that used to exist.
5. fertile	( )	e. to discuss a subject formally when you are trying to make a decision.
6. inspire	( )	f. a piece of land which is able to produce good crops in great quantities
		g. to encourage someone by making them feel eager to do something
		h. to give something to someone and get something in return, exchange.

II. Fill in the blanks by using one of the following words.

inspire defy fertile demise swap debate

1. When telling his story, my grandfather was _____ by his meeting with a Russian soldier on the train.
2. Nowadays, philosophers _____ whether it is right to clone an individual.
3. As far as I understood from the lecture of the history professor, the reason for the _____ of many cultures was corruption.
4. The criminal openly _____ the law.
5. Robert is so crazy as to _____ his expensive watch for a box of cigars.

Text 5- TW (scrutinize)

After you read the text, choose the most appropriate information according to the text.

1. The research study asked participants to find the strangest symbol on the screen. What was this research study trying to show?
    a. When you rotate the symbol, it is not the same symbol anymore.
    b. Sometimes, instincts are more reliable than conscious brain.
    c. If you want to perform correctly, you should examine each of the 650 symbols for a long time.
    d. Finding the strangest symbol on the screen is not possible.
2. In which one of the following situations people perform better according to the text?
    a. If they are given no time to think.
    b. If they are given a lot of time to think.
    c. People always perform well.
    d. When people are aware of their conscious brain.
3. What is the explanation for the claim that instinctive decisions are more correct than conscious decisions?
    a. Subconscious brain recognizes a rotated side of the same object as different.
    b. Subconscious brain does not recognize any differences.
    c. Conscious brain sees that a rotated object is different.
    d. Conscious brain does not recognize any differences.
4. Which one of the following is correct for our eye movements?
    a. Since our eyes do not move randomly, we do not have the ability to pick out typical features in a crowd.
    b. When we fix our eyes on a target, our subconscious brain examines the target carefully.
    c. Researchers did not thoroughly examine our eye movements because of lack of equipment.
    d. Eye movements are often involuntary.

5. We can conclude from the text that _____

a. We should move our eyes so that we can see.

b. We may rotate symbols in order to see the screen.

c. We may rely on our instincts.

d. We should have time in order to let subconscious brain decide.

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
rotate				
target				
cognition				
scrutinize				
discount				
inhibit				

II. Match the following words with their definitions.

1. target ( )
2. discount ( )
3. cognition ( )
4. rotate ( )
5. scrutinize ( )
6. inhibit ( )

a. to hold back; to prevent something from growing or developing.
b. to turn around on an axis or center.
c. to follow rapidly in order to catch or overtake
d. to examine or observe with great care; inspect critically.
e. to sell or offer for sale at a reduced price; to deduct or subtract from a cost or price.
f. a desired goal; something aimed or fired at.
g. the mental process of knowing, including aspects such as awareness, perception, reasoning, and judgment.
h. to withdraw one's support or help from, especially in spite of duty, allegiance, or responsibility

Complete the following exercises.

I. Match the following words with their definitions.

1. cognition ( )
2. scrutinize ( )
3. rotate ( )
4. inhibit ( )
5. target ( )
6. discount ( )

a. to turn around on an axis or center.

b. to examine or observe with great care; inspect critically.

c. a desired goal; something aimed or fired at.

d. to follow rapidly in order to catch or overtake

e. to withdraw one's support or help from, especially in spite of duty, allegiance, or responsibility.

f. the mental process of knowing, including aspects such as awareness, perception, reasoning, and judgment.

g. to hold back; to prevent something from growing or developing.

i. to sell or offer for sale at a reduced price; to deduct or subtract from a cost or price.

II. Fill in the blanks by using one of the following words.

cognition rotate target inhibit discount scrutinize

1. An unhappy family life may _____ children's learning.
2. The Earth _____ on its axis once every 24 hours.
3. The poor victim _____ all of the possible criminals' faces.
4. The young Persons Railcard gives you a 15% _____ on rail travel.
5. Higher degrees in English are a _____ for foreign students.

Text 6- TW (inculcate)

After you read the text, choose the most appropriate information according to the text.

1. Which one of the following is not given as one of the goals of teacher education students?
    a. connect with children as persons
    b. gain administrative support
    c. create a community with children
    d. help students develop personal creativity
2. Which one of the following is not given as one of the goals of education?
   To teach _____
    a. political beliefs
    b. communication skills
    c. how to increase teacher numbers
    d. how to develop personally
3. The professor of teacher education starts each semester by discussing goals of education. Which goal of education is more important than the others according to the professor?
    a. citizenship
    b. self-actualization
    c. socialization
    d. all of four goals
4. According to the professor of teacher education why do future teachers enter the career of education?
    a. to connect with students personally
    b. to earn money
    c. to leave the job later
    d. to give only knowledge

5. It can be concluded from the text that _____.
    a. economic efficiency is the most important element for the teacher education students.
    b. teacher education students do not have any enthusiasm to enter the career.
    c. teacher education students' goals do not much what is actually happening in schools.
    d. there is no problem in the school system.

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
shortage				
disconnection				
inculcate				
efficiency				
stroll				
stare				

II. Match the following words with their definitions.

1. stare ( )
2. disconnection ( )
3. shortage ( )
4. inculcate ( )
5. efficiency ( )
6. stroll ( )

a. to go for a leisurely walk

b. to impress (something) upon the mind of another by frequent instruction or repetition.

c. to look directly and fixedly, often with a wide-eyed gaze.

d. causing to move repeatedly from side to side.

e. the property of being an amount by which something is less than required; deficiency

f. the quality of being efficient; the power or capacity to produce a desired result.

g. to perceive as being different.

h. the act or process of detaching, separation.

Complete the following exercises.

I. Match the following words with their definitions.

1. stroll ( )
2. inculcate ( )
3. efficiency ( )
4. shortage ( )
5. stare ( )
6. disconnection ( )

a. the property of being an amount by which something is less than required; deficiency

b. to perceive as being different.

c. the act or process of detaching, separation

d. the quality of being efficient; the power or capacity to produce a desired result.

e. causing to move repeatedly from side to side.

f. to look directly and fixedly, often with a wide-eyed gaze

g. to impress (something) upon the mind of another by frequent instruction or repetition.

h. to go for a leisurely walk

I. Fill in the blanks by using one of the following words.

stroll inculcate efficiency shortage stare disconnection

1. When fathers and mothers are divorced, the _____ between the family members is an important problem for the children.
2. Not all schools can manage to successfully _____ a love of learning.
3. The _____ of the new train service depends on how well they will build the new system.
4. We went for a _____ in the park.
5. The new government is trying to solve the housing _____ .

Text 7- TW (deprivation)

After you read the text, choose the most appropriate information according to the text.

1. What is the result of having a lot of work and little time to do this work in modern culture?
    a. increase in the amount of sleep
    b. renewing your body
    c. being awake for long periods
    d. proper work of brain
2. Which one of the following is not an effect of lack of sleep?
    a. problems in decision making
    b. imaginary situations
    c. emotional and moral dilemmas
    d. a need for more time to think over problems
3. Researchers developed a computer game to study the effects of sleep loss. What did they find at the end of their study with computer game?
    a. Sleep loss harms people's ability to make decisions.
    b. It is only a game, it can prove nothing.
    c. The computer game improves knowledge of marketing.
    d. Players should learn how to play this game to achieve success.
4. How did the researchers gather data to investigate the relationship between lack of sleep and moral judgment?
    a. Health professionals were asked to decide quickly in problem situations.
    b. Students were given morally important and unimportant problems.
    c. People were asked to choose behaviors that they will harm someone.
    d. Military workers were asked if any action is appropriate or inappropriate in a given situation.
5. What can be concluded from this text?
    a. Being sleepless affects moral judgment negatively.
    b. Being sleepless affects brain functions in a positive way.
    c. People do not like dealing with moral dilemmas.
    d. We should teach people how to sleep well.

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
interfere				
deprivation				
competitor				
adjust				
impure				
facsimile				

II. Match the following words with their definitions.

1. competitor ( )
2. interfere ( )
3. deprivation ( )
4. facsimile ( )
5. adjust ( )
6. impure ( )

a. not pure or clean; contaminated.

b. something that prevents loss of dignity or self-esteem.

c. to change so as to match or fit; cause to correspond; to adapt or conform, as to new conditions.

d. the lack of something that you need in order to be healthy, comfortable or happy; loss.

e. to keep up or carry on; continue.

f. to create a barrier or obstacle; to intervene or intrude in the affairs of others.

g. one that competes with another, as in sports or business; a rival.

h. an exact copy or reproduction, as of a document.

Complete the following exercises.

I. Match the following words with their definitions.

1. adjust ( )
2. facsimile ( )
3. deprivation ( )
4. competitor ( )
5. impure ( )
6. interfere ( )

a. to change so as to match or fit; cause to correspond; to adapt or conform, as to new conditions.

b. the lack of something that you need in order to be healthy, comfortable or happy; loss.

c. to keep up or carry on; continue.

d. an exact copy or reproduction, as of a document.

e. one that competes with another, as in sports or business; a rival.

f. something that prevents loss of dignity or self-esteem

g. to create a barrier or obstacle; to intervene or intrude in the affairs of others.

h. not pure or clean; contaminated.

II. Fill in the blanks by using one of the following words.

deprivation facsimile impure interfere adjust competitor

1. _____ is used to transmit such materials as documents, telegrams, drawings, pictures taken from satellites, and even entire newspapers.
2. Anxiety can _____ with children's performance at school.
3. Low birth weight is related to economic _____.
4. It took a few seconds for her eyes to _____ to the darkness.
5. The company's one major _____ has nothing to rival the new product.

Text 8- TW (allure)

After you read the text, choose the most appropriate information according to the text.

1. Marilyn Monroe was attractive. What made her attractive according to the text?
    a. her measurements and psychology
    b. her measurements and the way she moved
    c. her career and psychology
    d. her career and way of life
2. When determining whether a person is beautiful, people go through some steps. What is the first factor in determining beauty according to the text?
    a. how the person lives
    b. what the person thinks
    c. determining whether the person is a man or woman
    d. determining whether you can love that person
3. Which factor is not mentioned in the text as a determinant of the beauty of a person?
    a. social status
    b. walk
    c. waist to hip proportion
    d. hair length
4. How did the researchers test this idea of beauty? They _____
    a. showed people pictures of beautiful women.
    b. showed people pictures of ugly men.
    c. asked people to say what they think about beauty
    d. asked people to give their idea about animations walking differently.
5. What can be concluded from this text?
    a. People are never beautiful.
    b. Figure and the way person moves are the two important features in determining attractiveness.
    c. Males were preferred according to the results of the study.
    d. Economic status of men determines the degree of their attractiveness.

I. Indicate if you have seen the word before and provide meaning if you have seen it. (Tick the box that best explains your familiarity with the word. If you choose III, please write the meaning in part IV).

Word	**I.** I have never seen this word before	**II.** I have seen this word before, but I don't know what it means	**III.** I know what this word means	**IV**. The meaning of the word (either in English or in Turkish)
cue				
dilate				
allure				
proportion				
prudent				
sway				

II. Match the following words with their definitions.

1. proportion ( )
2. sway ( )
3. allure ( )
4. cue ( )
5. prudent ( )
6. dilate ( )

a. to become wider or larger; expand.

b. to swing back and forth or to and fro.

c. a ceremonial act or a series of such acts.

d. a relationship between quantities such that if one varies then another varies in a manner dependent on the first.

e. the power or quality of attracting.

f. a hint or suggestion; a reminder or prompting.

g. to use up or put out; expend.

h. wise in handling practical matters; careful in regard to one's own interests.

Complete the following exercises.

I. Match the following words with their definitions.

1. prudent ( )
2. allure ( )
3. dilate ( )
4. proportion ( )
5. cue ( )
6. sway ( )

a. a relationship between quantities such that if one varies then another varies in a manner dependent on the first.
b. to swing back and forth or to and fro.
c. to use up or put out; expend
d. to become wider or larger; expand.
e. a ceremonial act or a series of such acts.
f. wise in handling practical matters; careful in regard to one's own interests.
g. the power or quality of attracting.
h. a hint or suggestion; a reminder or prompting

II. Fill in the blanks by using one of the following words.

sway allure dilate proportion cue prudent

1. A _____ person profits from personal experience, a wise one from the experience of others.
2. The doctor gave me eye drops that made my pupils _____.
3. Although she is 50, she lost none of her _____.
4. The trees _____ gently in the soft wind.
5. Her feet are small in _____ to her height.

Appendix III

Key of the words which were evaluated as correct or incorrect

Text 1: disentangle

Correct	**Incorrect**
çözmek	karıştırmak
karışıklığı çözmek	kesin belli olmak
to extricate from complication	birbirinden ayırmak
to release from a confusing situation	

Text 2: expedite

Correct	**Incorrect**
hızlandırmak	yolculuk yapmak
to make something happen more quickly	masraf
to make something speedy	sergilemek
	genişletmek
	araştırmak
	yarar sağlamak
	to help

Text 3: altruism

Correct	**Incorrect**
bencil olmayıp başkalarının mutluluğunu önemsemek	minnettar olmak
başkalarını düşünmek	değiştirmek
fedakarlık	coşku
help people and be happy about it	bencillik
something that gives pleasure because you do something good to someone	cömertlik
unselfish regard or devotion to the welfare of others	a branch of psychology

Text 4: demise

Correct	**Incorrect**
yok olmak	zarar vermek
sona ermek, çökmek	harap etmek
come to an end	kötü kader
the end of something that used to exist	kalıntı
	geçmiş

Text 5: scrutinize

Correct	**Incorrect**
dikkatle incelemek	ayrıştırmak
dikkatle derinlemesine incelemek	belirlemek
to examine carefully	gözden geçirmek
	belirginleştirmek
	gözlemlemek
	seçmek
	make smaller

Text 6: inculcate

Correct	**Incorrect**
öğretmek, aşılamak	hesaplamak
bilgi aşılamak	yanlış hesaplamak
to impress upon the mind of another by frequent instruction or repetition	araştırmak
	imkan sağlamak
	iletişimsizlik

Text 7: deprivation

Correct	**Incorrect**
eksiklik	zarar görmek
yoksunluk	short time
loss	
the lack of something that you need in order to be happy	
the lack of something that you need in order to be healty	

Text 8: allure

Correct	**Incorrect**
cezbedici, cazibe	etkili
çekicilik	power
attractiveness	
the power of quality of attracting	

Appendix IV

Frequency and Percentage Tables for each Target Word- Form-recognition and Meaning-recognition

Table 1: Frequency and percentages for **disentangle**, Form-recognition test

	disentangle (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	10	20,0	2	4,0	0	0,0
I have seen but I don't know meaning	16	32,0	12	24,0	3	6,0
I know (correct)	15	30,0	27	54,0	39	78,0
I know (incorrect)	9	18,0	9	18,0	8	16,0
Total	50	100,0	50	100,0	50	100,0

Table 2: Frequency and percentages for **disentangle**, Meaning-recognition test

	disentangle (Meaning-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Correct	28	56,0	35	70,0	49	98,0
Incorrect	22	44,0	15	30,0	1	2,0
Total	50	100,0	50	100,0	50	100,0

Table 3: Frequency and percentages for **expedite**, Form-recognition test

	expedite (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	12	24,0	6	12,0	0	0,0
I have seen but I don't know meaning	25	50,0	29	58,0	7	14,0
I know (correct)	0	0,0	4	8,0	36	72,0
I know (incorrect)	13	26,0	11	22,0	7	14,0
Total	50	100,0	50	100,0	50	100,0

Table 4: Frequency and percentages for **expedite**, Meaning-recognition test

	expedite (Meaning-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Correct	20	40,0	34	68,0	42	84,0
Incorrect	30	60,0	16	32,0	8	16,0
Total	50	100,0	50	100,0	50	100,0

Table 5: Frequency and percentages for **altruism**, Form-recognition test

	altruism (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	20	40,0	2	4,0	0	0,0
I have seen but I don't know meaning	25	50,0	33	66,0	5	10,0
I know (correct)	2	4,0	11	22,0	39	78,0
I know (incorrect)	3	6,0	4	8,0	6	12,0
Total	50	100,0	50	100,0	50	100,0

Table 6: Frequency and percentages for **altruism**, Meaning-recognition test

	altruism (Meaning-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Correct	30	60,0	28	56,0	49	98,0
Incorrect	20	40,0	22	44,0	1	2,0
Total	50	100,0	50	100,0	50	100,0

Table 7: Frequency and percentages for **demise,** Form-recognition test

	demise (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	12	24,0	3	6,0	0	0,0
I have seen but I don't know meaning	26	52,0	25	50,0	0	0,0
I know (correct)	8	16,0	14	28,0	50	100,0
I know (incorrect)	4	8,0	8	16,0	0	0,0
Total	50	100,0	50	100,0	50	100,0

Table 8: Frequency and percentages for **demise,** Meaning-recognition test

	demise (Meaning-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Correct	33	66,0	41	82,0	50	100,0
Incorrect	17	34,0	9	18,0	0	0,0
Total	50	100,0	50	100,0	50	100,0

Table 9: Frequency and percentages for **scrutinize,** Form-recognition test

	scrutinize (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	12	24,0	3	6,0	0	0,0
I have seen but I don't know meaning	26	52,0	25	50,0	0	0,0
I know (correct)	8	16,0	14	28,0	50	100,0
I know (incorrect)	4	8,0	8	16,0	0	0,0
Total	50	100,0	50	100,0	50	100,0

Table 10: Frequency and percentages for **scrutinize,** Meaning-recognition test

	scrutinize (Meaning-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Correct	34	68,0	39	78,0	50	100,0
Incorrect	16	32,0	11	22,0	0	0,0
Total	50	100,0	50	100,0	50	100,0

Table 11: Frequency and percentages for **inculcate,** Form-recognition test

	inculcate (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	12	24,0	4	8,0	1	2,0
I have seen but I don't know meaning	25	50,0	23	46,0	2	4,0
I know (correct)	3	6,0	12	24,0	46	92,0
I know (incorrect)	10	20,0	11	22,0	1	2,0
Total	50	100,0	50	100,0	50	100,0

Table 12: Frequency and percentages for **inculcate,** Meaning-recognition test

	inculcate (Meaning-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Correct	32	64,0	41	82,0	50	100,0
Incorrect	18	36,0	9	18,0	0	0,0
Total	50	100,0	50	100,0	50	100,0

Table 13: Frequency and percentages for **deprivation,** Form-recognition test

	deprivation (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	2	4,0	0	0,0	0	0,0
I have seen but I don't know meaning	19	38,0	12	24,0	0	0,0
I know (correct)	23	46,0	38	76,0	50	100,0
I know (incorrect)	6	12,0	0	0,0	0	0,0
Total	50	100,0	50	100,0	50	100,0

Table 14: Frequency and percentages for **deprivation,** Meaning-recognition test

	deprivation (Meaning-recognition)					
	RO		RE		RP	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Correct	36	72,0	42	84,0	49	98,0
Incorrect	14	28,0	8	16,0	1	2,0
Total	50	100,0	50	100,0	50	100,0

Table 15: Frequency and percentages for **allure,** Form-recognition test

	allure (Form-recognition)					
	IO		IE		WFT	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
I have never seen	8	16,0	2	4,0	0	0,0
I have seen but I don't know meaning	20	40,0	17	34,0	2	4,0
I know (correct)	21	42,0	29	58,0	48	96,0
I know (incorrect)	1	2,0	2	4,0	0	0,0
Total	50	100,0	50	100,0	50	100,0

Table 16: Frequency and percentages for **allure,** Meaning-recognition test

	allure (Meaning-recognition)					
	RO		**RE**		**RP**	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Correct	36	72,0	46	92,0	49	98,0
Incorrect	14	28,0	4	8,0	1	2,0
Total	50	100,0	50	100,0	50	100,0

Total Frequency and Percentage results for each group

Table 17: Frequency and Percentages for **IO** (Form-recognition)

IO	disentangle		expedite		altruism		demise		scrutinize		inculcate		deprivation		allure	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
I have never seen	10	20,0	12	24,0	20	40,0	12	24,0	9	18,0	12	24,0	2	4,0	8	16,0
I have seen but I don't know meaning	16	32,0	25	50,0	25	50,0	26	52,0	20	40,0	25	50,0	19	38,0	20	40,0
I know (correct)	15	30,0	0	0,0	2	4,0	8	16,0	6	12,0	3	6,0	23	46,0	21	42,0
I know (incorrect)	9	18,0	13	26,0	3	6,0	4	8,0	15	30,0	10	20,0	6	12,0	1	2,0
Total	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,

Table 18: Frequency and Percentages for **IO** (Meaning-recognition)

	disentangle		expedite		altruism		demise		scrutinize		inculcate		deprivation		allure	
IO	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Correct	28	56,0	20	40,0	30	60,0	33	66,0	34	68,0	32	64,0	36	72,0	36	72,0
Incorrect	22	44,0	30	60,0	20	40,0	17	34,0	16	32,0	18	36,0	14	28,0	14	28,0
Total	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,

Table 19: Frequency and Percentages for **IE** (Form-recognition)

IE	disentangle		expedite		altruism		demise		scrutinize		inculcate		deprivation		allure	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percenaget**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
I have never seen	2	4,0	6	12,0	2	4,0	3	6,0	2	4,0	4	8,0	0	0,0	2	4,0
I have seen but I don't know meaning	12	24,0	29	58,0	33	66,0	25	50,0	20	40,0	23	46,0	12	24,0	17	34,0
I know (correct)	27	54,0	4	8,0	11	22,0	14	28,0	11	22,0	12	24,0	38	76,0	29	58,0
I know (incorrect)	9	18,0	11	22,0	4	8,0	8	16,0	17	34,0	11	22,0	0	0,0	2	4,0
Total	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,

Table 20: Frequency and Percentages for **IE** (Meaning-recognition)

	disentangle		expedite		altruism		demise		scrutinize		inculcate		deprivation		allure	
IE	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentag**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Correct	35	70,0	34	68,0	28	56,0	41	82,0	39	78,0	41	82,0	42	84,0	46	92,0
Incorrect	15	30,0	16	32,0	22	44,0	9	18,0	11	22,0	9	18,0	8	16,0	4	8,0
Total	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,

Table 21: Frequency and Percentages for **WFT** (Form-recognition)

WFT	disentangle		expedite		altruism		demise		scrutinize		inculcate		deprivation		allure	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
I have never seen	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	1	2,0	0	0,0	0	0,0
I have seen but I don't know meaning	3	6,0	7	14,0	5	10,0	0	0,0	4	8,0	2	4,0	0	0,0	2	4,0
I know (correct)	39	78,0	36	72,0	39	78,0	50	100,	42	84,0	46	92,0	50	100,	48	96,0
I know (incorrect)	8	16,0	7	14,0	6	12,0	0	0,0	4	8,0	1	2,0	0	0,0	0	0,0
Total	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,

Table 22: Frequency and Percentages for **WFT** (Meaning-recognition)

	disentangle		expedite		altruism		demise		scrutinize		inculcate		deprivation		allure	
WFT	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Correct	49	98,0	42	84,0	49	98,0	50	100,	50	100,	50	100,	49	98,0	49	98,0
Incorrect	1	2,0	8	16,0	1	2,0	0	0,0	0	0,0	0	0,0	1	2,0	1	2,0
Total	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,	50	100,

Appendix V

Mean analysis

Table 1 illustrates the data, number (n) of subjects, means (m), and standard deviations (sd) for form-recognition test and Table 30 for meaning-recognition test. On the form-recognition test, the purpose was to find out whether the participants could recognize the target word and in the meaning-recognition test, participants were asked to give the meaning of the target word. With the mean analysis central tendency of the scores was found. Standard deviation (sd) gives us information on the extent to which a set of scores varies in relation to the mean.

Table 1: Mean analysis results (Form-recognition test)

Factor		disentangle	expedite	altruism	demise	scrutinize	inculcate	deprivation	allure
IO	m	2,1000	1,7600	1,6400	1,9600	1,9600	1,8400	2,4200	2,2600
	n	50	50	50	50	50	50	50	50
	sd	,70711	,43142	,56279	,63760	,53299	,54810	,57463	,72309
IE	m	2,6200	1,9600	2,1800	2,2200	2,2000	2,1600	2,7600	2,5800
	n	50	50	50	50	50	50	50	50
	sd	,56749	,44994	,48192	,54548	,49487	,54810	,43142	,57463
WFT	m	2,8400	2,7200	2,7800	3,0000	2,8400	2,9000	3,0000	2,9600
	n	50	50	50	50	50	50	50	50
	sd	,37033	,45356	,41845	,00000	,37033	,36422	,00000	,19795
Total	m	2,5200	2,1467	2,2000	2,3933	2,3333	2,3000	2,7267	2,6000
	n	150	150	150	150	150	150	150	150
	sd	,64214	,60631	,67556	,65433	,59828	,66302	,47624	,61306

Table 2: Mean analysis (Meaning-recognition test)

Factor		disentangle	expedite	altruism	demise	scrutinize	inculcate	deprivation	allure
IO	m	5,0400	4,2000	5,6200	5,3600	6,0400	6,0000	6,4600	4,6400
	n	50	50	50	50	50	50	50	50
	sd	2,49865	2,14761	1,97835	2,08747	2,01990	1,90595	1,98165	2,31023
IE	m	5,5400	5,2600	5,4400	5,8800	6,1200	6,2800	6,3800	5,6000
	n	50	50	50	50	50	50	50	50
	sd	2,49252	1,87148	2,30492	1,78016	1,95500	1,71476	1,78303	1,92725
WFT	m	6,5400	7,1600	7,6600	7,8000	7,7600	7,9200	7,6800	7,5800
	n	50	50	50	50	50	50	50	50
	sd	1,45980	2,05397	,79821	,60609	,62466	,34047	,79385	,97080
Total	m	5,7067	5,5400	6,2400	6,3467	6,6400	6,7333	6,8400	5,9400
	n	150	150	150	150	150	150	150	150
	sd	2,27784	2,35913	2,06498	1,92471	1,83288	1,70930	1,70306	2,18976

Appendix VI

(Mean Analysis) Post-tests

Table 1: Mean Analysis (Post-test**)** (Form-recognition)

Factor		disentangle	expedite	altruism	demise	scrutinize	inculcate	deprivation	allure
IO	m	1,8800	1,9000	1,8200	1,8200	1,8400	1,8800	2,2800	2,0600
	n	50	50	50	50	50	50	50	50
	sd	,43519	,36422	,48192	,43753	,68094	,32826	,64015	,58589
IE	m	2,1400	2,0600	2,0200	1,9800	2,1400	1,8800	2,5200	2,4400
	n	50	50	50	50	50	50	50	50
	sd	,45221	,31364	,42809	,55291	,60643	,47980	,54361	,50143
WFT	m	2,1800	2,2400	2,2200	2,3000	2,3800	2,2000	2,6800	2,6600
	n	50	50	50	50	50	50	50	50
	sd	,38809	,43142	,50669	,46291	,53031	,49487	,47121	,47852
Total	m	2,0667	2,0667	2,0200	2,0333	2,1200	1,9867	2,4933	2,3867
	n	150	150	150	150	150	150	150	150
	sd	,44370	,39573	,49792	,52350	,64423	,46323	,57634	,57681

Table 2: Mean Analysis (Post-test**)** (Meaning-recognition)

Factor		disentangle	expedite	altruism	demise	scrutinize	inculcate	deprivation	allure
IO	m	2,2800	2,1600	2,7000	2,5000	2,6600	2,3400	3,1400	2,8200
	n	50	50	50	50	50	50	50	50
	sd	2,28607	2,04401	2,20621	2,20621	2,18165	2,06635	2,25886	2,34469
IE	m	3,9000	3,7200	4,0800	4,0400	4,0400	3,7600	4,4000	4,3200
	n	50	50	50	50	50	50	50	50
	sd	2,97781	2,87168	2,79825	2,92742	2,94133	2,80350	2,74048	2,86741
WFT	m	6,0800	6,0800	6,2600	6,1800	6,3000	5,9800	6,2600	6,3000
	n	50	50	50	50	50	50	50	50
	sd	2,43143	2,38053	2,22059	2,24690	2,02283	2,32546	2,08796	2,15946
Total	m	4,0867	3,9867	4,3467	4,2400	4,3333	4,0267	4,6000	4,4800
	n	150	150	150	150	150	150	150	150
	sd	3,00321	2,92636	2,82127	2,89336	2,83238	2,83304	2,68978	2,84433

Appendix VII

(ANOVA) Post-tests

Table 1: ANOVA (Post-test) (Form-recognition)

Post-test		Sum of Squares	df	Mean Square	F	Sig.
disentangle	Between Groups	2,653	2	1,327	7,310	,001
	Within Groups	26,680	147	,181		
	Total	29,333	149			
expedite	Between Groups	2,893	2	1,447	10,404	,000
	Within Groups	20,440	147	,139		
	Total	23,333	149			
altruism	Between Groups	4,000	2	2,000	8,925	,000
	Within Groups	32,940	147	,224		
	Total	36,940	149			
demise	Between Groups	5,973	2	2,987	12,594	,000
	Within Groups	34,860	147	,237		
	Total	40,833	149			
scrutinize	Between Groups	7,320	2	3,660	9,868	,000
	Within Groups	54,520	147	,371		
	Total	61,840	149			
inculcate	Between Groups	3,413	2	1,707	8,784	,000
	Within Groups	28,560	147	,194		
	Total	31,973	149			
deprivation	Between Groups	4,053	2	2,027	6,556	,002
	Within Groups	45,440	147	,309		
	Total	49,493	149			
allure	Between Groups	9,213	2	4,607	16,778	,000
	Within Groups	40,360	147	,275		
	Total	49,573	149			

Table 2: ANOVA (Post-test) (Meaning-recognition)

		Sum of Squares	df	Mean Square	F	Sig.
disentangle	Between Groups	363,613	2	181,807	27,264	,000
	Within Groups	980,260	147	6,668		
	Total	1343,873	149			
expedite	Between Groups	389,493	2	194,747	32,294	,000
	Within Groups	886,480	147	6,030		
	Total	1275,973	149			
altruism	Between Groups	322,173	2	161,087	27,413	,000
	Within Groups	863,800	147	5,876		
	Total	1185,973	149			
demise	Between Groups	341,560	2	170,780	27,715	,000
	Within Groups	905,800	147	6,162		
	Total	1247,360	149			
scrutinize	Between Groups	337,693	2	168,847	28,940	,000
	Within Groups	857,640	147	5,834		
	Total	1195,333	149			
inculcate	Between Groups	336,573	2	168,287	28,788	,000
	Within Groups	859,320	147	5,846		
	Total	1195,893	149			
deprivation	Between Groups	246,360	2	123,180	21,773	,000
	Within Groups	831,640	147	5,657		
	Total	1078,000	149			
allure	Between Groups	304,680	2	152,340	24,861	,000
	Within Groups	900,760	147	6,128		
	Total	1205,440	149			