

**The role of text comprehension,
L2 reading proficiency,
incidental vs. intentional vocabulary exposure
in intake, gain, and retention of target vocabulary**

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to the memory of my mother, Hürsen YAVAŞÇA

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ÖZET

Okuduğunu anlama, yabancı dilde okuduğunu anlama yeterliliği, metinlerdeki sözcükleri farkında olarak ya da farkında olmadan öğrenme faktörlerinin hedef sözcüklerin tanınmasına, sözcüklerde biçim-anlam ilişkisinin kurulmasına ve sözcüklerin hafızada kalıcılığına olan göreceli etkisi

En etkili kelime öğrenim yönteminin günümüzde hala tartışılmasının temel nedeni, kelime öğreniminin birçok faktöre bağlı olmasındandır. Burada bildirilen deneysel çalışmanın amacı okuduğunu anlama (daha az bilinen ve daha çok bilinen metinlerde), yabancı dilde okuduğunu anlama yeterliliği, metindeki sözcükleri farkında olarak ya da farkında olmadan öğrenme faktörlerinin hedef sözcüklerin tanınmasına, sözcüklerde biçim-anlam ilişkisinin kurulmasına ve sözcüklerin hafızada kalıcılığına olan göreceli etkisini araştırmaktır.

Bu araştırma İngilizce eğitim veren bir üniversitenin hazırlık okulunda yapılmıştır. Katılımcılar ana dili Türkçe olan ve yabancı dil olarak İngilizce öğrenen 68 kişiden oluşmaktadır. Katılımcılar, farkında olarak ya da farkında olmadan kelime öğrenme gruplara rasgele dağıtılmışlardır. Araştırma verileri beş ayrı oturumda toplanmıştır. Birinci oturumda katılımcılara Oxford Placement sınavı verilmiştir. İkinci oturumda sırasıyla Topic Familiarity anketi ve Cambridge Preliminary English sınavı uygulanmıştır. Üçüncü oturumda ise katılımcılardan daha az ve daha çok tanıdık oldukları konulardan oluşan metinler için anadillerinde Written Recall yapmaları istenmiştir. Dördüncü oturumda, hedef sözcüklerin tanınıp tanınmadığını ölçmek amacıyla, Word Recognition Memory sınavı uygulanmıştır. Hemen ardından, sözcüklerde biçim-anlam ilişkisinin kurulup kurulmadığını ölçmek için, Translation Production ve Translation Recognition sınavları verilmiştir. Beşinci oturumda, dört hafta

sonra, kelimelerin hafızada kalıcılığını ölçmek için Translation Production ve Translation Recognition sınavları tekrar verilmiştir.

Veriler aşamalı regresyon analizine tabi tutulmuştur. Analiz sonuçlarına göre; hedef sözcüğü tanımadaki en önemli yordayıcının okuduğunu anlama (daha az bilinen metinlerde) olduğu görülmüştür. Sözcükte biçim-anlam ilişkisi kurmada en önemli yordayıcının okuduğunu anlama (daha çok bilinen metinlerde) olduğu bulunmuştur. Ayrıca, ikinci yordayıcı değişken yabancı dilde okuduğunu anlama yeterliliği olmuştur. Hafızada kalıcılığın en önemli yordayıcısının okuduğunu anlama (daha çok bilinen metinlerde) değişkeni olduğu görülmüştür. İkinci yordayıcı değişken farkında olarak ya da farkında olmadan kelime öğrenimi olarak bulunmuştur. Üçüncü yordayıcı değişken yabancı dilde okuduğunu anlama yeterliliği olmuştur.

Anahtar kelimeler: okuduğunu anlama (daha az ve daha çok bilinen metinlerde), yabancı dilde okuduğunu anlama yeterliliği, metindeki sözcükleri farkında olarak ya da farkında olmadan öğrenme, sözcüklerin tanınması, sözcüklerde biçim-anlam ilişkisinin kurulması, sözcüklerin hafızada kalıcılığı

ABSTRACT

The role of text comprehension, L2 reading proficiency, incidental vs. intentional vocabulary exposure in intake, gain, and retention of target vocabulary

by

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How best to learn vocabulary is still unclear, partly because its realization is dependant upon a variety of factors. The purpose of this experimental study reported here is to investigate the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to intake, gain, and retention of target words.

The research was conducted at the preparatory school of an English-medium university. Participants were 68 native speakers of Turkish learning English as a Foreign Language. They were randomly assigned to one of the incidental or intentional vocabulary learning groups. Data collection was completed in five separate sessions. In session 1, participants took the Oxford Placement Test. In session 2, Topic Familiarity Questionnaire and Cambridge Preliminary English Test were administered. In session 3, participants were asked to perform a Written Recall for more and less familiar texts in their L1 (Turkish). In session 4, Word Recognition Memory Test was administered to measure intake of nonsense TWs. Following the Word Recognition Memory Test, Translation Production Test and Translation Recognition Test were administered to assess gain of nonsense TWs. In session 5, Translation Production Test and Translation Recognition Test were re-administered four weeks later to assess retention of TWs.

Data were submitted to stepwise regression analysis. The findings revealed that text comprehension from less familiar texts was a significant predictor of intake.

Text comprehension from more familiar texts and L2 reading proficiency were significant predictors of gain. Text comprehension from more familiar texts, incidental vs. intentional vocabulary exposure, and L2 reading proficiency were significant predictors of retention.

Keywords: text comprehension, L2 reading proficiency, incidental vs. intentional vocabulary exposure, intake, gain, retention

ABBREVIATIONS

TF: Topic familiarity

TFQ: Topic familiarity questionnaire

TC: Text comprehension

TC-MF: Text comprehension for more familiar texts

TC-LF: Text comprehension for less familiar texts

TWs: Target words

L1: First language (Turkish)

L2: Second language (English)

EFL: English as a Foreign Language (used synonymously with L2)

SLA: Second language acquisition

INC-G: Incidental vocabulary exposure group

INT-G: Intentional vocabulary exposure group

OPT: Oxford placement test

WRMT: Word recognition memory test

TPT: Translation production test

TRT: Translation recognition test

WM: Working memory

STM: Short-term memory

LTM: Long-term memory

CHAPTER ONE – INTRODUCTION

Theoretical Background of the Study

Vocabulary is recognized as one of the most important components of verbal and nonverbal communication. Because vocabulary learning is considered as the cornerstone of successful second language acquisition (or foreign language learning), it has been one of the most intriguing topics in language acquisition research. Many researchers agree on the importance of lexical knowledge in language learning (Coady, 1997; Coady & Huckin, 1997; Day, Omura, & Hiramatsu, 1991; Krashen, 1989, 1997). To Beglar and Hunt (2005), vocabulary is the central component in successful foreign language acquisition. While Meara (1980) considered vocabulary research the “neglected area”, Zahar, Cobb, and Spada (2001) point to the abundance of vocabulary studies.

The common belief in the context of first, second, or foreign language is that vocabulary is acquired primarily incidentally. That is, vocabulary acquisition occurs “as a by-product of reading activities not explicitly geared to vocabulary learning” (Huckin & Coady, 1999, p.183). Nagy, Herman, and Anderson (1985) point out that vocabulary can be incidentally acquired from reading in L1. Horst, Cobb, and Meara (1998), Hulstijn (1992), Krashen (1989), Wodinsky and Nation (1988) assert that incidental vocabulary learning also takes place in L2.

A variety of incidental vocabulary acquisition studies that were conducted have supported Krashen’s ‘Input Hypothesis’ in that ‘comprehensible input’ alone can do all the work for vocabulary learning (e.g., Barnes, Ginther, & Cochran, 1989; Herman, Anderson, Pearson, & Nagy, 1987, as cited in Krashen, 1989). According to Input Hypothesis, language is acquired subconsciously and learners’ focus is on the message, not on form. However, Laufer (2003) opposes Krashen’s (1989) claim by stating that reading alone is unlikely to be the best source of vocabulary acquisition (p.583).

Intentional vocabulary learning has also been a controversial issue in the field. The distinction between incidental and intentional learning according to Ellis (1994) lies in the focus of attention. That is, for intentional learning to take place, attention should be on the linguistic code (i.e., on form or form-meaning connections), whereas for incidental learning, attention should be placed on meaning (i.e., message content). Schmidt (1994) emphasizes the importance of the notion of ‘attention’, and puts forward the ‘Noticing Hypothesis’ (1990). By the same token, Hulstijn (2003) claims that intentional or incidental learning requires some attention and noticing, arguing “attention is deliberately directed at committing new information to memory in the case of the former whereas the involvement of attention is not deliberately geared to an articulated learning goal in the case of the latter” (p.357). Reider (2002) defines incidental and intentional learning by equating the concept of ‘consciousness’ with ‘intentionality’, and claims that the absence of consciousness results in incidental learning, whereas the presence of consciousness results in intentional learning. Taking the above mentioned arguments into consideration, today, some researchers agree with the superiority of incidental vocabulary acquisition claiming that as a form of input ‘reading alone’ is sufficient for vocabulary learning. On the other hand, supporters of intentional vocabulary learning believe that reading promotes L2 vocabulary learning only if other activities such as, the use of word glosses, dictionaries, or word-focused reading activities accompany reading.

Reading has been accepted as an influential way to learn vocabulary, thus substantial vocabulary acquisition does take place from reading. For example, Krashen (1989) states that reading promotes L2 vocabulary learning. Researchers seem to have reached a consensus on the assumption that greater vocabulary can lead to a better understanding of a reading text (McNiel, 1984; Nagy, Herman, & Anderson, 1985; Nation & Coady, 1988; Stoller & Grabe, 1993). Laufer (1997) asserts that without understanding the vocabulary

in a text, comprehension cannot be achieved. Therefore, factors involved in reading comprehension may play an important role in vocabulary learning.

Even though reading has been the focus of many investigations across a range of methodologies, defining reading is not easy since it involves the interaction of various components. From Rumelhart's perspective (1977), these components are the reader, the text, and the interaction between the reader and the text. Goodman (1968) calls reading a "psycholinguistic guessing game", in which the reader reconstructs the meaning from written input (p.126). Huey (1968) defines reading as the complicated working of the human mind. Grabe (1991) states that "a description of reading has to account for the notions that fluent reading is rapid, purposeful, interactive, comprehending, flexible, and gradually developing" (p.378). Çevik (2007) defines reading as "a process of interaction existing between the knowledge of the reader related with the given title and the subject and the text written by the author" (p.7). To Koda (2007), reading, as a complex activity, is "to construct text meaning based on visually encoded information" (p.1). Fiez and Petersen (1998) claim that reading is one of the most important skills we learn. Reading is an interactive process which requires various mental operations to be performed concurrently. While reading, readers deal with both micro-level text-driven features, such as pattern recognition, letter identification, and macro-level reader-driven features, such as activation of prior knowledge and monitoring comprehension (Bernhardt, 1991; Brantmeier, 2004). Pulido (2007) argues that "vocabulary can develop as a byproduct of engaging in the component processes involved in reading, such as lower-level linguistic and higher-level discourse processing and its integration with prior knowledge" (p.164). In another study, Pulido (2004) asserts:

reading is a complex cognitive process, one in which the reader, using previous knowledge, interacts with the information in the text to construct and integrate

meaning (....) During reading there is simultaneous cognitive processing involving pattern recognition, letter identification, lexical access, concept activation, syntactic analysis, propositional encoding, sentence comprehension, intersentence integration, activation of prior knowledge, and comprehension monitoring (p.20).

By the same token, “a large body of literature has argued that prior knowledge of text-related information strongly affects reading comprehension” (Anderson & Pearson, 1984; Bransford, Stein, & Shelton, 1984; Kintsch & van Dijk, 1978; Wilson & Anderson, 1986, as cited in Grabe, 1991, p.381). In the same vein, Grabe (1991) states that background knowledge is necessary for all types of inferences and text construction during comprehension.

The important role of ‘background knowledge’ as Coady (1979) calls it or ‘world knowledge’ as Bernhardt (1991) calls it, in text comprehension has long been recognized by researchers. Readers, when engaged in reading, are believed to go through active and interactive processes (Anderson, 1999; Grabe & Stoller, 2002). During such processes, readers tend to make use of background knowledge related to the text. Background knowledge in the reading process has been discussed within the framework of schema theory (e.g., Carrell & Eisterhold, 1983). Schema theory deals with “preexisting knowledge structures stored in the mind” (Nassaji, 2002, p. 444) and how readers combine their previous knowledge with the text (Alderson, 2000; Anderson, 1999; Carrell, 1983; Grabe & Stoller, 2002; Johnson, 1981, 1982). Carrell (1983, p.82) cites Rumelhart & Ortony (1977) on the definition of schemata as being thought as “interacting knowledge structures”. Rumelhart (1980) calls schemata as ‘building blocks of cognition’. Koda (2007) attests schemata consisting of “generalized information abstracted from a variety of instances” (p.1). Research on the psychological processes involved in comprehension clearly shows that “what we understand of something is a

function of our past experience, our background knowledge, or what are sometimes more technically called our schemata” (Carrell, 1983, p.81). Thus, previous research has shown that having rich schemata or background knowledge on a subject matter is closely related to effective reading comprehension. Rich schemata; therefore, can help students understand the reading material because it is easier for them to integrate their prior knowledge with the text.

Language proficiency is also important in vocabulary knowledge. The role of foreign language proficiency in lexical inferences has been addressed in a number of studies (Cain, Lemmon, & Oakhill, 2004; Haastrup, 1991; Haynes, 1993; Kondo-Brown, 2006). Lexical inferencing is influenced by the level of language proficiency of readers. Research has shown that the ability to comprehend a text, and in turn acquiring vocabulary is based not only on the readers’ background knowledge but also on the linguistic knowledge (Carrell, 1983). One of the significant theories about the relationship between language proficiency and reading comprehension in L2 context is the notion of a ‘threshold level’ of language proficiency (Cummins, 1979). In L2 reading, threshold level has been equated with language competence to mean that readers will not be able to read effectively until they develop some proficiency in the target language (Lee & Schallert, 1997). Laufer (1992) agrees that there is a threshold of competence below which it would be unreasonable to expect FL readers to apply any reading strategies. To Bernhardt and Kamil (1995) “in order to read in a SL, a level of L2 linguistic ability must first be achieved” (p.17).

Purpose of the Study

How best to learn and retain vocabulary is still unclear, partly because realisation of these two depend on a variety of factors. In order to explain the relevance of some of these factors, this experimental study was conducted. The purpose of the current study is

to investigate the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to intake, gain, and retention of target words. Specifically speaking, the following research questions are addressed:

1. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to intake of target words?

2. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to gain of target words?

3. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to retention of target words?

Significance of the Study

The current study is a partial replication of Pulido (2004, 2007) with an additional focus on incidental vs. intentional vocabulary learning. Although a number of studies have investigated the influence of text comprehension in relation to background knowledge (or topic familiarity), L2 reading proficiency, and incidental vs. intentional vocabulary exposure, no second (or foreign) language research exists examining and comparing the unique contributions of these three variables together. Moreover, research on the contributions of incidental vs. intentional vocabulary learning is relatively scarce (e.g., Gass, 1982; Konopak et al., 1987; Hulstijn, 2003; Shelton & Newhouse, 1981). Therefore, the purpose of this study is to investigate the combined contributions of above mentioned variables to intake, gain, and retention of target words.

It is important to note that, with the exemption of Pulido (2003, 2004, 2007), “one aspect of incidental learning, which is not often examined, is how well the words are retained over time” (Waring & Nation 2004, p.17). Moreover, as Pulido (2007) states “the majority of the inferencing studies did not measure retention of inferred words, and the retention-only studies did not measure inferencing. Most of the inferencing studies did not assess background knowledge or ‘difficulty’ in guessing. Another important issue in this present study is the use of ‘nonsense’ TWs to assess vocabulary intake, gain, and retention because the presence of nonsense TWs provide a controlled set of data. As Haynes (1993) explains, the use of nonsense words ensures that no participant has previous knowledge of the words to be guessed because the nonsense words would be unfamiliar to all.

The significance of the present study resides in its attempt to make a contribution to the field in regard to vocabulary learning with the impetus to investigate to what extent, if at all, text comprehension, L2 reading proficiency, and type of vocabulary exposure aid vocabulary intake, gain, and retention. An ongoing debate over vocabulary learning indicates that curriculum designers and teachers seek a better understanding of this controversial issue. In a pedagogical sense, it is hoped that the results from this investigation may shed some light on the importance of text and reader variables in designing reading lessons, as well as instructional materials in EFL context.

Definition of Terms

Intake: It is the ability to recognize new lexical forms in narrative texts.

Gain: It associates with meaning recognition and production of the TWs.

Retention: It refers to both recognizing and using the TWs even if long time passes (i.e. four weeks). It is the ability to recall what has been learned. In other words, it is the memory for the correct meaning of the word.

Text Comprehension: It refers to the number of semantic propositions produced by the participants after reading more and less familiar narrative texts.

Topic Familiarity (background knowledge): It refers to the degree of knowledge the reader possesses about the topic of the text.

L2 Reading Proficiency: It refers to participants' reading proficiency level in L2.

Intentional Vocabulary Exposure: It refers to the instruction stating in advance that participants will be tested on vocabulary they have encountered from the narrative texts. It is the learning of vocabulary with an intention to commit the words to memory.

Incidental Vocabulary Exposure: It requires participants to engage in reading the texts for the purpose of comprehension, without being told in advance that they will be tested on pre-selected target words.

CHAPTER TWO – LITERATURE REVIEW

This chapter provides a review of literature on concepts commonly associated with vocabulary learning.

Overview of L2 Vocabulary Knowledge

Laufer and Paribakht (1998) claim that vocabulary knowledge is not "an all-or-nothing phenomenon, but it rather involves "degrees of knowledge" (p.367), from just a familiarity with the word to using it. From this perspective, according to Nation (2001) knowing a word necessitates:

- (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 its 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
- (i) being able to recognize that there are collocations.

Similarly, Paribakht and Wesche (1999) claim that learners go through five stages before they assume that they know a particular word. These stages are: 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.

When encountering an unknown word in a reading text, learners may opt for one of these ways: (a) ignore the unimportant word, (b) look it up in a dictionary, (c) infer its meaning from context. In her 2007 study, Pulido argues that "L2 vocabulary

development through reading involves associating new forms with their functions or referents. This begins when learners encounter unfamiliar words during reading and consider them relevant enough to warrant further processing” (p.32). Many studies have shown that the most preferred option is making an attempt to guess the meaning of an unknown word in order to compensate for the lack of comprehension (e.g. Laufer 1997; Paribakht 2004; Qian 2002). The reason why guessing has been investigated widely is because of the general assumption claiming that the greater the mental effort in processing a word, the more likely it is to be remembered (e.g. Haastrup 1991; Hulstijn 1992; Mondria & Wit-de Boer, 1991). As Hulstijn (1992) and Mondria and Wit-de Boer (1991) point out, when unfamiliar words are difficult to guess, level of retention is better in comparison to unfamiliar words whose meaning can easily be inferred from context. Thus, lexical inferencing is an important strategy that L2 learners use when dealing with unknown words in reading (Nassaji, 2004, p.108). Haastrup (1991) defines lexical inferencing as “making informed guesses about the meaning of unknown words based on the available linguistic and non-linguistic cues in the text” (p. 40). Brown and Yule (1983) define inferencing as “the connections that people establish when they try to interpret texts” (as cited in Nassaji, 2004, p.108). According to Ellis (1994), inferring word meanings from context is an important strategy that enhances vocabulary learning. In a similar vein, Pulido (2007) points out:

L2 vocabulary development through reading is complex. It takes place through various component processes involved in text processing and comprehension. For example, it involves noticing that particular words are unfamiliar. Then, in the absence of dictionaries or human assistance, it requires inferring meaning (lexical inferencing), using context cues, linguistic, and extra-linguistic knowledge.

Readers must also attend to the connections between new lexical forms and their

meanings and integrate the new linguistic information into their developing language system (p.66).

A number of researchers in the field claim that lexical inferencing triggers learners' mental processing while they are formulating and testing hypothesis about a word's meaning (e.g., Fraser, 1999; Hulstijn, 1992; Rott, 2005; Rott & William, 2003). Reider (2003) argues that "in how far the meaning of a word can be specified by the reader will depend on the balance between the necessary and available resources in the text (i.e. clues) and in the learner (i.e. language knowledge, world knowledge)" (p.61).

In the light of above mentioned studies, some of the factors reported to have an effect on guessing are; vocabulary knowledge, language proficiency, attention, cognitive and mental involvement, context clues, and topic familiarity (Kaivanpanah & Alavi, 2008).

(1) *Vocabulary knowledge*: in order to guess accurately, readers should possess a considerable amount of vocabulary. When the proportion of unknown to known words is great, learners may be unable to use available cues. Laufer (1989), Liu and Nation (1985) state that if at least 95% of the running words in a text are not known, successful guessing may not take place. To Hu and Nation (2000) this amount is at least 98%. To Laufer (1989), knowledge of 3,000 word families (5,000 lexical items) is the minimum threshold to achieve 60% comprehension. Nation and Waring (1997) mention of 15,000 to 20,000 vocabulary to achieve native-like reading comprehension. Schmitt et al. (2001) hold that the 3000 level is needed for beginning to read authentic passages, and the 5000 word level makes reading authentic texts possible, allowing learners to guess the meaning of the unknown words from context.

(2) *Language proficiency*: guessing is influenced by the level of language proficiency (or L2 reading ability) of readers. Beginning readers and advanced readers have been shown to use guessing strategies more than intermediate readers. L2 beginners use more

guessing strategies because they are not familiar with many words, thus they tend to check the meaning of every unknown word they come across. Advanced L2 learners guess more frequently as they possess enough vocabulary to do so.

(3) *Attention*: learners may not notice the presence of an unknown word or assume that they know the meaning of the word which in fact they do not (Hulstijn *et al.*, 1996; Laufer, 1997). Even if they notice the unknown word, they may decide to ignore it, for they do not consider it necessary for comprehension.

(4) *Cognitive and mental involvement*: learners' cognitive and mental involvement in reading contributes to their guessing ability (Fraser 1999; Paribakht & Wesche 1999). For example, Fraser claims that the greater the mental effort in processing a text, the greater the possibility of inferencing.

(5) *Context clues*: Researchers (e.g. Liu & Nation, 1985; Haynes, 1993; Paribakht & Wesche, 1999) agree the presence of sufficient and clear semantic and linguistic clues is prerequisite for guessing. Moreover, the number of occurrence of the unknown word, text length, and text type are also factors that affect guessing.

(6) *Topic familiarity*: Alderson (2000) considers topic knowledge as an important facet influencing reading comprehension. Thus, it is easier to comprehend familiar texts.

Incidental versus Intentional Vocabulary Learning

In the field, a diverse terminology is used to contrast 'incidental' vs. 'intentional' learning, 'attended' vs. 'unattended' learning, 'implicit' acquisition vs. 'explicit' directed learning. For the purpose of this study, the focus will be on 'incidental' vs. 'intentional' learning. The distinction between incidental and intentional learning, according to Ellis (1999), is that attention is on linguistic code (i.e., on form or form-meaning connections) in intentional learning; whereas, attention is on meaning (i.e., message content) in incidental learning. As Schmidt (1994) claims, "any learning, whether incidental or

intentional, can only take place with some degree of attention” (p.198). By the same token, Hulstijn (2003) states that intentional or incidental learning requires both attention and noticing, but “attention is deliberately directed at committing new information to memory in the case of the former whereas the involvement of attention is not deliberately geared to an articulated learning goal in the case of the latter” (p.357). Ellis (1994) and Schmidt (1990) argue that if consciousness is equated with intentionality, the absence or presence of consciousness results in incidental or intentional learning. The inconsistent definition of the term ‘consciousness’ has been emphasized by a variety of researchers (e.g., Ellis, 1994; Schmidt, 1990) in the context of second language learning:

1. consciousness as *intentionality* (incidental vs. intentional learning)
2. consciousness as a product of *attention* (attended vs. unattended learning)
3. consciousness as *instruction* (implicit acquisition vs. explicit instruction)

In this study, “intentional vs. incidental learning can be distinguished in terms of the use of pre-learning instruction that either do, or do not, forewarn subjects about the existence of a subsequent retention test” (Eyesenck, 1982, p.198). The present study expands upon Eyesenck’s (1982) and Hulstijn’s (2001) definitions of incidental vs. intentional learning in that the participants in the incidental learning condition perform a task without being given instructions to learn, but are afterwards tested for intake, gain, and retention. On the other hand, the participants in the intentional learning condition are informed in advance of an upcoming test. The scope of the present study is in line with the definitions made by Hulstijn (2001):

incidental vocabulary learning is the learning of vocabulary as the by-product of any activity not explicitly geared to vocabulary learning, (...) learning without the intention to learn, or the learning of one thing (e.g., vocabulary) when the learner’s main concern is with something else (e.g., communication). Whereas, intentional

vocabulary learning referring to any activity aiming at committing lexical information to memory (p.271).

All of the above mentioned definitions have an emphasis on the presence or absence of intention as a key factor in vocabulary learning.

Incidental Vocabulary Acquisition

Vocabulary learning from reading has been a topic of interest for a long time. Nagy, Herman, and Anderson (1985) claim that vocabulary can be incidentally acquired and retained from reading in a first language, and incidental vocabulary learning is possible for second language as well (Horst, Cobb, & Meara, 1998). Nagy and Herman (1987) claim that incidental vocabulary learning from reading is the most powerful way of enhancing vocabulary growth. It is generally believed that most vocabulary in first, second, or foreign language is acquired incidentally. That is, vocabulary acquisition occurs “as a by-product of reading activities not explicitly geared to vocabulary learning” (Huckin & Coady, 1999, p.183). To Brown, Waring, and Donkaevbua (2008), incidental learning is:

the process of learning something without the intention of doing so. It is also learning one thing while intending to learn another thing. In terms of language acquisition, incidental learning is said to be an effective way of learning vocabulary from context (e.g., Day, Omura, & Hiramatsu, 1991; Jenkins, Stein, & Wysocki, 1984; Nagy, Herman, & Anderson, 1985; Sagari, Nation, & Meister, 1978) (p.1).

A general claim about the definition of incidental vocabulary acquisition is that it occurs unconsciously. As Schmidt (1994, p.168) points out, “the term *unconscious* in definitions of implicit (incidental) learning can be interpreted in two ways: firstly meaning that implicit learning *unintentional* and thus incidental, and secondly meaning that it involves induction *without awareness*”. Zahar (1999) claims that “much of the L2 research (e.g.,

Woodinsky & Nation 1988; Krashen, 1989; Hulstijn, 1992) undertaken to investigate vocabulary acquisition confirms that incidental vocabulary acquisition through reading does indeed occur” (p.1). Shelton and Newhouse (1981) observed that learners who were in an incidental learning situation significantly performed better in a subsequent recall test than subjects who were just instructed to learn the same material. By the same token, Gass (1982, as cited in Gass, 1999) found a superiority of incidental learners.

Moreover, relevant research suggests that incidental vocabulary learning through reading does take place to an extent that there is item frequency or multiple exposures (Hulstijn, Hollander, & Greidanus, 1996), and topic familiarity (Pulido, 2003, 2004). Horst et al. (1998), Jenkins et al. (1984), and Saragi et al. (1978) point out that the number of times an unknown word is met in context affects whether or not its meaning will be acquired. However, findings were inconclusive because it was not clear how many encounters in context were needed to learn the target word. In line with the above mentioned studies, it can be inferred that single encounter of a word in an incidental situation is not likely to result in acquisition of that word, since the learner may easily forget the meaning of the word. Nagy et al. (1985), Nagy et al. (1987), and Nagy and Herman (1985, 1987) assert that incidental vocabulary learning is a gradual and incremental process in which gains are made through repeated encounters. Similarly, Chen and Truscott (2010) report that “there is no clear conclusion regarding the number of encounters needed (...) This uncertainty is not surprising, as results are presumably influenced by a number of mediating variables including learners’ proficiency level” (p.694). In L2 acquisition research, Horst, Cobb, and Meara (1998) found that lexical gain through reading in an incidental condition was an average of 1 word in 12. However, in Horst et al., not taking proficiency level of the learners into consideration was reported as a major limitation.

Incidental vocabulary acquisition, in the present study, is the acquisition of target words that occur as a ‘by-product’ of reading a text for the purpose of comprehension. Participants’ aim was to understand the content of the text rather than to learn the target nonsense words in that text (e.g., Ellis, 1994; Hulstijn, 2001; Schmidt, 1994). In addition, participants were not told, prior to reading the text, that there would be a vocabulary test afterwards. In short, participants were not given an instruction to learn the words, but were asked to perform a task of reading which, indeed, was not the real target.

Intentional Vocabulary Learning

To Hulstijn (2001), intentional vocabulary learning refers to “any activity aiming at committing lexical information to memory” (p.271). According to Ellis (1999), for intentional learning to take place, attention should be on form-meaning connections. Schmidt (1994) emphasizes the importance of the notion of ‘attention’ in intentional learning. By the same token, Hulstijn (2003) states that intentional learning requires attention and noticing and “attention is deliberately directed at committing new information to memory” (p.357).

Laufer (2003) claims that intentional vocabulary learning almost always leads to greater and faster gains, with a better chance of retention. Ellis (1997) argues that the acquisition of semantic properties and the linking of form and meaning require intentional learning. Schmitt (2008) suggests that form and meaning may both benefit from intentional learning. “One theoretical position assumes that intentions have a motivating effect. One normally expects this effect to lead to general improvement in learning and in performance (...) According to this theory, intentions are expected to improve the learning of the material that is relevant to the intentions” (Klauer, 1984, p.324). Mc Laughlin (1965) claims that “learning is more difficult under disadvantageous (no-instruction) conditions” (p.373), in comparison to advantageous conditions

(instruction to learn). Konopac et al. (1987) reported a tendency for intentional learning group when focusing on word learning from context.

Intentional vocabulary learning, in the present study, refers to the instruction stating in advance that participants will be tested on vocabulary they have encountered from the narrative texts. It is the learning of target vocabulary with an intentional effort to commit the target words to memory.

Text Comprehension

Comprehension is to understand what we read. It is one of the most essential aims of reading. Ouellette (2006) attests that “reading does not only involve decoding and visual word recognition: The ultimate goal is comprehension” (p.556). Hammadou (1991) claims that “comprehension is not just understanding words, sentences, or even texts, but involves building a model within the mind of the comprehender” (p.27). Reider (2002) asserts:

“If the learner’s primary goal is text comprehension, we can assume that the attention she pays to unknown words in the text will be guided by a *comprehension* focus. She will therefore only invest if the gap in her mental model is big enough to give her a direct reason to invest energy in determining the missing conceptual structure. With this type of focus, however, the learner’s primary attention is still on the word’s contribution to the textual meaning, and we cannot automatically assume that she will take the step from text meaning to the word meaning level (...) If, however, the learner is interested in finding out the meaning of an unknown word independent of her text comprehension goal, we can speak of explicit learning focus on her part. Here, the conditions for the step from meaning inference to vocabulary acquisition are much better, as the learner’s focus is on the word level from the start” (p.60).

Assessment of text comprehension is also an important issue that needs clarification for the purpose of this study. There seems to be a general consensus on the use of immediate written recall task to assess reading comprehension because “it provides a purer measure of comprehension, uncomplicated by linguistic performance and tester interference” (Bernhardt, 1991, p.200). The procedure for immediate written recall requires readers to read a text and then to write down everything they can remember in their L1. Chang (2006) states that immediate written recall task has been widely used in second language reading research by a variety of researchers (e.g., Bernhardt, 1991; Lee, 1986; Pulido, 2004, 2007).

Text comprehension is affected by individual difference variables such as L2 reading proficiency, topic interest, prior knowledge, gender, motivation to read, attention and memory. For the purpose of this study, the focus will be on topic familiarity, attention and memory, and L2 reading proficiency.

*Topic Familiarity (Background Knowledge)**

One of the goals of reading is to learn some information from a text. “Reading is a complex cognitive process involving the construction and integration of information. One of the components of processing a text is the activation and use of appropriate knowledge structures, or background knowledge, stored in long-term memory” (Pulido, 2004, p.21). Grabe (2004) asserts that “background knowledge plays an important role in reading comprehension and (...) it is essential for all manner of inferences and text model construction during comprehension” (p.50). As mentioned earlier in the introduction part of the present study, “the facilitative role of topic familiarity has been motivated primarily via schema-based models of comprehension (e.g., Carrell & Eisterhold, 1983;

* In this study, topic familiarity and background knowledge are used interchangeably

Rumelhart, 1977), which propose that prestored schemata guides comprehension” (Leeser, 2007, p.232). In its simplest way, schema can be defined as “preexisting knowledge structures stored in the mind” (Nassaji, 2002, p. 444). Leeser (2004) points out that understanding a text partly depends on the reader’s background knowledge and familiarity with the topic in the text “because comprehension involves constructing meaning by relating information in the input to information stored in long-term memory, the process is facilitated if the content of the input is familiar to the reader” (p.590). Anderson and Pearson (1984) claim that old knowledge interacts with new knowledge during the act of comprehension. Therefore, “what we understand of something is a function of our past experience, our background knowledge, or what are sometimes more technically called our schemata” (Carrell, 1983, p.81). Grabe (2004) points out that readers, who have prior knowledge about the topic of the text, comprehend texts better. In other words, background knowledge supports comprehension. Alderson (2000) considers knowledge of the topic, as one of the reader variables, an important facet influencing reading comprehension. Thus, it is easier for L2 readers to comprehend texts in the presence of topic familiarity.

Research, to date, has shown that background knowledge may facilitate vocabulary learning or lexical inferencing (e.g., Chern, 1993; Haynes, 1993; Lee & Wolf, 1997; Pulido, 2003, 2004, 2007). In addition, various studies have demonstrated positive effects of background knowledge or topic familiarity on L2 reading comprehension (Barry & Lazarte, 1998; Carrell, 1987; Chen & Donin, 1997; Hudson, 1982; Lee, 1986; Pulido 2004). In her 2004 study, Pulido refers to lexical inferencing studies, pointing out positive effects of background knowledge on guessing the meaning of unfamiliar words during reading. Some studies (Chern, 1993; De Bot et al., 1997; Haastруп, 1989; Lee & Wolf, 1997; Paribakht & Wesche, 1999; Rott, 2000) demonstrated participants’ efficient

use of background knowledge during the process of lexical inferencing of unknown words from context of expository texts. In the same vein, Adams (1982) indicated successful effects of having knowledge of the topic. These studies reveal that guessing from context aids vocabulary learning; therefore, it can be assumed that guessing promotes retention possibly because during the process of guessing, “the reader performs a mental action on the word-form, making associations between the context and his/her own personal knowledge, thus establishing a cognitive foothold” (Mondria & Wit-de Boer, 1991, p.253). Some studies used think-aloud protocols to understand the use of background knowledge to guess meanings of unknown words (e.g., Haastrup, 1989; Lee & Wolf, 1997; Chern, 1993; Nassaji, 2003). Studies with advanced and intermediate students (Chern 1993; Nassaji 2003) and beginning EFL learners (Haastrup, 1989) showed that learners of all levels made use of background knowledge to guess meanings of words during think-aloud protocols. In a cross-sectional study, Lee and Wolf (1997) found that advanced, intermediate, and beginning learners of Spanish respectively made use of background knowledge to infer meaning during a think-aloud task. In an earlier study, Pulido (2004) found positive effects of background knowledge in a study with the impetus to find out about the effects of topic familiarity on lexical inferencing and vocabulary retention. She investigated the effects of background knowledge on incidental vocabulary acquisition of nonsense words with a cross-section of university Spanish learners. The results showed that the amount of target words retained from more familiar texts surpassed the ones from less familiar texts. In another study, Pulido (2003) wanted to find out about incidental vocabulary gain through reading more familiar or less familiar narrative texts. Familiarity was determined by participants’ ratings on a topic familiarity questionnaire. Results showed that vocabulary gains were greater under more familiar condition. Likewise, Rott (2000) reported occasional successful recall of target

words in the presence of background knowledge to guess the meaning of words.

However, the presence of topic familiarity did not always reveal positive effects. Some researchers came across with low retention rates pointing out that topic familiarity does not always affect vocabulary learning positively. Mondria and Wit-de Boer (1991), who assessed retention to confirm the guesses, reported low retention on an L2–L1 translation task, and weak and negative correlations between inferencing and retention. Similarly, Mondria (2003) also found low retention of correctly inferred words after a verification task, and high correct retention of incorrectly inferred words in a study with intermediate learners of Dutch. Probably due to the ease in guessing, learners did not pay sufficient attention to the word form and its meaning. A few studies (e.g., Carrell, 1983; Hammadou, 1991) did not find positive effects of topic familiarity on L2 reading comprehension. Leaser (2007) states that such contradictory findings result from methodological controversies and the concept of topic familiarity. He further claimed that only a limited number of studies demonstrated structural comparability between familiar and unfamiliar texts (e.g., Barry & Lazarte; Chen & Donin; Pulido, 2004), use more than one familiar and one unfamiliar passage topic to decrease the likelihood of a passage effect (e.g., Carrell & Wise, 1998; Chen & Donin, 1997; Pulido, 2004), or report learners' familiarity with chosen topics (Chen & Donin, 1997; Pulido, 2003, 2004).

Attention and Memory

Gairns and Redman (1986) emphasize that learning is also remembering. There are three memory systems that enable remembering:

Short Term Memory (SHM): is for storing or keeping the knowledge in the formation process. It keeps the knowledge for a few seconds because its capacity is limited.

Working Memory (WM): is the place where knowledge is settled and operated on.

Leaser (2007, p.232) defines WM “as a limited-capacity processing and storage system

that is necessary for carrying out a wide range of tasks.

Long Term Memory (LTM): is a type of filing system which has an unlimited capacity.

In order for knowledge to pass to LTM, repetition is needed.

The role of background knowledge on text processing, reading, and memory shows that as background knowledge increases, so does attentional allocation during reading (Bernhardt, 1991; Carrell et al., 1998; Graesser, Singer, & Trabasso, 1994; Lee, 1997; Nassaji, 2002; Robinson, 1995; Rumelhart, 1980; Swaffar et al., 1991). In other words, when readers bring relevant background knowledge to the reading process, or when they are familiar with the topic of a text, they can allocate more attentional space for textual analysis, since they will have a better memory performance during text processing. Due to greater working memory and attentional capacity, some learners process input more effectively. When a task is considered, noticing is likely to take place in the presence of topic familiarity in comparison to the absence of it because unfamiliar information may overload processing capacity of the learners (Skehan, 1998, as cited in Leeser, 2007, p.231). A number of researchers claim that background knowledge aids attentional allocation to input (e.g., Bernhardt, 1991; Grabe & Stoller, 2002; Graesser, Singer, & Trabasso, 1994; Koda, 2007; Rumelhart, 1980). Background knowledge is activated through bottom-up processing. The information stored in working memory acts as a “signal in an associative manner to all the information stored in long-term memory” (Nassaji, 2002, p.455). Thus, background knowledge is “activated in response to this signaling mechanism and can then influence the formation of further constructions, including meanings for new words” (Pulido, 2009, p.36). In another research Pulido (2007) asserts that “if there are too many constraints on the individual’s processing capacity, characteristic of lower proficiency learners, or if unfamiliar words are not deemed important enough to warrant deeper processing, then these words may be

processed more superficially, and are less likely to be retrieved from memory” (p.66). As proposed by ‘Involvement Load Theory’ (Laufer & Hulstijn, 2001), vocabulary retention is determined by ‘need’, ‘search’, and ‘evaluation’. “The theory predicts that the greater the involvement in a given task, the better the retention. Thus, to establish form–meaning connections for new words through reading, the new words must be noticed and sufficient attention allocated.” (Pulido, 2007, p.67). Carrell (1987) argues that if readers have background knowledge of a topic, they can allocate more attentional space for unfamiliar vocabulary in the text.

L2 Reading Proficiency

“L2 learners may use whatever information available to interpret new words, to the extent that their proficiency level enables them to use such information” (Pulido, 2007, p.67). Lee and Schallert (1997) state that in L2 reading, ‘threshold level’ is closely related to language competence, sometimes called a ‘linguistic ceiling’ to mean that readers will not be able to read effectively until they develop some proficiency in the target language. In other words, whether or not a reader has reached the threshold level may be a decisive factor in success or failure in L2 reading. To Bernhardt and Kamil (1995), “in order to read in a second language, a level of second language linguistic ability must first be achieved” (p.17). One component of this linguistic knowledge is lexical knowledge. L2 learners need to possess sufficient vocabulary for successful comprehension. It is generally believed that as L2 reading ability improves, so does guessing of unknown vocabulary from context because better readers have more available resources and contextual support. Moreover, as L2 reading ability improves, memory will also improve due to superior processing skills and available resources to form connections between the texts and the TWs. In addition, as L2 reading ability improves, it is likely that retention will improve due to success in former phases

of vocabulary learning.

In literature, there are examples that corroborate with above mentioned arguments. Pulido (2003) found that reading proficiency had a greater impact on lexical gains and retention. Chern (1993) reported significant effects of reading ability for advanced learners of English (L2) on lexical inferencing during reading. Pulido (2003) found a robust effect of L2 reading ability on short-term and delayed receptive retention of meaning through reading. Kondo-Brown (2006, as cited in Shen and Wu, 2009, p.190) examined the role of reading proficiency in 42 advanced Japanese language learners whom were asked to infer unknown Kanji words in authentic texts. Findings showed that more proficient students used context better than less proficient students. However, in some studies, effect of L2 reading ability was not observed. For example, Pulido (2004) found no effects of reading proficiency on TW 'episodic memory'. In Bengelil & Paribakht (2004), L2 reading ability was found to have no effect on lexical inferencing and retention.

Pulido (2009) claims that 'good readers', with an automatised capacity of lower level processing skills, have satisfactory resources to enable them construct and integrate the information in the text. Thus, they tend to make better lexical inferences. However, 'weak readers' are less successful in local and global comprehension which inhibits efficient inferencing. Laufer (1998) argues that guessing the meaning of words is not possible unless about 95% of the neighboring words are known to the reader and knowledge of 3,000 word families (5,000 lexical items) is the minimum threshold to read about 95% of the reading passage and achieve about 60% comprehension. She calls learners with fewer lexical items as 'poor readers'. Similarly, Hunt (1996) attests that inferring meaning from context works best when learners have the ability to recognize several thousands of high-frequency words in a context. Schmitt et al. (2001) assert that

the 3,000 word level is needed for beginning to read authentic texts, and at least 5,000 word level allows learners to guess the meaning of the unknown words from context. According to Laufer (1997), the problem of insufficient vocabulary may cause an inability to infer unknown words and thus, may impede reading comprehension.

The studies summarised above have investigated the influence of text comprehension in relation to background knowledge (or topic familiarity), L2 reading proficiency, and incidental vs. intentional vocabulary exposure. However, with exemption of Pulido (2004, 2007), no second (or foreign) language research exists examining and comparing the contributions of these three variables together. Therefore, the present study aims to investigate the combined contributions of above mentioned variables to intake, gain, and retention of target words by partially replicating Pulido (2004, 2007). Moreover, research on the contributions of incidental vs. intentional vocabulary learning is relatively scarce in the field (e.g., Gass, 1982; Konopak et al., 1987; Hulstijn, 2003; Shelton & Newhouse, 1981). Therefore, the purpose of this study is to investigate the combined contributions of above mentioned variables to intake, gain, and retention of target words.

CHAPTER THREE – RESEARCH METHODOLOGY

Introduction

This chapter, which explains the research methodology employed in the present study, comprises eight main sections: Aim of the Present Study, Research Questions, Definitions and Measurements of Variables, Participants, Data Collection, Data Collection Procedures, Data Analysis, Summary.

Aim of the Study

The present study explores the role of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure in intake, gain, and retention of target words.

Research Questions

This study is designed to investigate the following research questions:

1. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to intake of target words?
2. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to gain of target words?
3. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to retention of target words?

Definitions and Measurements of Variables

Dependent Variables

The dependent variables analyzed in this study are vocabulary intake, gain, and retention.

Intake

Vocabulary intake, in this study, is taken as the ability in recognizing new lexical forms that appear in narrative texts. It is a continuous variable. Word Recognition Memory Test, designed by the researcher, is used to measure intake immediately after reading the narrative texts.

Gain

Vocabulary gain, in this study, is associated with meaning recognition and production of the target words. It is a continuous variable. Two tests, translation production and translation recognition, designed by the researcher are administered immediately after reading the narrative texts to measure participants' production and recognition levels of the target words.

Retention

Vocabulary retention, in this study, refers to both recognizing and using the target words even if long time passes (i.e., four weeks). It is the ability to recall what has been learned. In other words, it is the memory for the correct meaning of the word. It is a continuous variable. Both tests (translation production and translation recognition) used to measure gain are used to measure retention four weeks after the participants read the narrative texts.

Independent Variables

Independent variables analyzed in this study are text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure.

Text Comprehension

Text comprehension refers to the amount of the semantic propositions produced by the participants after reading the narrative texts. It is a continuous variable measured through the scoring of the immediate written recalls in participants' L1 (Turkish). Two more familiar and two less familiar narrative texts, based on topic familiarity, are measured through a 10-item Likert scale topic familiarity questionnaire adapted from Pulido (2007).

L2 Reading Proficiency

L2 reading proficiency refers to the participants' reading proficiency level in L2. It is a continuous variable measured through Cambridge Preliminary English Test (Book 2 - 2003).

Vocabulary Exposure (Incidental vs. Intentional)

Vocabulary exposure is a categorical variable (intentional vs. incidental exposure). Incidental vocabulary exposure, in this study, requires participants to engage in reading the narrative texts for comprehension without being told in advance that they will be tested on the pre-selected target words. In other words, participants' focus is not on learning the words, but rather on comprehension. Intentional vocabulary exposure, in this study, refers to the instruction stating in advance that participants will be tested on vocabulary they have encountered from the narrative texts.

Participants

The research was conducted at the preparatory school of an English-medium private university in İstanbul, Turkey during 2010-2011 academic year. Participants were native speakers of Turkish learning English as a Foreign Language. Prior to the first data collection phase, all the students studying at EFL Preparatory School took the Oxford Placement Test (2004 edition) to assess their L2 (English) linguistic proficiency level

and also to crosscheck with their already assigned level measured by the university's in house placement test. It was confirmed that the participants' assigned level was accurate. In other words, the grades they got from the university's in house placement test and the ones from the placement test used for this study were similar. However, statistical analysis was not made. Participants who took part in this study were randomly selected 80 students from elementary and upper-intermediate levels. However, 12 students in total were dropped out from the study for not participating in intake and retention tests on the day that these tests were administered. Thus, a total of 68 students (elementary=34 & upper-intermediate=34) participated in data collection sessions and completed them all. 68 students were randomly assigned into two groups (incidental and intentional). In each group there were 34 students. Gender was not taken into consideration, for it was beyond the scope of this research. Participants were at similar ages, ranging from 17 to 19.

Data Collection

Narrative Texts

Four script-based narrative texts¹ were used in this study. Two of these texts were composed of *more familiar* and the other two of *less familiar* topics (Appendix A). Two more familiar texts, *The Trip to the Supermarket* and *The Doctor's Appointment*, were based on routine activities that participants were more familiar with from experience. Two less familiar texts, *Publishing an Article* and *Buying a House*, were less familiar to participants as they had little or no experience with them.

¹ Script-based texts are “narrative passages representing everyday routines or scenarios that are associated with certain actions, roles, places, and objects. Such passages are centered on scripts, or generic knowledge structures, which are purported to be stored in long-term memory based upon human experience” (Pulido, 2007, p.188)

Topic Familiarity Questionnaire (Appendix C) was used to determine participants' degree of familiarity with the topics.

All texts used in this study were adopted from Pulido (2004, 2007); however, minor modifications were made (e.g., 'pharmacy of the clinic' was changed into 'pharmacy' in the *Doctor's Appointment* text because the former was not a common expression used in Turkish language context) so that they sounded meaningful to native speakers of Turkish. Derivational and inflectional morphemes were preserved for nonsense TWs, and the number of nouns and verbs were comparable among all texts. As mentioned in Pulido (2004, 2007), all four texts were comparable to one another in terms of text length and structure. In other words, two more familiar narrative texts (*The Trip to the Supermarket*, 184 words and *The Doctor's Appointment*, 183 words) and two less familiar narrative texts (*Publishing an Article*, 182 words and *Buying a House*, 180 words) had almost the same number of words.

Target Words

32 words in total (8 words per text) were selected from the reading texts. There were four texts in total, two of which were rated on a Topic Familiarity Questionnaire as more familiar and the other two as less familiar to participants. For each of the four texts the researcher selected eight words based on Pulido (2004, 2007). Six of these words were nouns and two of them were verbs. Then she replaced those words with nonsense words to guarantee that the participants did not possess any prior knowledge of them (Appendix B).

Nonsense words were created by the researcher taking orthographic and morphological rules of English (participants' L2) into consideration and they served as the target words (hereafter, TWs) being investigated. The method of substituting the words that appear in a text with nonsense words (e.g., Bai, 2011; Keating, 2008; Pulido,

1999, 2004, 2007, 2009; Rieder, 2003; Watts, 2008; Webb, 2005, 2007) or pseudo words (e.g., Brown, Waring, & Donkaewbua, 2008; Hamado & Koda, 2008; Hulstijn, 1993; Lutjeharms, 2009; Peters, Hulstijn, Secru, & Shokouhi, 2009) was used by various L2 researchers in the field.

Each nonsense TW appeared only once in each text and the participants were not provided with any definitional context clues.

After the researcher created the nonsense words, a native speaker of English proofread them to determine whether or not they sounded English. Prior to the main study, all the words were piloted with a randomly selected sample of thirteen elementary level students.

Topic Familiarity Questionnaire

Topic Familiarity Questionnaire (hereafter, TFQ) was administered in the participants' L1 (Turkish) to assess their background knowledge, thus participants were asked to rate their familiarity with the topics on a scale of 1-5. A 10-item Likert scale TFQ was adopted from Pulido (2007), but a minor modification was made to an item so as to nativize it ('*playing a cribbage*' was changed into '*playing cards*' - iskambil kağıdı oynamak). The questionnaire (Appendix C) was translated into Turkish by the researcher abiding by the original version. Then, it was checked by two other English teachers, who were proficient in Turkish and English, to avoid any confusion. No corrections were reported by the two English teachers. It was piloted with a group of randomly selected 13 elementary level students prior to the main study

Table 3.1**Overall response frequency on TFQ**

Rating	More Familiar Texts				Less Familiar Texts			
	Doktor		Supermarket		Home buying		Publishing	
	f	%	f	%	f	%	f	%
1	0	0	0	0	25	37	48	71
2	2	3	0	0	30	44	18	26
3	6	9	2	3	10	15	2	3
4	22	32	18	26	3	4	0	0
5	38	56	48	71	0	0	0	0

(N=68)

Topic familiarity questionnaire results in Table 3.1 indicate that in terms of more familiar texts, 56% of the participants rated *The Doctor's Appointment* text as very familiar and 71% of the participants rated *Going to the Supermarket* text as very familiar. As for the less familiar texts, 37% of the participants rated *Buying a House* text as very unfamiliar and 71% of the participants rated *Publishing an Article* text as very unfamiliar. TFQ ratings were made on a scale from 1 (very unfamiliar with the activities) to 5 (very familiar with the activities)

Oxford Placement Test (2004 edition)

Oxford Placement Test (hereafter, OPT) was chosen to assess participants' level of English (L2) because it has proved to be an effective placement assessment and a reliable means of grading English language learners at all levels. Moreover, both the Listening and Grammar components of the OPT had been pre-tested over a five-year period with trial groups of native speakers of English and learners of English. Finally, tests were carried out in 2003 and 2004 for item and inter-test reliability to establish concurrent validity between OPT and a range of ESOL examinations, and to calibrate the OPT onto the Common European Framework against a range of international language examinations (see the Levels Chart in Appendix D). OPT was composed of two parts: grammar and listening.

Grammar Test

A 100-item multiple choice test of grammar was used to assess participants' language knowledge as well as reading comprehension and meaning in that they were presented in a sequence providing both situational and linguistic contexts. The Grammar Test was composed of two parts. Within each part, there were several short sub-sections, with a different context for each. The test was designed to last for 50 minutes.

Listening Test

A 100-item listening test was taken from authentic situations. The participants were asked to tick the correct answer in written form on the basis of what they heard from a native speaker (an English teacher). For example, the choices ranged from "I've got the things you wanted" to "I forgot the things you wanted". If participants heard "I've got", they had to tick that option. The listening test was designed to take 10 minutes. In the test the listening element was combined with a reading element, so that the correct choice depended on knowledge of both written and spoken forms of English, and reflected both accuracy of lexical acquisition across a range of items and the effective application of particular listening and reading microskills.

Both sections of the test had 100 items and produced percentage scores. Each question was awarded with 1 point. The total score out of 200 corresponded to one of the levels specified in the Levels Chart. In this study, Oxford Placement Test Band was used as an indicator of participants' English level.

L2 Reading Proficiency Test

Cambridge Preliminary English Test – Book 2 (2003 edition) was used to measure participants' L2 reading proficiency and it demonstrated a baseline score representing participants' ability to read texts in L2. Both incidental and intentional groups took the test. There were 25 questions in four parts. Participants had to choose the right answer

out of three or four options, match the questions to texts, or show whether a sentence about the text is correct or incorrect.

Immediate Written Recall in L1

The rationale for using a written recall protocol was to assess participants' actual text comprehension. After reading each text, participants were asked to recall, in their L1 (Turkish), as much as they could of the narrative texts they had read. Participants were also told that they could spend as much time as they wanted on each text, however, they could not go back to texts. "This technique is often held to provide a purer measure of comprehension, since test questions do not intervene between the reader and the text" (Alderson, p.230).

For scoring purposes, each text was divided into propositions to reflect its 'semantic content'. The focus was on meaning rather than the surface form. This procedure of dividing the text into idea units was modeled on Alderson (2000). Accordingly, in this study, four texts were divided into simple sentences with idea units. Each content word, phrase, or clause was treated as a separate idea unit (Appendix E). Segmentation of the texts into idea units was done by two independent raters. Inter-rater reliability of .976 was found. Disagreements were resolved through discussion. Each sentence, composed of several idea units, was given 1 point. So, text comprehension score was calculated by adding up the points given to each idea unit for more and less familiar passages.

Word Recognition Memory Test

Word Recognition Memory Test (hereafter, WRMT) was used to measure intake of nonsense TWs. "Intake was operationalized as a measure of accuracy in memory discrimination for recently processed information - in this case, the TW forms" (Pulido, 2007, p.168). Participants were given four separate test forms, each accounted for one of the four narrative texts, on the same day the narrative texts were read. Thirty-two words

for each text were listed on four test forms (Appendix F) Two test formats were created by reversing the order of the words in each story to avoid order effect. These test forms were evenly distributed. Participants were instructed to circle ‘Yes’ if they thought they had seen the word in the text they have read and ‘No’ if they had not. The task was self-paced. Layout of the test was adopted from Pulido (2007), but all the words that appeared in the test were created by the researcher. 32 words were generated according to the following criteria modeled after Pulido (2007, p.168):

- a. 8 TWs from the story
- b. 8 words from the story that were relevant to the theme
- c. 16 words that were relevant to the theme, but not mentioned in the texts.

The researcher created two different versions of all four formats by reversing the order of presentation of the items. The order of presentation of each WRMT form in the pack was counterbalanced to avoid order effect.

Assessing WRMT ment making discriminations between words that appeared in the texts and the ones that were not. Scoring procedure of the WRMT was modeled after Pulido (2007, p.169):

Participants’ HIT rate was considered as the possibility of saying ‘Yes’ to the 8 TWs. Participants’ FALSE ALARM rate was taken as the possibility of saying ‘Yes’ to 16 distractors (nontarget items). A formulated equation (Equation 1) calculated d' score to assess intake. d' score was formerly used by Baddeley (1998), Graesser and Nakamura (1982) and Pulido (2004).

$$\text{(Equation 1)} \quad d' = \frac{p^{\text{hits}(x/8)} - p^{\text{false alarms}(x/16)}}{1 - p^{\text{false alarms}(x/16)}}$$

x in the formula represented the number of accurately recognized words in the participants’ papers. The number of accurately recognized words was divided by 8 to get a measure of probability of HITS. The number of accurately recognized words was

divided by 16 to get a measure of probability of FALSE ALARMS. Maximum possible score was 1. An average of d' scores were calculated for more and less familiar texts.

Translation Production Test (L2-L1)

Translation Production Test (hereafter, TPT), designed by the researcher, was used to measure gain and retention of nonsense TWs on two occasions; immediately after reading and 4 weeks after reading. Both groups (incidental and intentional) took the test. Thirty-two nonsense TWs on the test form consisted of 8 verbs and 24 nouns. The words were all taken from the narrative texts. Verbs were in infinitive form and nouns were in original text form (Appendix G). Two test formats were created by reversing the order of the words to avoid order effect. Immediately after the participants read the narrative texts, they took TPT to assess gain. They were asked to produce a translation of TWs in their L1. Each word was awarded with 1 point. Maximum possible score for each text was 8. Total score for all four texts was 32.

Four weeks later, the participants took the same test. The same procedure was followed to assess retention.

Translation Recognition Test - Multiple Choice (L2-L1)

Translation Recognition Test (hereafter TRT) was used to measure gain and retention of nonsense TWs on two occasions; immediately after reading and 4 weeks after reading. Both groups (incidental and intentional) took the test. 32 nonsense TWs on the test form consisted of 8 verbs and 24 nouns. Two test formats were created by reversing the order of the words (Appendix H). Each word was awarded with 1 point. Maximum possible score for each text was 8. Total score for all four texts was 32.

Immediately after the participants read the narrative texts, they took the TRT to assess gain. They were asked to do a multiple choice test designed by the researcher. The options were written in the participants' L1 (Turkish). There were four possible Turkish

(L1) translations of the nonsense TWs and a fifth option 'I don't know'. Among four possible options, only one of them was the correct answer, the other three options were distractors. The rationale for the multiple choice test options were modeled on Pulido (2007, p.170). Each distractor was written according to the following criteria:

- a. contextually proximate to the TW
- b. schematically appropriate
- c. orthographically or phonologically close to another known word in L1 or L2 and plausible for the given context
- d. when possible, TW translations were included as distractors for other test items to avoid picking up the associations between TWs and their definitions from the test.

Participants took the same test 4 weeks later and the same procedure was followed to assess retention of the TWs.

Data Collection Procedures

Data collection was completed in five separate sessions for both incidental and intentional vocabulary exposure groups (hereafter, Inc-G and Int-G). All sessions took place with the permission of class teachers and the department head. Even though 80 students were randomly selected for the study, 12 students were dropped out for not completing all the sessions. A total of 68 students participated in data collection sessions.

Pilot Study

Topic Familiarity Questionnaire, Written Recall, Word Recognition Memory Test, Translation Production and Translation Recognition Tests were piloted a month prior to the main study with a sample of randomly selected 13 students. These students were not the ones used in this study.

*Session 1 (week 1)**Administration of Oxford Placement Test*

All EFL students studying at the preparatory school of the university took the Oxford Placement Test (2004 edition). OPT was administered to assess participants' general English level. Since all the students took this exam, English teachers other than the researcher were involved in the administration process. Grammar section of the test took 50 minutes and the listening section took 10 minutes. It was reported that all the students completed both sections on time.

*Session 2 (week 2)**Administration of TFQ and L2 Reading Proficiency Test*

On the first day of the week, TFQ was administered by the researcher in participants' L1(Turkish) to assess their background knowledge of the topics, thus participants were asked to rate their familiarity with 10 topics on a scale of 1-5. After the researcher explained the process in Turkish, all the participants completed the task in 15 minutes. In the light of the questionnaire results, two more familiar and two less familiar topics were chosen to construct four narrative texts.

On the same day, Cambridge Preliminary English Test was administered by the researcher to measure participants' L2 reading proficiency. Participants were provided with task explanation in their L1. There were 25 questions in four parts. Participants had to choose the right answer out of three or four options, match the questions to texts, or show whether a sentence about the text is correct or incorrect. The task lasted for 30 minutes.

*Session 3 (week 3)**Administration of Immediate Written Recalls*

Participants were asked to read four narrative texts (two more familiar, two less

familiar) and to perform an Immediate Written Recall for four of the texts in their L1(Turkish). Two more familiar texts were *Doctor's Appointment* and *A Trip to the Supermarket*. Two less familiar texts were *Buying a House* and *Publishing an Article*. After reading each text, participants were asked to recall, in their L1, as much as they could of the narrative texts they had read. Participants were told that they could spend as much time as they wanted on each text, however they could not go back to texts. They were also reminded that the recall protocol task was not a 'main idea summarization'. The rationale for using a written recall protocol was to assess participants' actual text comprehension. Each group received different instructions from the researcher before reading the narrative texts.

Incidental Vocabulary Exposure Group (Inc-G) was instructed to read the texts for the purpose of comprehension. They were not told in advance that there would be a vocabulary test afterwards. In other words, participants' focus was not on learning the words, but on comprehension. Intentional Vocabulary Exposure Group (Int-G), on the other hand, was instructed in advance to read the texts carefully, for they would be tested on vocabulary they had encountered within the narrative texts.

Session 4 (week 3)

Administration of Word Recognition Memory Test (intake), Translation Production and Translation Recognition Tests (gain)

Word Recognition Memory Test was administered to both groups (incidental and intentional) by the researcher to measure intake of TWs immediately after session 3. Both groups of participants were given four separate test forms, each accounted for one of the four narrative texts. Participants were instructed by the researcher to circle 'Yes' if they thought they had seen the word in the text they read and circle 'No' if they had not. The task was self-paced.

Following WRMT, firstly, Translation Production Test and then Translation Recognition Test were administered to both groups to assess gain of nonsense TWs.

Session 5 (week 7)

Administration of Translation Production Test and Translation Recognition Test (retention)

TPT and TRT were re-administered to both groups 4 weeks after they had read the narrative texts to measure retention of nonsense TWs. In other words, the same tests to assess gain were used to assess retention. Session 3 procedure was repeated.

Data Analysis

Correlation and Regression analyses were run respectively to determine the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to intake, gain, and retention of target words.

Summary

Overview of Research Questions, Instruments, Data Analyses

Research Questions	Instruments	Data Analysis
1. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to intake of target words?	Topic familiarity questionnaire, Written recall, L2 reading proficiency test, Word recognition memory test.	Stepwise Regression analysis
2. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to gain of target words?	Topic familiarity questionnaire, Written recall, L2 reading proficiency test, Word recognition memory test, Translation production test, Translation recognition test.	Stepwise Regression analysis
3. What are the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to retention of target words?	Topic familiarity questionnaire, Written recall, L2 reading proficiency test, Word recognition memory test, Translation production test, Translation recognition test.	Stepwise Regression analysis

CHAPTER FOUR – RESULTS and DISCUSSION

Introduction

This chapter presents the results of analyses indicated in chapter three and discusses the findings in relation to the research questions. Firstly, descriptive statistics for independent and dependent variables will be given. Then, contributions of independent variables to dependable variables of intake, gain, and retention will be presented.

Table 4.1**Descriptive statistics for L2 reading proficiency and text comprehension**

Measure	Min	Max	Mean	SD	Skewness	Kurtosis
L2 reading proficiency	44	84	65.53	12.33	-.09	-1.38
TC - More Familiar	1.80	12.69	5.00	2.11	1.16	1.99
TC - Less Familiar	3.72	16.423	7.47	2.54	1.14	1.71
TC - Average	4.97	20.17	9.94	3.20	.97	.89

(N=68)

Table 4.1 shows descriptive statistics for L2 reading proficiency and text comprehension. The means for L2 reading proficiency reflect percentage correct on Cambridge Preliminary English Test while the means for TC reflect percentage of semantic propositions correctly recalled from more and less familiar texts.

Text comprehension for more familiar texts is the average of *The Trip to the Supermarket* and *The Doctor's Appointment*. Text comprehension for less familiar texts is the average of *Publishing an Article* and *Buying a House*. TC average is the combined mean of all accurately recalled propositions across four texts.

For L2 reading proficiency, more semantic propositions were recalled from less familiar texts in comparison to more familiar texts.

Table 4.2**Descriptive statistics for vocabulary exposure groups**

	Incidental		Intentional	
	M	SD	M	SD
Intake	.27	.37	.49	.28
Gain	3.16	.93	3.86	1.10
Retention	2.15	.86	3.45	1.21

(N=68)

Descriptive statistics for vocabulary exposure groups are given in Table 4.2.

The means indicate that intentional vocabulary exposure group is more successful than incidental vocabulary exposure group when intake, gain, and retention are taken into consideration.

Table 4.3**Descriptive statistics for intake**

Measure	Min	Max	Mean	SD	Skewness	Kurtosis
Intake - More Familiar	-1.19	1.00	.33	.47	-.72	.25
Intake - Less Familiar	-.36	.90	.43	.28	-.71	.01
Intake – Average	-.75	.88	.38	.34	-.70	.38

(N=68)

Descriptive statistics for vocabulary intake are given in Table 4.3. Values reflect intake scores correct on guessing. Means are obtained based on Equation 1 (p.35). Intake scores for less familiar texts were greater than intake scores for more familiar texts. This shows that more words were recognized from less familiar texts.

Table 4.4**Descriptive statistics for gain**

	More Familiar Texts			Less Familiar Texts			More Familiar & Less Familiar Texts
	Recognition	Production	Average	Recognition	Production	Average	Average
Min	2.00	.50	1.50	0.00	0.00	.25	.88
Max	8.00	6.50	7.25	6.50	3.50	4.75	6.00
Mean	5.74	2.44	4.09	4.45	1.43	2.94	3.51
SD	1.38	1.63	1.30	1.37	1.02	.99	1.07
Skewness	-.43	.89	.44	-1.02	.42	.05	.39
Kurtosis	-.29	-.01	-.21	1.65	-1.01	-.07	-.13

(N=68)

Table 4.4 provides descriptive statistics for vocabulary gain. Gain from more familiar texts was higher than less familiar texts. Both translation recognition and translation production measures for more familiar texts were higher than less familiar texts. In addition, translation production means were lower in comparison to translation recognition means, and this suggested a likelihood of levels of vocabulary knowledge. Recognition test with its multiple choice format was less demanding than the production test because recognition test provided retrieval cues that aided information access.

Table 4.5**Descriptive statistics for retention**

	More Familiar Texts			Less Familiar Texts			More Familiar & Less Familiar Texts
	Recognition	Production	Average	Recognition	Production	Average	Average
Min	1.50	0.00	.75	0.00	0.00	0.00	.50
Max	8.00	7.00	7.50	7.00	5.00	5.00	5.88
Mean	4.96	1.56	3.26	3.63	1.06	2.35	2.80
SD	1.80	1.46	1.42	1.69	1.05	1.16	1.23
Skewness	-.28	1.57	.56	-.32	1.28	.08	.37
Kurtosis	-.82	2.90	.45	-.75	1.73	-.79	-.42

(N=68)

Table 4.5 provides descriptive statistics for vocabulary retention. Retention from more familiar texts was higher than retention from less familiar texts. Both translation recognition and production measures for more familiar texts were higher than less familiar texts. Moreover, translation production means were lower in comparison to translation recognition means because recognition is easier than production. Recognition test with its multiple choice format was less demanding than the production test because recognition test provided retrieval cues that aided information access.

*Contributions of L2 reading proficiency, text comprehension,
incidental vs. intentional vocabulary exposure
to vocabulary intake, gain, and retention*

Intake

Table 4.6

Intercorrelations among L2 reading proficiency, text comprehension, incidental vs. intentional vocabulary exposure, and intake

Measure	1	2	3	4	5	6	7	14
1-L2 reading proficiency	-							
2-TC - More Familiar	.605**	-						
3-TC - Less Familiar	.549**	.826**	-					
4-TC - Average	.608**	.972**	.935**	-				
5-Intake – More Familiar	.127	.318**	.391**	.362**	-			
6-Intake – Less Familiar	.261*	.430**	.420**	.445**	.639**	-		
7-Intake - Average	.195	.395**	.441**	.432**	.949**	.850**	-	
14-Vocabulary Exposure	.064	.318**	.211*	.288*	.218*	.219*	.255*	-

(N=68) *Note.* ** p < .01 * p < .05

Table 4.6 demonstrates intercorrelations among L2 reading proficiency, text comprehension, incidental vs. intentional vocabulary exposure, and intake.

L2 reading proficiency is not significantly correlated with intake from more familiar texts and average intake while it has significant but low relationship with intake from less familiar texts. On the other hand, text comprehension both from more and less familiar texts has moderate relationships with intake both from more and less familiar texts. Incidental vs. intentional vocabulary exposure has low relationship with intake both from more and less familiar texts, and average intake.

Table 4.7**Stepwise regression analysis for average intake**

Model	R	R ²	Adjusted R ²	S.E. of the Estimate	R ² change	F change	p of F change
1	.441	.194	.182	.310	.194	15.920	.000

Model 1: Predictors: (Constant), TC - Less Familiar

Model	Variable	B	Standard Error	β	t	P
1	(Constant)	.025	.098		.252	.802
	TC - Less Familiar	.072	.018	.441	3.990	.000

F(1,66)= 15.920 p < .000

With regard to the contributions of L2 reading proficiency, text comprehension, and type of vocabulary exposure on intake, a stepwise regression analysis was conducted as shown in Table 4.7.

The regression analysis revealed that L2 reading proficiency, type of vocabulary exposure, and text comprehension for more familiar texts were not significant predictors of intake. Only text comprehension for less familiar texts contributed as a significant predictor of intake. Text comprehension for less familiar texts explained % 19.4 of the total variance in intake, [F reg (1, 66) = 15.92, p <.000].

*Gain***Table 4.8**

Intercorrelations among L2 reading proficiency, text comprehension, incidental vs. intentional vocabulary exposure, and gain

Measure	1	2	3	4	8	9	10	14
1-L2 reading proficiency	-							
2-TC - More Familiar	.605**	-						
3-TC - Less Familiar	.549**	.826**	-					
4-TC - Average	.608**	.972**	.935**	-				
8-Gain - More Familiar	.524**	.610**	.598**	.632**	-			
9-Gain - Less Familiar	.450**	.484**	.497**	.511**	.742**	-		
10-Gain - Average	.527**	.594**	.593**	.620**	.951**	.913**	-	
14-Vocabulary Exposure	.064	.318**	.211*	.288*	.180	.329**	.266**	-

(N=68) *Note.* ** p < .01 * p < .05

Table 4.8 demonstrates intercorrelations among L2 reading proficiency, text comprehension, incidental vs. intentional vocabulary exposure, and gain.

L2 reading proficiency has a substantial relationship with gain from more and less familiar texts and average gain. Text comprehension from more and less familiar texts has a strong relationship with gain from more familiar texts. Text comprehension from more and less familiar texts has a substantial relationship with gain from less familiar texts. Average text comprehension has a strong relationship with average gain. Incidental vs. intentional vocabulary exposure has a low relationship with gain both from more and less familiar texts, and average gain.

Table 4.9**Stepwise regression analysis for average gain**

Model	R	R ²	Adjusted R ²	S.E. of the Estimate	R ² change	F change	p of F change
1	.594	.353	.344	.868	.353	36.066	.000
2	.630	.398	.379	.844	.044	4.764	.033

Model 1: Predictors: (Constant), TC - More Familiar

Model 2: Predictors: (Constant), TC - More Familiar, L2 reading proficiency

Model	Variable	B	Std. Error	β	t	P
1	(Constant)	1.538	.346		4.449	.000
	TC - More Familiar	.199	.033	.594	6.005	.000
2	(Constant)	.565	.558		1.013	.315
	TC - More Familiar	.145	.040	.435	3.599	.001
	L2 reading proficiency	.023	.011	.264	2.183	.033

Model 1: $F(1,66) = 36.066$, $p < .000$

Model 2: $F(2,65) = 21.443$, $p < .000$

A Stepwise regression analysis revealed that vocabulary exposure and text comprehension for less familiar texts were not significant predictors of gain. On the other hand, text comprehension for more familiar texts and L2 reading proficiency served as significant predictors of gain. Text comprehension for more familiar texts explained % 35.3 of the total variance, [$F_{reg}(1, 66) = 36.06$, $p < .000$]. L2 reading proficiency, as the second predictor of gain, explained additional % 4.5 of variance, [$F_{reg}(2, 65) = 21.44$, $p < .000$].

*Retention***Table 4.10**

Intercorrelations among L2 reading proficiency, text comprehension, incidental vs. intentional vocabulary exposure, and retention

Measure	1	2	3	4	11	12	13	14
1-L2 reading proficiency	-							
2-TC - More Familiar	.605**	-						
3-TC - Less Familiar	.549**	.826**	-					
4- TC - Average	.608**	.972**	.935**	-				
11-Retention - MF	.553**	.664**	.565**	.652**	-			
12-Retention - LF	.422**	.538**	.497**	.545**	.810**	-		
13-Retention - Average	.519**	.638**	.561**	.635**	.961**	.941**	-	
14-Vocabulary Exposure	.064	.318**	.211*	.288*	.374**	.448**	.444**	-

(N=68) *Note.* ** p < .01 * p < .05

Table 4.10 demonstrates intercorrelations among L2 reading proficiency, text comprehension, incidental vs. intentional vocabulary exposure, and retention.

L2 reading proficiency has a substantial relationship with retention from more and less familiar texts and average retention. Text comprehension from more familiar texts has a strong relationship with retention from more familiar texts and substantial relationship with retention from less familiar texts. Text comprehension from less familiar texts has a substantial relationship with retention from more and less familiar texts. Average text comprehension has a strong relationship with average retention. Incidental vs. intentional vocabulary exposure has substantial relationship with retention both from more and less familiar texts, and average retention.

Table 4.11**Stepwise regression analysis for average retention**

Model	R	R ²	Adjusted R ²	S.E. of the Estimate	R ² change	F change	p of F change
1	.638	.407	.398	.955	.407	45.281	.000
2	.701	.491	.475	.891	.084	10.699	.002
3	.750	.563	.543	.832	.072	10.590	.002

Model 1: Predictors: (Constant), TC - More Familiar

Model 2: Predictors: (Constant), TC - More Familiar, Vocabulary Exposure

Model 3: Predictors: (Constant), TC - MF, Vocabulary Exposure, L2 reading proficiency

Model	Variable	B	Std. Error	β	t	P
1	(Constant)	.367	.380		.965	.338
	TC - More Familiar	.245	.036	.638	6.729	.000
2	(Constant)	.498	.357		1.395	.168
	TC - More Familiar	.192	.038	.501	5.118	.000
	Vocabulary Exposure	.782	.239	.320	3.271	.002
3	(Constant)	-.936	.559		-1.721	.090
	TC - More Familiar	.094	.046	.246	2.043	.045
	Vocabulary Exposure	1.015	.234	.416	4.330	.000
	L2 reading proficiency	.035	.011	.354	3.254	.002

Model 1: $F(1,66) = 45.281$, $p < .000$

Model 2: $F(2,65) = 31.317$, $p < .000$

Model 3: $F(3,64) = 27.488$, $p < .000$

A Stepwise regression analysis revealed that text comprehension for less familiar texts was not a significant predictor of retention. The most significant predictor of retention was text comprehension for more familiar texts and it explained % 40.7 of the total variance, [$F_{reg}(1, 66) = 45.28$, $p < .000$]. Vocabulary exposure, as the second predictor of retention, explained % 8.4 unique variance, [$F_{reg}(2, 65) = 31.31$, $p < .000$]. The means (Table 4.2) indicate that intentional vocabulary exposure is more beneficial than incidental vocabulary exposure. L2 reading proficiency, as the third predictor of retention, explained additional % 7.2 of variance, [$F_{reg}(2, 64) = 27.49$, $p < .000$].

CHAPTER FIVE – CONCLUSION and IMPLICATIONS

The present study was conducted with an attempt to investigate the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, incidental vs. intentional vocabulary exposure to intake, gain, and retention of target words.

Findings related to contributions of independent variables to vocabulary intake indicate that L2 reading proficiency was not significantly correlated with intake from more familiar texts and average intake while it had significant but low relationship with intake from less familiar texts. Incidental vs. intentional vocabulary exposure had a low relationship with intake both from more and less familiar texts, and average intake. A moderate correlation between average text comprehension and average intake displayed that increase in text comprehension, measured via immediate text recall, was accompanied by increase in intake of the target words. As a result, text comprehension contributed to intake of target words. However, the finding stating that text comprehension from less familiar texts alone contributed to vocabulary intake (% 19.4) called for an attention-based interpretation. It is likely that participants paid relatively more attention to less familiar texts, and in turn they constructed richer mental representations of those texts. This finding is supported by Pulido, who in her research found that “recognition memory for the TWs from the less familiar conditions surpassed memory for the TWs from the more familiar conditions” (2007, p.183). Such a process might be the result of paying less attention to more familiar texts because participants might have thought that those texts were easier due to topic familiarity (or background knowledge), and therefore, could be comprehended without much effort. It is possible that if unfamiliar words were noticed, but not considered important for text comprehension, those words might have been processed at a more superficial level.

On the other hand, less familiar texts were more challenging as participants had little or no background knowledge of them, thus they might have felt the need to pay selective attention to the unknown words in less familiar texts considerably more than they did to in more familiar texts. Bearing in mind that making form-meaning connections for new lexical items in a text necessitates noticing unfamiliar words, sufficient attention should be allocated as attention is the key concept in noticing the input. For example, Schmidt (1990) stated that “consciousness, in the sense of ‘awareness’ of the form of input at the level of ‘noticing’, is necessary to subsequent second language acquisition” (as cited in Robinson, 1995, p.283). In other words, according to Schmidt’s (1995) ‘Noticing Hypothesis’, attention / awareness to input is a key concept in noticing and noticing is important for intake to take place. Schmidt (1994, 2001) also claimed that attention for input is a prerequisite for learning. Similarly, Ellis (1993) asserted the importance of noticing and attention in second language acquisition. All in all, an attention-based interpretation seems relevant for the interaction between text comprehension and vocabulary intake.

With regard to the first research question, the result stating that text comprehension from less familiar texts predicted vocabulary intake confirmed results from Carrell (1983), Lee (1986), Pulido (2004, 2007), Roller and Matambo (1992). As for L2 reading proficiency and incidental vs. intentional vocabulary exposure, the findings showed no effect on intake.

Findings related to contributions of independent variables to vocabulary gain indicate that L2 reading proficiency had a substantial relationship with gain from more and less familiar texts and average gain. Text comprehension from more and less familiar texts had a strong relationship with gain from more familiar texts. Text comprehension from

more and less familiar texts had a substantial relationship with gain from less familiar texts. Average text comprehension had a strong relationship with average gain. Incidental vs. intentional vocabulary exposure had a low relationship with gain both from more and less familiar texts, and average gain.

Text comprehension for more familiar texts was a significant predictor of gain (% 35.3) as determined by stepwise regression analysis. The present study confirms and expands the results from Pulido (2007) and Rott (1999) in that, increase in text comprehension, measured via immediate text recall, was accompanied by increase in gain of the target words. It can be inferred that as text comprehension for more familiar texts became superior, the information within the texts remained available in working memory, and this in turn, resulted in vocabulary gain. Pulido (2007) states that “greater levels of background knowledge contribute to efficiency of attentional allocation to input during reading, enabling richer analyses and textual interpretations, and in turn, superior memory performance” (p.161). Thus, the finding stating that text comprehension from only more familiar texts contributed to vocabulary gain might be the result of topic familiarity (or background knowledge) which had a significant role in determining the level of text comprehension. Although results for intake revealed that less familiar texts contributed more to vocabulary intake, this does not mean that participants left more familiar texts totally unattended during text comprehension. Probably, the target words were noticed and identified as ‘unfamiliar’, but because participants were familiar with the topics, they did not process the texts at a deeper level. From that perspective, presence of background knowledge might have aided the retrieval of vocabulary from more familiar texts. Consequently, interplay of topic familiarity seems relevant for the interaction between text comprehension from more familiar texts and gain. In addition, “translation recognition test itself contained retrieval clues (i.e. the L1 translation

options) which likely facilitated access to rich episodic memory traces about the local and global story context that had been constructed for more familiar story during the previous input processing cycle” (Pulido, 2007, p.80).

L2 reading proficiency, as the second predictor of gain (% 4.5), showed that as L2 reading proficiency improved, so did gain due to the availability of resources for a superior retrieval of the target words. As for incidental and intentional vocabulary exposure, stepwise regression analysis showed that vocabulary exposure was not a significant predictor of gain.

With regard to the second research question, the findings mirrored Pulido (2003, 2004, 2007), Rott (1999), and Baddeley (1998) in that; text comprehension was a significant predictor of gain. Moreover, the present study corroborates and expands upon Pulido, Rott, and Baddeley who likewise found that gains were much lower on the translation production measure compared to translation recognition measure. The ability to recognize L1 translation equivalents was better than the ability to produce them. In terms of L2 reading proficiency, this study corroborated with results from Pulido (2003) and Konopak (1988) in that as L2 reading proficiency improved, so did gain.

Findings related to contributions of independent variables to vocabulary retention indicate that L2 reading proficiency had a substantial relationship with retention from more and less familiar texts and average retention. Text comprehension from more familiar texts had a strong relationship with retention from more familiar texts and substantial relationship with retention from less familiar texts. Text comprehension from less familiar texts had a substantial relationship with retention from more and less familiar texts. Average text comprehension had a strong relationship with average retention. Incidental vs. intentional vocabulary exposure had a substantial relationship

with retention both from more and less familiar texts, and average retention.

According to the stepwise regression analysis, the most significant predictor of retention was text comprehension for more familiar texts (% 40.7). This specific finding is in accordance with the relevant finding for gain stating that gain from more familiar texts was higher in comparison to less familiar texts. It is not surprising to see that retention, similar to gain, from more familiar texts was higher, too. Vocabulary exposure was the second predictor of retention (% 8.4). L2 reading proficiency was the third predictor of retention (% 7.2).

With regard to the third research question, the result stating that as text comprehension from more familiar texts improved, so did retention corroborate findings from Pulido (2003, 2004, 2007, 2009). In terms of L2 reading proficiency, this study supports results from Pulido (2003).

Pedagogical Implications

Findings of this study offer several implications for the context of foreign language teaching. The results emphasize the relative contributions of text comprehension in more and less familiar texts, L2 reading proficiency, and incidental vs. intentional vocabulary exposure to intake, gain, and retention of target vocabulary.

To begin with, successful text comprehension necessitates noticing unfamiliar words and allocating sufficient attention to the input. Therefore, helping EFL students with the above mentioned processes would be effective for vocabulary learning.

Secondly, effects of reader variables (Alderson, 2000) such as topic familiarity (or background knowledge) on text comprehension should be acknowledged by practitioners because text recall becomes superior when learners have appropriate background knowledge (e.g., Carrell, 1987; Hudson, 1982; Lee, 1986; Pulido, 2003, 2007).

Thirdly, although incidental vocabulary acquisition has its own place in literature as an advantageous type of learning (e.g., Brown, Waring & Donkaevbua, 2008; Day, Omura, & Hiramatsu, 1991; Huckin & Coady, 1999; Hulstijn, 1992; Jenkins, Stein, & Wysocki, 1984; Krashen, 1989; Nagy, Herman, & Anderson, 1985; Nagy & Herman, 1987; Sagari, Nation, & Meister, 1978; Woodinsky & Nation 1988; Zahar, 1999), intentional learning paradigm should also be taken into consideration by practitioners. When learners are oriented to the task of reading not for comprehension, but for vocabulary learning as the goal, positive results may be achieved in the interest of intentional vocabulary intake, gain, and retention. It is evident from this study that “intentions have a motivating effect and one normally expects this effect to lead to general improvement in learning and in performance” (Klauer, 1984, p.324). Thus, instructors of English may consider stating explicitly what is expected of the learners when assigning them to a task and what to pay attention to.

Moreover, the correlations associated with translation production measure both for gain and retention were weaker in comparison to translation recognition measure. This finding is in accordance with Baddeley (1998), Rott (1999), and Pulido (2003, p.260) stating that “the multiple-choice format proved less demanding than the translation production format because it provided retrieval cues that were more helpful in accessing information stored about a word than was the absence of any cues, which was the situation for the translation production task”. In the light of above mentioned finding, testing units at schools should prepare tests with caution, especially the high-stake ones, to avoid test effects (higher probability of recalling an item resulting from the act of retrieving the item from memory). Also, testing units should keep in mind that “one form of assessment in comparison to another (e.g., translation recognition vs. translation production) might provide greater opportunities for learners to demonstrate vocabulary

gains from reading” (Pulido, 2003, p.267).

Finally, in terms of L2 reading proficiency, instructors may wish to consider teaching reading strategies, and create opportunities to read so as to boost learners’ proficiency level.

Limitations and Future Research

Even though important findings were obtained in the present study, there are several limitations to note.

First, participants for this study were 68 university students from two proficiency levels. Had there been more participants across a broader range of proficiency levels, results could be more generalizable.

Second, participants in this study were provided with only one exposure to the nonsense target words in each text. Repeated exposures to the target words might have resulted in superior retention scores.

Thirdly, although immediate recall protocol is believed to provide the most efficient measure of text comprehension, we cannot be sure of what goes on in the mind of the participants at the time of recall. Thus, it is difficult to determine reasons for any missing information during recall. In other words, we can never be quite sure whether certain information in the text was not recalled due to lack of comprehension or other factors such as individual differences.

In addition, the present study is restricted in the sense that text processing might have been affected by text-based variables such as text length and genre. Presence of longer expository texts, per se, might have demonstrated different outcomes.

Moreover, as Pulido points out, “gathering online response time latencies, in addition to score of accuracy, might clarify the nature and role of attentional allocation during reading” (Pulido, 2007, p.186).

Furthermore, quantitative research methods were used in this study. Incorporating qualitative methods such as; semi-structured interviews might have yielded more detailed interpretation of results.

Finally, even though participants were less familiar with the topics in both of the less familiar texts, as reported in the topic familiarity questionnaire, it is likely that some of them might still have had a certain amount of background knowledge about those topics.

APPENDIX A.01 – Narrative texts with nonsense TWs: more familiar text 1**The Doctor's Appointment**

It was January and Jack felt very sick. He thought that he had the flu because it was just the season to have it. For this reason, he went to the clinic. He entered into the brind of Doctor Smith and he went over to the receptionist to check in. Afterward, he sat down and sherned through some magazines. He also looked around at the other pars. Soon after the nurse called him. Jack followed her to the rund. There, the nurse took his vital signs. Shortly afterward, the doctor came in and asked him how he felt. Jack was very congested and had a chill and headache. Then, Jack got up on the exam table and while he opened his mouth the doctor swended his throat. Then, Jack got dressed. Later, the doctor wrote down something in his lidel and he gave Jack a dintion. Doctor explained him that the cough syrup was for his cough. He also gave Jack some useful manch. Then, Jack went directly to the pharmacy to buy his medicine. Finally, Jack left the pharmacy and went home.

APPENDIX A.02 – Narrative texts with nonsense TWs: more familiar text 2**The Trip to the Supermarket**

Today Sue realized that the deint was empty, so she got her purse and drove to the supermarket. She parked the car and entered into the supermarket. She got a cart and took the list out of her purse. She began to take a trip through the goalways. First, she went to the canned goods section because she wanted soup. There were so many brands that she decided to conflect the prices. Then, she continued toward the fruit and vegetable stands to buy grapes. She chose a bunch. Afterward, she went to the bakery to buy bread. She excented the shopkeeper and asked for a loaf. Then she continued through the supermarket to see if she needed anything else. She had everything, so she walked toward the sention. There were many people standing in line. Sue looked at the cigarette packages on the fand. Finally, it was her turn. She placed everything on the charp and the clerk began to ring up the prices. Afterward, Sue took out her credit card and paid her bill. Finally, she got the trens and left the supermarket.

APPENDIX A.03 – Narrative texts with nonsense TWs: less familiar text 1**Buying a House**

Mark wanted to buy a home. So he obtained a brochure to see what there was on the market. He began to investigate little by little the neighborhoods of the city. He wanted a nice house with a lot of space. He also wanted a lot of windows. When he knew what he wanted, he went to the parent to get more informed. Several days later, Mark and the orphan visited various houses throughout the city. In each of the houses, Mark informed himself of the potential problems. After looking around for a week, he finally found a house that he liked. Then he had to predict the bond with the owner. Afterward, Mark and his lawyer signed the agreement. Mark had to put down a deposit for the house. Then he went to the bank to arrange the mortgage. There, he decided how much he wanted to spend on the contract. Before signing, he inspected the house for the last time. Since everything seemed alright to him, he signed all of the necessary documents. Instantly, Mark became a homeowner.

APPENDIX A.04 – Narrative texts with nonsense TWs: less familiar text 2**Publishing an Article**

Kathy wanted to publish the results of her investigation. So she began to prepare the paper according to the mardles that the journal required. She frained all of the acknowledgements and she ended up with four anonymous copies. Afterward, she wrote a cover letter. She attached it to the four copies and sent it all to the editor to see if it seemed interesting to the editor. After several days, the indant arrived. Two months later, Kathy received all of the feedback from the hudlers. She was happy because they had invited her to dinert the manuscript, even though she had to make some tarmins. So, diligently, she began to revise it according to the pattins of the editor. She finished by the deadline. Two months before publication, she received the galley proofs. She had three days to make changes. Also, she had to sign the copyright canop. Afterward, she sent everything off to the editor. Finally, she was done with everything. In order to read her article she had to wait until the publication of the next edition of *Modern Language*.

APPENDIX B.01 – Nonsense TWs: more familiar texts 1 and 2**The Doctor's Appointment**

<u>Target Word</u>	<u>English Equivalent</u>	<u>Turkish Equivalent</u>
pars-----	patients-----	hastalar
brind-----	waiting room-----	bekleme odası
lidel-----	file-----	dosya
rund-----	exam room-----	muayene odası
dintion-----	prescription-----	reçete
manch-----	advice-----	tavsiye
to swend-----	to examine-----	muayene etmek
to shern-----	to glance-----	göz gezdirmek

The Trip to the Supermarket

<u>Target Word</u>	<u>English Equivalent</u>	<u>Turkish Equivalent</u>
goalways-----	aisles-----	koridorlar
trens-----	bags-----	torbalar/poşetler
deint-----	refrigerator-----	buzdolabı
fand-----	rack-----	raf
charp-----	counter-----	tezgah
sention-----	checkout-----	kasa
to conflect-----	to compare-----	karşılaştırmak
to excent-----	to greet-----	selam vermek

APPENDIX B.02 – Nonsense TWs: less familiar texts 1 and 2**Buying a House**

<u>Target Word</u>	<u>English Equivalent</u>	<u>Turkish Equivalent</u>
orpher-----	realtor-----	emlakçı
allaintment-----	agrement-----	kontrat
lond-----	sale-----	satış
arent-----	real estate agency-----	emlak ofisi
eginant-----	paperwork-----	evrak
convint-----	down payment-----	peşinat
to segrent-----	to close a deal-----	anlaşmaya varmak
to pardict-----	to negotiate-----	pazarlık yapmak

Publishing an Article

<u>Target Word</u>	<u>English Equivalent</u>	<u>Turkish Equivalent</u>
mardles-----	guidelines-----	yönergeler
tarmins-----	revisions-----	düzeltilmeler
hudlers-----	reviewers-----	eleştirmenler
canop-----	agreement-----	anlaşma
indant-----	letter of receipt-----	kabul mektubu
pattins-----	stipulations-----	şartlar
to fraim-----	to delete-----	silmek
to dinert-----	to submit-----	sunmak

APPENDIX C – Topic Familiarity Questionnaire

Name / Surname: _____

Track / Class: _____

Açıklamalar: Aşağıda on aktivitenin listesi bulunmaktadır.

Lütfen bu aktivitelere olan tanıdıklık derecenizi aşağıdaki ölçeğe göre sınıflandırınız.

ÇOK YABANCI 1 2 3 4 5 ÇOK TANIDIK

Çok Yabancı (1): Böyle bir durumda hangi aktivitelerin uygun olacağı veya aktivitelerin oluş sırası hakkında hiçbir fikrim yok.

Çok Tanıdık (5): Genel olarak bu durumu içeren bütün aşamalar çok tanıdık. Bu aşamaların ne olduğu ve oluş sırası ile ilgili detaylı bir açıklama yapabilirim.

	ÇOK YABANCI	1	2	3	4	5	ÇOK TANIDIK
1. İskambil kağıdı oynamak		1	2	3	4	5	
2. Araba almak		1	2	3	4	5	
3. Doktora gitmek		1	2	3	4	5	
4. Mali portfolyo hazırlamak		1	2	3	4	5	
5. Bilimsel makale yayımlamak		1	2	3	4	5	
6. Derse kayıt yaptırmak		1	2	3	4	5	
7. Ev almak		1	2	3	4	5	
8. Market alışverişine gitmek		1	2	3	4	5	
9. Hindi doldurmak		1	2	3	4	5	
10. Arabaya benzin doldurmak		1	2	3	4	5	

APPENDIX D – Levels Chart

OPT Band	OPT Score	OPT Language Level	Common European Framework Level
9	198-200	Functionally bilingual	
8	190-197	Professional command – expert user	
7	170-189	Highly proficient – very advanced user	C2 Mastery – very good user
6	150-169	Proficient – advanced user	C1 Effective Operational Proficiency – good user
5	135-149	Upper Intermediate – competent user	B2 Vantage – independent user(+)
4	120-134	Lower Intermediate – modest user	B1 Threshold – independent user(-)
3	105-119	Elementary – limited user	A2 Waystage
2	90-104	Basic – extremely limited user	A1 Breakthrough
1	80-89	False beginner – minimal user	
0	Below 75	Beginner	

APPENDIX E.01 – Written Recall: idea units (English) for more familiar text 1**The Doctor's Appointment**

1. It was January
2. Jack felt very sick
3. He thought that he had the flu
4. Because it was just the season to have it
5. For this reason, he went to the clinic
6. He entered into the waiting room of Doctor Smith
7. He went over to the receptionist to check in
8. Afterward, he sat down
9. He glanced through some magazines
10. He also looked around at the other patients
11. Soon after the nurse called him
12. Jack followed her to the exam room
13. There, the nurse took his vital signs
14. Shortly afterward, the doctor came in
15. He asked him how he felt
16. Jack was very congested
17. He had a chill
18. He had a headache
19. Then, Jack got up on the exam table
20. He opened his mouth
21. The doctor examined his throat
22. Then, Jack got dressed
23. Later, the doctor wrote down something in his file
24. He gave Jack a prescription
25. Doctor explained him that the cough syrup was for his cough
26. He also gave Jack some useful advice
27. Then, Jack went directly to the pharmacy to buy his medicine
28. Finally, Jack left the pharmacy
29. Jack went home

APPENDIX E.02 – Written Recall: idea units (English) for more familiar text 2**The Trip to the Supermarket**

1. Today Sue realized that the refrigerator was empty
2. So she got her purse
3. She drove to the supermarket
4. She parked the car
5. She entered into the supermarket
6. She got a cart
7. She took the list out of her purse.
8. She began to take a trip through the aisles
9. First, she went to the canned goods section because she wanted soup
10. There were so many brands that she decided to compare the prices
11. Then, she continued toward the fruit and vegetable stands to buy grapes
12. She chose a bunch
13. Afterward, she went to the bakery to buy bread
14. She greeted the shopkeeper
15. She asked for a loaf
16. Then she continued through the supermarket to see if she needed anything else
17. She had everything, so she walked toward the checkout
18. There were many people standing in line
19. Sue looked at the cigarette packages on the rack
20. Finally, it was her turn
21. She placed everything on the counter
22. The clerk began to ring up the prices
23. Afterward, Sue took out her credit card
24. She paid her bill.
25. Finally, she got the bags
26. She left the supermarket

APPENDIX E.03 – Written Recall: idea units (English) for less familiar text 1**Buying a House**

1. Mark wanted to buy a home
2. He obtained a brochure
3. He wanted to see what was on the market
4. He began to investigate little by little the neighborhoods of the city
5. He wanted a nice house with a lot of space
6. He also wanted a lot of windows
7. When he knew what he wanted, he went to the real estate agency to get more informed
8. Several days later, Mark and the realtor visited various houses throughout the city
9. In each of the houses, Mark informed himself of the potential problems
10. After looking around for a week, he finally found a house that he liked
11. Then he had to negotiate the sale with the owner
12. Afterward, Mark and his lawyer signed the agreement
13. Mark had to put down a deposit for the house
14. Then he went to the bank to arrange the mortgage
15. There, he decided how much he wanted to spend on the down payment
16. Before closing the deal, he inspected the house for the last time
17. Since everything seemed alright to him, he signed all of the necessary paperwork
18. Instantly, Mark became a homeowner

APPENDIX E.04 – Written Recall: idea units (English) for less familiar text 2**Publishing an Article**

1. Kathy wanted to publish the results of her investigation
2. So she began to prepare the paper according to the guidelines that the journal required
3. She deleted all of the acknowledgements
4. She ended up with four anonymous copies
5. Afterward, she wrote a cover letter
6. She attached it to the four copies
7. She sent it all to the editor to see if it seemed interesting to the editor
8. After several days, the letter of receipt arrived
9. Two months later, Kathy received all of the feedback from the reviewers
10. She was happy
11. Because they had invited her to submit the manuscript, even though she had to make some revisions
12. So, diligently, she began to revise it according to the stipulations of the editor
13. She finished by the deadline
14. Two months before publication, she received the galley proofs
15. She had three days to make changes
16. Also, she had to sign the copyright agreement
17. Afterward, she sent everything off to the editor
18. Finally, she was done with everything
19. In order to read her article she had to wait until the publication of the next edition of *Modern Language*

APPENDIX E.05 – Written Recall: idea units (Turkish) for more familiar text 1**The Doctor's Appointment / Doktor Randevusu**

1. Ocak ayıydı
2. Jack kendini çok hasta hissetti
3. Grip olduğunu düşündü
4. Çünkü tam da (grip) mevsimiydi
5. Bu yüzden kliniğe gitti
6. Doktor Smith'in **bekleme odasına** girdi
7. Kaydolmak için resepsiyon görevlisine yöneldi
8. Sonrasında, oturdu
9. Bazı dergilere **göz gezdirdi**
10. Ayrıca etraftaki diğer **hastalara** da baktı
11. Çok geçmeden hemşire onu çağırdı
12. Jack hemşireyi **muayne odasına** doğru takip etti
13. Orada hemşire onun hayati belirtilerini ölçtü
14. Kısa bir süre sonra, doktor içeri girdi
15. Jack'e nasıl hissettiğini sordu
16. Jack çok tıkalıydı
17. Titremesi vardı
18. Baş ağrısı vardı
19. Sonra, muayne masasında doğruldu
20. Ağızını açtı
21. Doktor onun boğazını **kontrol etti**
22. Sonra (Jack) giyindi
23. Daha sonra, doktor **dosyasına** bir şeyler yazdı
24. Jack'e bir **reçete** verdi
25. Öksürük şurubu'nun öksürüğü için olduğunu açıkladı
26. Ayrıca doktor Jack'e **tavsiye** verdi / tavsiyede bulundu
27. Sonra, Jack ilacını almak için doğruca eczaneye gitti
28. En sonunda, (Jack) eczane'den ayrıldı
29. Eve gitti.

APPENDIX E.06 – Written Recall: idea units (Turkish) for more familiar text 2**The Trip to the Supermarket / Süpermarket'e Gitmek**

1. Bugün Sue **buzdolabının** boş olduğunu fark etti
2. Bu yüzden cüzdanını aldı
3. Arabasıyla süpermarkete gitti
4. Arabasını park etti
5. Süpermarkete girdi
6. Bir el arabası aldı
7. Alışveriş listesini cüzdanından çıkardı
8. **Koridorlar** arasında turlamaya başladı
9. Önce, konserve ürünler bölümüne gitti çünkü çorba almak istedi
10. O kadar çok marka vardı ki fiyatları **karşılaştırmaya** karar Verdi
11. Sonra, üzüm almak için meyve ve sebze standlarına doğru ilerledi
12. Bir salkım seçti
13. Sonrasında, ekme almak için fırına gitti
14. Dükkan sahibini **selamladı**
15. Bir somun (ekmek) istedi
16. Sonra başka bir şeye ihtiyacı var mı diye bakmak için süpermarkette ilerledi
17. Her şeyi almıştı, bu yüzden **kasaya** doğru yürüdü
18. Sırada bekleyen birçok insan vardı
19. Sue **raftaki** sigara paketlerine baktı
20. Sonunda, onun sırası gelmişti
21. Her şeyi **tezgahın** üzerine koydu
22. Kasiyer fiyatları işlemeye başladı
23. Sonrasında, Sue kredi kartını çıkardı
24. Ücreti ödedi
25. En sonunda **torbaları** aldı
26. Süpermarketten ayrıldı

APPENDIX E.07 – Written Recall: idea units (Turkish) for less familiar text 1**Buying a House / Ev Satın Almak**

1. Mark bir ev satın almak istiyordu
2. Bir broşür temin etti
3. Piyasada ne olduğunu görmek için
4. Yavaş yavaş şehrin mahallelerini araştırmaya başladı
5. Ferah ve hoş bir ev istiyordu
6. Ayrıca çok sayıda pencere istiyordu
7. Ne istediğine karar verdiğinde daha fazla bilgilenmek için **emlak ofisine** gitti
8. Birkaç gün sonra, Mark ve **emlakçı** şehirdeki çeşitli evleri ziyaret ettiler
9. Her bir evde Mark karşılaşılabileceği problemleri kendine hatırlattı
10. Bir hafta etrafa bakındıktan sonra, sonunda, hoşuna giden bir ev buldu
11. Sonra ev sahibiyle **satış pazarlığı yapması** gerekiyordu
12. Sonrasında, Mark ve avukatı **kontratı** imzaladı
13. Ev için depozito bırakması gerekiyordu
14. Sonra ipotek ayarlamak için bankaya gitti
15. Orada, **pesinat** olarak ne kadar ödemek istediğine karar verdi
16. **Anlaşmaya varmadan** önce, son bir kez evi inceledi
17. Her şey ona tamam görüldüğünden, gerekli **evrakların** tümünü imzaladı
18. Biranda ev sahibi oldu.

APPENDIX E.08 – Written Recall: idea units (Turkish) for less familiar text 2**Publishing an Article / Makale Yayınlamak**

1. Kathy araştırmasının sonuçlarını yayınlamak istedi
2. Bu yüzden derginin talep ettiği **yönergelere** göre makalesini hazırlamaya başladı
3. Teşekkür bölümünün tümünü **sildi**
4. Dört isimsiz nüsha hazırladı
5. Sonrasında, bir kapak yazısı yazdı
6. Bunu dört kopyaya da ekledi
7. İlgisini çeker mi diye (anlamak için) tümünü editöre gönderdi
8. Birkaç gün sonra **kabul mektubu** geldi
9. İki ay sonra Kathy **eleştirmenlerden** geribildirim aldı
10. Mutluydu
11. Çünkü bazı **düzeltilmeler** yapmak zorunda olmasına rağmen onu metni **sunmaya** davet etmişlerdi
12. Bu yüzden, editörün **şartlarına** göre özenle düzenlemelere başladı
13. Zamanında bitirdi
14. Yayımlanmasından iki ay önce düzeltmeleri aldı
15. Düzeltmeler yapması için üç günü vardı
16. Ayrıca, telif **anlaşmasını** imzalaması gerekiyordu
18. Sonrasında, her şeyi editöre geri yolladı
19. Sonunda her şeyi tamamlamıştı
20. Makalesini okumak için *Modern Diller*'in bir sonraki baskısının yayımlanmasını beklemesi gerekiyordu.

APPENDIX F – Word Recognition Memory Test

Name / Surname: _____

Track / Class: _____

Açıklamalar: Aşağıdaki kelimelerin okuduğunuz hikaye’de geçip geçmediğini EVET (YES) veya HAYIR (NO) şıklarından birisini işaretleyerek belirtiniz.

BUYING A HOUSE

1. orpher	YES	NO
2. lawyer	YES	NO
3. houses	YES	NO
4. town	YES	NO
5. allaintment	YES	NO
6. deposit	YES	NO
7. lond	YES	NO
8. finance	YES	NO
9. area	YES	NO
10. owner	YES	NO
11. garage	YES	NO
12. marent	YES	NO
13. problems	YES	NO
14. newspaper	YES	NO
15. dept	YES	NO
16. expenses	YES	NO
17. neighborhoods	YES	NO
18. garden	YES	NO
19. construction	YES	NO
20. reginant	YES	NO
21. location	YES	NO
22. convint	YES	NO
23. to segrent	YES	NO

24. to spend	YES	NO
25. to offer	YES	NO
26. to look for	YES	NO
27. to predict	YES	NO
28. to sign	YES	NO
29. to apply	YES	NO
30. to pay	YES	NO
31. to show	YES	NO
32. to choose	YES	NO

THE TRIP TO THE SUPERMARKET

1. soap	YES	NO
2. money	YES	NO
3. purse	YES	NO
4. goalways	YES	NO
5. bakery	YES	NO
6. apple	YES	NO
7. brands	YES	NO
8. items	YES	NO
9. trends	YES	NO
10. deint	YES	NO
11. fand	YES	NO
12. shopkeeper	YES	NO
13. slice	YES	NO
14. bill	YES	NO
15. journey	YES	NO
16. charp	YES	NO
17. meat	YES	NO
18. price	YES	NO
19. food	YES	NO
20. sention	YES	NO
21. assistant	YES	NO
22. receipt	YES	NO

23. to eat	YES	NO
24. to place	YES	NO
25. to enter	YES	NO
26. to conflict	YES	NO
27. to return	YES	NO
28. to stand in line	YES	NO
29. to walk around	YES	NO
30. to go out	YES	NO
31. to exceed	YES	NO
32. to move on	YES	NO

THE DOCTOR'S APPOINTMENT

1. sick	YES	NO
2. pars	YES	NO
3. season	YES	NO
4. office	YES	NO
5. flu	YES	NO
6. winter	YES	NO
7. bring	YES	NO
8. patients	YES	NO
9. nose	YES	NO
10. pills	YES	NO
11. lidel	YES	NO
12. heartbeat	YES	NO
13. fever	YES	NO
14. round	YES	NO
15. receptionist	YES	NO
16. temperature	YES	NO
17. eyes	YES	NO
18. direction	YES	NO
19. pharmacy	YES	NO
20. coat	YES	NO
21. man	YES	NO
22. dress	YES	NO

23. to understand	YES	NO
24. to examine	YES	NO
25. to sign	YES	NO
26. to obtain	YES	NO
27. to follow	YES	NO
28. to swend	YES	NO
29. to shern	YES	NO
30. to tell	YES	NO
31. to return	YES	NO
32. to move	YES	NO

PUBLISHING AN ARTICLE

1. manuscript	YES	NO
2. editor	YES	NO
3. copies	YES	NO
4. issues	YES	NO
5. mardles	YES	NO
6. tarmins	YES	NO
7. investigation	YES	NO
8. answers	YES	NO
9. information	YES	NO
10. book	YES	NO
11. feedback	YES	NO
12. deadline	YES	NO
13. hudlers	YES	NO
14. canop	YES	NO
15. choice	YES	NO
16. author	YES	NO
17. documents	YES	NO
18. indant	YES	NO
19. pattins	YES	NO
20. presentation	YES	NO
21. contract	YES	NO

22. samples	YES	NO
23. to prepare	YES	NO
24. to frain	YES	NO
25. to receive	YES	NO
26. to complete	YES	NO
27. to add	YES	NO
28. to report	YES	NO
29. to dinert	YES	NO
30. to inform	YES	NO
31. to analyze	YES	NO
32. to mark	YES	NO

APPENDIX G – Translation Production Test

Name / Surname: _____

Track / Class: _____

Açıklamalar: Aşağıdaki kelimelerin Türkçe karşılıklarını boşluklara yazınız.

1. orpher _____

2. allaintment _____

3. lond _____

4. marent _____

5. reginant _____

6. convint _____

7. to segrent _____

8. to pardict _____

9. goalways _____

10. trens _____

11. deint _____

12. fand _____

13. charp _____

14. sention _____

15. to conflect _____

16. to excent _____

17. pars _____

18. brind _____

19. lidel _____

20. rund _____

21. dintion _____
22. manch _____
23. to swend _____
24. to shern _____
25. mardles _____
26. tarmins _____
27. hudlers _____
28. canop _____
29. indant _____
30. pattins _____
31. to frain _____
32. to dinert _____

APPENDIX H – Translation Recognition Test

Name / Surname: _____

Track / Class: _____

Açıklamalar: Aşağıdaki cümlelerde altı çizili kelimelerin Türkçe karşılığını işaretleyin

1. I called my **orpher** who told me that the house is saleable at the price that he is advertising.

- a. ev sahibi b. arsa sahibi c. emlakçı
d. aracı e. cevabı bilmiyorum

2. He signed an **allaintment** to buy the property.

- a. havale b. önerme c. uzlaşma
d. kontrat e. cevabı bilmiyorum

3. Efforts were made to limit the **lond** of alcohol.

- a. satış b. ciro c. fatura
d. sayı e. cevabı bilmiyorum

4. If you want to buy that house, you have to contact the **marent** immediately and let the marent know that you are interested in the house.

- a. kiracı b. emlak ofisi c. mimarlık bürosu
d. bilirkişi e. cevabı bilmiyorum

5. The lawyer wanted us to complete the **reginant** for the mortgage.

- a. rapor b. anket c. evrak
d. fatura e. cevabı bilmiyorum

6. In the US, **convint** for home purchases typically varies between %3.5 and %20 of the price.

- a. peşinat b. ücret c. kira
d. ödeme e. cevabı bilmiyorum

7. Before **segrenting** , make sure that you know enough about the payment details.

Otherwise, it will be too late to make any changes on an official paper.

- a. rapor hazırlamak b. taksit ödemek c. tapu almak
d. anlaşmaya varmak e. cevabı bilmiyorum

8. The customer wanted to **pardict** over the price of an Mp3 player that he liked because it was too expensive.

- a. münakaşa etmek b. pazarlık yapmak c. uzlaşmaya varmak
d. taksitlendirmek e. cevabı bilmiyorum

9. You'll find the shampoo and the soap in the fourth and fifth **goalways** along from the entrance.

- a. koridorlar b. tezgahlar c. kasalar
d. yollar e. cevabı bilmiyorum

10. She needed six **trens** to carry the food she bought.

- a. sepetler b. tabaklar c. torbalar
d. kutular e. cevabı bilmiyorum

11. In summer, meat easily goes bad; you should keep it in the **deint**.

- a. kap b. tencere c. buzdolabı
d. kiler e. cevabı bilmiyorum

12. As she approached, she saw that her favorite writer's book was on the **fand**, near the other books.

- a. raf b. kutu c. karton
d. sandalye e. cevabı bilmiyorum

13. There was nobody behind the **charp**, so I waited for five minutes just to get a piece of meat.

- a. oda b. kapı c. buzluk
d. tezgah e. cevabı bilmiyorum

22. I took the doctor's **manch** and went home, so that I could rest.

- a. danışmanlık b. anlaşma c. uzlaşma
d. tavsiye e. cevabı bilmiyorum

23. Dr. Smith **swended** the patient. He wanted to learn about his problem.

- a. göz gezdirmek b. muayene etmek c. soruşturmak
d. ameliyat etmek e. cevabı bilmiyorum

24. Could you please **shern** through this letter of application and tell me if it is alright?

- a. açıklamak b. cevap vermek c. göz gezdirmek
d. planlamak e. cevabı bilmiyorum

25. Writers generally follow certain **mardles** in order to have their work accepted.

- a. yöntemler b. eleştiriler c. anlaşmalar
d. yönergeler e. cevabı bilmiyorum

26. He was forced to make several **tarmins** to his speech.

- a. sunumlar b. denemeler c. düzeltmeler
d. eskizler e. cevabı bilmiyorum

27. **Hudlers** responded sharply to the new movie.

- a. eleştirmenler b. editörler c. yazarlar
d. yayıncılar e. cevabı bilmiyorum

28. They have broken the terms of the **canop** on human rights.

- a. görüşme b. anlaşma c. istek
d. bildiri e. cevabı bilmiyorum

29. I finally received the **indant** yesterday. Next year, I'm going to attend one of the best universities in England.

- a. şartname b. kabul mektubu c. ön yazı metni
d. başvuru formu e. cevabı bilmiyorum

30. If I lend you my car, one of my **pattns** is that you fill up the gas tank before returning it.

- a. istekler b. şartlar c. talimatlar
d. öneriler e. cevabı bilmiyorum

31. He **frained** all the files from the computer system.

- a. kopyalamak b. arşivlemek c. kaydetmek
d. silmek e. cevabı bilmiyorum

32. Companies are required to **dinert** monthly financial statements to the board.

- a. sunmak b. düzenlemek c. almak
d. uzlaşmak e. cevabı bilmiyorum

APPENDIX I – Figures for Intake

Figure 1.1 Standardized Residuals Histogram for Intake

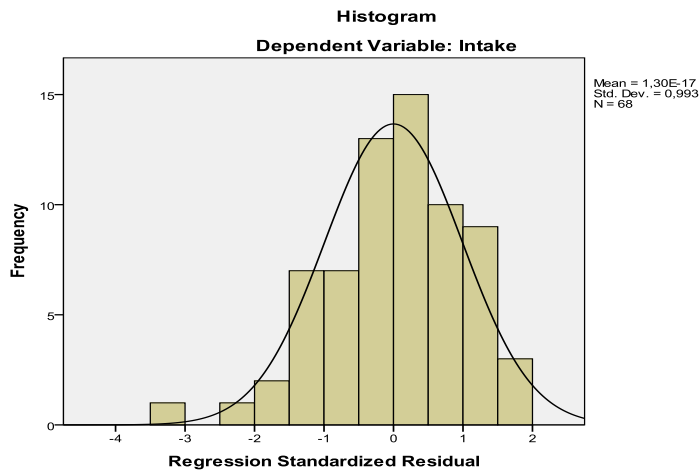


Figure 1.2 Plot of Standardized Residuals for Intake

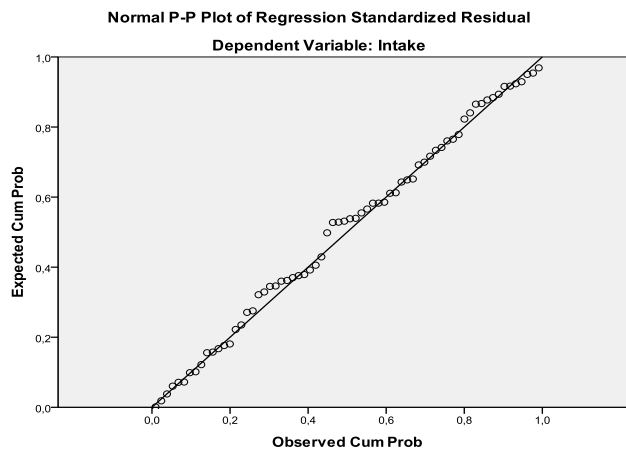
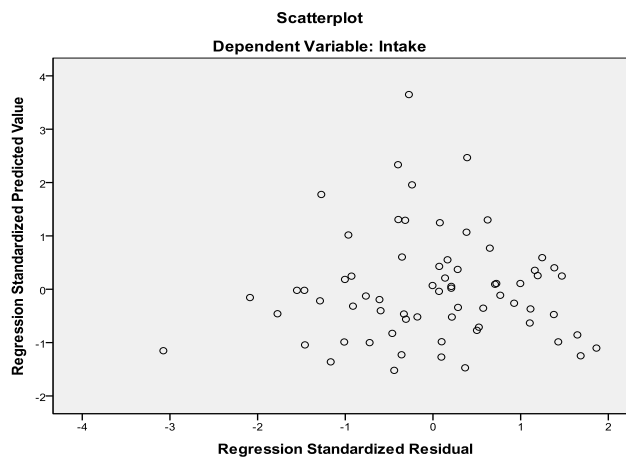


Figure 1.3 Scatter plot of 'Standardized Predicted' against 'Standardized Residual' for Intake



APPENDIX J – Figures for Gain

Figure 2.1 Standardized Residuals Histogram for Gain

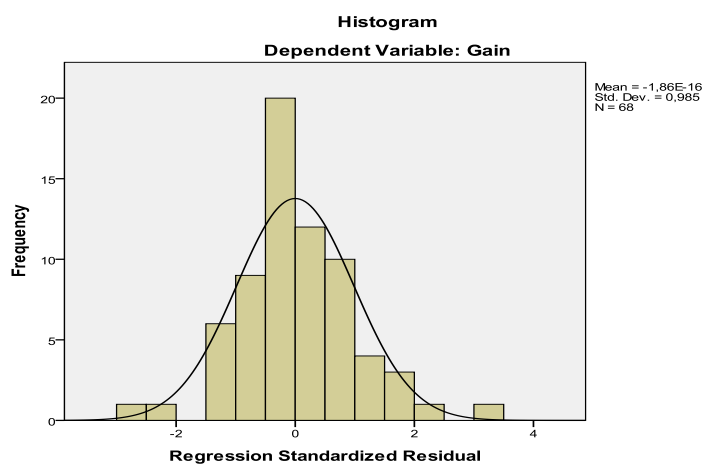


Figure 2.2 Plot of Standardized Residuals for Gain

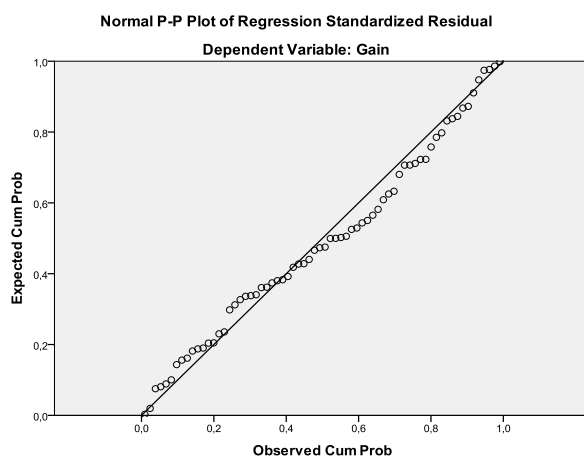
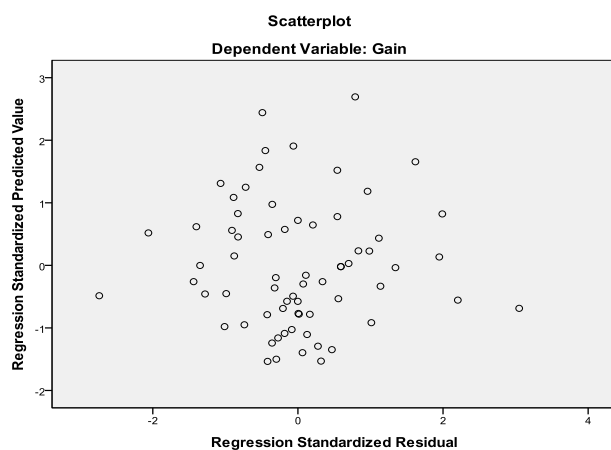


Figure 2.3 Scatter plot of 'Standardized Predicted' against 'Standardized Residual' for Gain



APPENDIX K – Figures for Retention

Figure 3.1 Standardized Residuals Histogram for Retention

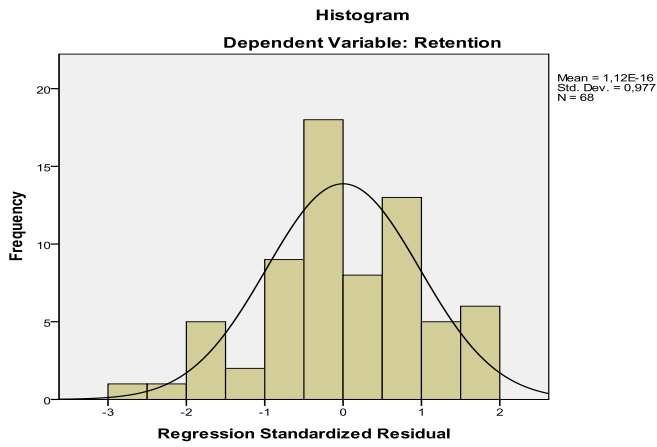


Figure 3.2 Plot of Standardized Residuals for Retention

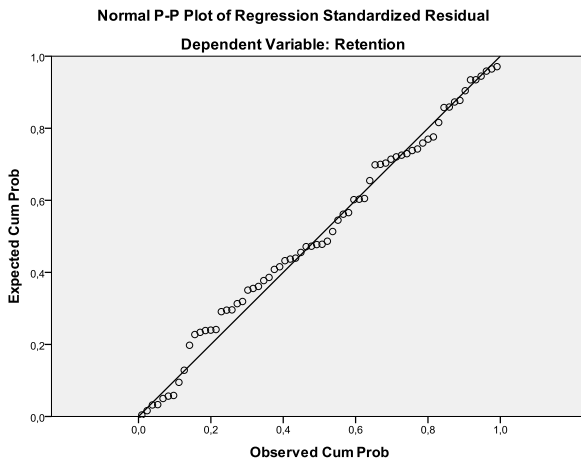
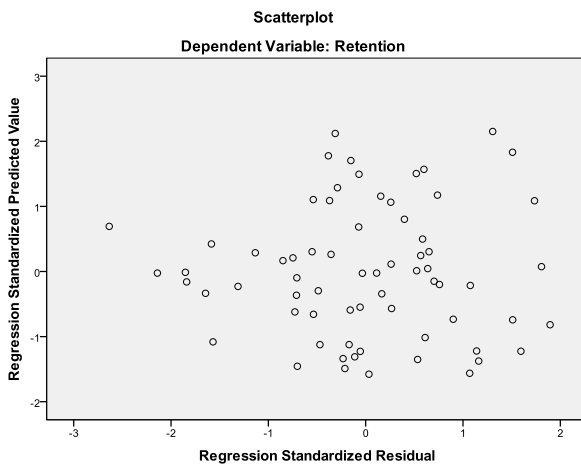


Figure 3.3 Scatter plot of ‘Standardized Predicted’ against ‘Standardized Residual’ for Retention



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