ÇUKUROVA UNIVERSITY
THE INSTITUTE OF SOCIAL SCIENCES
ENGLISH LANGUAGE TEACHING DEPARTMENT

THE NOTICING OF FORMULAIC SEQUENCES BY TURKISH LEARNERS OF ENGLISH

Ela GÜRSOY

MASTER OF ARTS

ADANA-2008

ÇUKUROVA UNIVERSITY
THE INSTITUTE OF SOCIAL SCIENCES
ENGLISH LANGUAGE TEACHING DEPARTMENT

THE NOTICING OF FORMULAIC SEQUENCES BY TURKISH LEARNERS OF ENGLISH

Ela GÜRSOY

Supervisor: Assist. Prof. Dr. Abdurrahman KİLİMCİ

MASTER OF ARTS

ADANA-2008

To Çukurova University Institute of Social Sciences

We certify that this thesis is satisfactory for the award of the degree of M.A.

Supervisor: Assist. Prof. Dr. Abdurrahman KİLİMCİ

Member of Examining Committee: Assist. Prof. Dr. Cem CAN

Member of Examining Committee: Assist. Prof. Dr. Ergün SERİNDAĞ

I certify that this thesis conforms to the formal standards of the Institute of Social Sciences.
…/……/……

Prof. Dr. Nihat KÜÇÜKSAVAŞ
Director of Institute

P.S: The uncited usage of the reports, charts, figures, and photographs in this thesis, whether original or quoted for mother sources, is subject to the Law of Works of Arts and Thought No: 5846

NOT: Bu tezde kullanılan özgün ve başka kaynaktan yapılan bildirişlerin, çizelge, şekil ve fotoğrafların kaynak gösterimeden kullanımı, 5846 sayılı Fikir ve Sanat Eserleri Kanunu'ndaki hükümlere tabidir.

ÖZET

İNGİLİZCE ÖĞRENEN TÜRK ÖĞRENCİLERİNDE KALIP İFADELERİN FARKINDALIĞI

Ela GÜRSOY

Yüksek Lisans Tezi, İngiliz Dili Eğitimi Anabilim Dalı
Danışman: Yrd. Doç. Dr. Abdurrahman KİLİMCİ
Haziran, 2008, 85 sayfa

Bu araştırma Çukurova Üniversitesi, Eğitim Fakültesi İngiliz Dili Eğitimi Anabilim Dalı orta düzey İngilizce bilgisine sahip ikinci sınıf öğrencilerin sözcük bilgisini değerlendirmek ve kalıp ifadelerin farkındalığını belirlemek amacı ile yapılmıştır. Bu çalışma Bishop (2004) tarafından yapılan Doktora Tezinin kısmi bir replikasıdır. Standart test kullanılarak toplam 46 denek seçilmiştir. Deneklere, ön test olarak, sözcük bilgilerini ölçmek amacıyla yirmi hedef sözcük ve yirmi kalıp ifadeler içeren, Sözcük Bilgi Skalası uygulanmıştır. Denekler rastgele uygulama ve kontrol gruplarına ayrılmışlardır. Çalışma, özel dizayn edilmiş çevrimiçi çalışan bir bilgisayar yardımıyla yapılmıştır. Uygulama grubuna (Test 2) on adet belirgin (altı çizilmiş ve koyu yazılmış) kalıp ifadele ve on adet diğer sözcüklerle aynı bırakılmış sözcük içeren bir metin verilmiştir. Kontrol grubuna (Test 1) hiçbiri belirginleştirilmemiş on aynı sözcük ve on aynı kalıp ifadenin bulunduğu diğer gruba verilen metnin aynısı verilmiştir. Denekler, her iki grupta da, hedef sözcüklerin ve kalıp ifadelerin üzerine tıklayarak sözlük yardımı alabildiler. Aynı zamanda, bilgisayar programı kavramayı değerlendiren 20 Doğru/Yanlış Sorusu içeren bir son testi de kapsamaktadır. Bilgisayar programı, deneklerin her birinin uygulama ve son test verilerini anında kaydetmiştir. Sözcük Bilgi Skalası sonuçları katılımcı öğrencilerin çok kalıp ifadelere kıyasla istatistiki olarak önemli düzeyde daha fazla hedef sözcük bildiklerini göstermiştir. Denekler, çok kalıp ifadeler ve sözcükler için aynı oranda sözlük yardımı almışlardır. Denekler, belirgin kalıp ifadeler için belirginleştirilmemiş kalıp ifadelerden daha fazla sözlük yardımı almışlardır ancak ortalamalar arasında istatistiki olarak önemli fark bulunamamıştır. Son testin sonuçları, her iki grubun doğru yanıt ortalamalarının benzer olduğunu ve belirginleştirmenin kavrama üzerinde istatistiki olarak önemi olmadığını göstermiştir.

Anahtar Sözcükler: farkındalık, kalıp ifadeler, farkındalık hipotezi, sözcük edinimi

ABSTRACT

THE NOTICING OF FORMULAIC SEQUENCES BY TURKISH LEARNERS OF ENGLISH

Ela GÜRSOY

Master of Arts, English Language Teaching Department
Supervisor: Assist. Prof. Dr. Abdurrahman KİLİMCİ
June, 2008, 85 pages

This study was carried out with the objectives of assessing the vocabulary knowledge and the noticing of formulaic sequences by upper intermediate ELT majoring sophomore (fourth semester-second year) students of the Faculty of Education in the University of Çukurova. The study was carried out as a partial replicate of the Ph. D. Dissertation of Bishop (2004). A total of 46 participants were selected with a standard test. All the students were subjected to Vocabulary Knowledge Scale as the pre-test to assess their knowledge of target lexical items. The participants were randomly divided into two groups (treatment and control). The study was carried out using a specially designed online computer program. The treatment group (Test 2) was given a text containing 10 salient (underlined and bold) formulaic sequences and 10 non-salient single words. The control group (Test 1) was given the same text with the same single target words and formulaic sequences in non-salient form. Glossary help was sought by clicking on the target single words and target formulaic sequences. The program also incorporated the post-test with 20 T/F questions for assessing comprehension. The program instantly stored participants' individual data. The VKS results indicated that the participants knew more target single words than target formulaic sequences. The target formulaic sequences and the single words were sought for the same intensity of glossary help. The salient formulaic sequences received more request for glossary help than the non-salient formulaic sequences but the difference was not statistically significant. The results of post test indicated that the mean number of correct answers were very similar in both groups implying that salience did not significantly increased comprehension.

Key Words: noticing, formulaic sequences, noticing hypothesis, vocabulary acquisition

ACKNOWLEDGEMENTS

I am most grateful to my advisor, Assist. Prof. Dr. Abdurrahman KİLİMCİ, for his invaluable guidance, advice and continuous support throughout my study.

I would also like to express my gratitude and special thanks to Assoc. Prof. Dr. Hatice SOFU, for her everlasting support, motivation and suggestions since the beginning of my study.

I also would like to thank Assist. Prof. Dr. Cem CAN and Assist. Prof. Dr. Ergün SERİNDAĞ for their support, encouragement and contributions as the members of my examining committee.

My special thanks and gratitute are due to Prof. Dr. Nazan ALPARSLAN, Asist. Prof. Dr. Ahmet DOĞANAY and Res. Assist. Nazif ÇALIŞ for their advice and contributions regarding the statistical analyses.

Special thanks are due to Comp. Eng. Mehmet BAYKAM who spared a great deal of his time and efforts for designing the Online Customized Computer Program which served as the backbone of the research.

Finally, my deepest appreciation and thanks go to my father, Prof. Dr. Oktay GÜRSOY, my mother, Sevdiye GÜRSOY, and my sister, Eda GÜRSOY for their patience, love, sharing and understanding during the preparation of my thesis.

Ela GÜRSOY

Adana, 2008

TABLE OF CONTENTS

ÖZET i
ABSTACT ii
ACKNOWLEDGEMENTS iii
LIST OF TABLES vi
LIST OF FIGURES vii
LIST OF APPENDICES viii

CHAPTER I

INTRODUCTION

1.1. Background of the Study 1
1.2. Statement of the Problem 1
1.3. The Aim of the Study 2
1.4. The Research Questions 2
1.5. Definitions 3
1.6. Assumptions and Limitations 3

CHAPTER II

LITERATURE REVIEW

2.1. Introduction 4
2.2. Lexical Units 4
2.2.1.Ortographic Definition of Lexical Uunit 4
2.2.2. Semantic Definition of Lexical Unit 5
2.2.3. Morphological Definition of Lexical Unit 5
2.2.4. Significance of Knowing a Lexical Unit 7
2.2.5. How are Lexical Units Learned? 8
2.3. Definition and Characteristics of Formulaic Sequence 9
2.4. Acquisition of Formulaic Sequences 10
2.5. Vocabulary Build-up 12
2.6. Noticing 14
2.6.1. Levelt's Model of Lexical Processing 15
2.6.2. de Bot et al's Processing Model for L2 Vocabulary 20
2.6.3.Schmidt's Noticing Hypothesis 21

2.6.4. Research on Noticing 21
2.6.5. Limitations of Schmidt's Noticing Hypothesis 23
2.6.6. Typographical Salience Effect on Noticing 23

CHAPTER II

METHODOLOGY

3.1. Introduction 25
3.2. Research Design 25
3.3. Participants 26
3.4. Instruments 26
3.5. Statistical Analysis 28

CHAPTER IV

RESULTS AND DISCUSSION

4.1. Intoduction 29
4.2. Formulaic Sequences versus Single Words in VKS 29
4.3. Glossary Help for Single Words and Formulaic Sequences 34
4.4. Relationship between Salient Formulaic Sequences and Glossary Help 37
4.5. Relationship between Salient Formulaic Sequences and Reading Comprehension 39

CHAPTER V

CONCLUSION

5.1. Introduction 42
5.2. Conclusions 42
5.3. Implications of the Study 44
5.4. Limitations of the Study 45
5.5. Suggestions for Further Research 46

REFERENCES 48
APPENDICES 60
CURRICULUM VITAE 85

LIST OF TABLES

Table 4.1. Means and Standard Deviations of VKS Test Scores.....29

Table 4.2. Independent Samples t-Test for Means of Knowledge of Target Single Words and Formulaic Sequences 30

Table 4.3. Overall Findings in Pre-test (VKS) Results-Participants' Target Single Word and Formulaic Sequence Scores.....31

Table 4.4. The Most Known Target Single Words and Formulaic Sequences (VKS) 32

Table 4.5. The Least Known Target Single Words and Formulaic Sequences.....33

Table 4.6. Glossary Help Requests and Their Frequencies 35

Table 4.7. Descriptive Statistics of Clicking Number for Glossary Help.....36

Table 4.8. Descriptive Statistics of Clicking Frequency for Glossary Help 36

Table 4.9. Paired Samples t-Test for Clicking Frequencies for Glossary Help 37

Table 4.10. The Group Statistics for Salient and Non-Salient Formulaic Sequences 37

Table 4.11. Independent Samples t-Test on the Effect of Salience.....38

Table 4.12. The Group Statistics for Comprehension-Post Test.....40

Table 4.13. Independent samples t-Test – Correct Answers (Comprehension).....40

LIST OF FIGURES

Figure 2.1. Formulaic Sequences with both Lexical and Syntactic Properties 6
Figure 2.2. Form Noticing.....14
Figure 2.3. Internal Structure of an Item in Mental Lexicon 15
Figure 2.4. Levelt's Lexical Processing Theory.....16
Figure 2.5. Levelt's L1 Model of Lexical Processing 18
Figure 2.6. de Bot et al's Modification of Levelt's Lexical Processing 19
Figure 3.1. Sample Question from VKS Pre-Test.....26
Figure 3.2. Participant's Access to Online Program 27

LIST OF APPENDICES

APPENDIX I. Pre-Test (VKS).....60
APPENDIX II Non-Salient Version of the Text on 'Global Warming'.....80
APPENDIX III. Salient Version of the Text on 'Global Warming' 81
APPENDIX IV. A Print Screen of Participant's Data Strored 82
APPENDIX V. Post – Test 83
APPENDIX VI. A Sample of Post Test Evaluation Sheet 84

CHAPTER I

INTRODUCTION

1.1. Background of the Study

Vocabulary knowledge is a good indicator of proficiency in second language acquisition and is specifically emphasized in all second language teaching methods to a great extent. Formulaic sequences make up very important body of written and spoken English (Schmitt and Carter, 2004). Similarly Erman and Warren (2000) estimated that almost 60 % of the spoken and 52 % of the written English were formulaic sequences. In the same vein, Bishop (2004) points to the difficulty of formulaic sequences in learning compared to single words due to the meaning of the multi-word expressions other than the words that constitute that formulaic sequences.

Skehan (1998) postulates that in second language acquisition awareness is extremely important for conscious learning. Noticing, therefore, is the key to accessing unknown lexical items. Salience of lexical items enhances noticing and improves comprehension while reading due to the increased efforts of acquiring the meaning of the unknown lexical item (Schmidt, 1990; de Bot et al, 1997; Bishop, 2004). Lexical items are learned incidentally and intentionally. L1 speakers learn lexical items incidentally more than intentionally due to intensive exposure to written and spoken discourse (Nagy and Anderson, 1984). L2 learners are less exposed to the target language and have limited vocabulary knowledge which decreases the effectiveness of incidental learning of new lexical items (Huckin and Coady, 1999). Schmidt's (1990) noticing hypothesis deals with the complex processing procedure prior to the identification and comprehension of a lexical unit be it a single word or a formulaic sequence. A second language learner has to notice or recognize the formulaic sequence as unknown before comprehension.

1.2. Statement of the Problem

Formulaic sequences incorporating idioms, proverbs, and sayings, constitute a very significant portion of communication in English language (Schmitt and Carter, 2004). Wray (2000) categorizes the functions of formulaic sequences as processing shortcuts, time-buyers, manipulation of information, manipulation of others, asserting separate

identity and asserting group identity. Furthermore she claims that formulaic sequences have the effect of increased production and fluency such as *best foot forward, the current economic climate*. However, in second language acquisition, students are facing great difficulty in learning formulaic sequences as compared to single word lexical items and it is a growing challenge for linguists to enhance learning formulaic sequences. Therefore recent studies emphasize tools of improved word acquisition by enhancing noticing of unknown lexical items such as typographic salience.

The L2 learners also exhibit some common characteristics in use of formulaic sequences. Some use safe formulaic sequences for feeling confident (Granger, 1998), some overuse, underuse or misuse formulaic sequences compared to L1 speakers (De Cook, 2000).

Since formulaic sequences constitute a very significant portion of communication in English language (Wray, 2000) and L2 learners are less exposed to English, they notice formulaic sequences less and fail to learn them as efficiently as single words (Adolphs and Durov, 2004). The Turkish students will be tested for the validity of this problem.

1.3. The Aim of the Study

This study aims to find out how Turkish upper intermediate undergraduate students notice target formulaic sequences and how salience improves noticing and accessing the meanings of the target lexical items. Furthermore, the study also explores the effect of typographic salience on reading comprehension of the text with unknown target formulaic sequences.

1.4. The Research Questions

This study aims to answer these following research questions:

1) Will upper intermediate Turkish L2 learners of English know fewer formulaic sequences than single words in Vocabulary Knowledge Scale (VKS)?

2) Will the participants request more glossary help for target single words than target formulaic sequences?

3) Will making formulaic sequences salient increase request for glossary help?

4) Will the participants understand the reading passage better and do more correct comprehension questions when formulaic sequences are made salient in the text?

1.5. Definitions

Formulaic sequence: a sequence, continuous or discontinuous, of words or other elements, which is, or appears to be, prefabricated: that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar (Wray, 2002).

Noticing: a cognitive process that involves attending to linguistic form in the input learners receive and the output they produce (Ellis, 2003).

1.6. Assumptions and Limitations

This study is limited to Turkish undergraduate university students whose English level is upper intermediate, therefore, the results of the study can not be generalized to all levels of English due to the fact that noticing unknown lexical items is closely related to the level of proficiency in L2, and also the vocabulary knowledge.

CHAPTER II

LITERATURE REVIEW

2.1. Introduction

This chapter is intended for reviewing previous research and accummulated literature on all aspects of formulaic sequences including their definitions, significance in English language, their lexical processing, and comprehension along with overall evaluation of noticing hypothesis in relation to comprehension and vocabulary acquisition.

2.2. Lexical Units

In order to deal with lexicon units and their relation with syntax, phonology and morphology, it will be appropriate to start with the definition of lexicon. Hatch and Brown (1995) define lexicon as the overall system of word forms and add that the constituents of lexicon have to be stored, restored as wholes, consist of syntactic, semantic, morphological, phonological and orthographic information.

Thus, as noted by Schmitt and Carter (2004) lexical patterning influences almost all language use due to its gradually increasing importance in applied linguistics.

2.2.1.Ortographic Definition of Lexical Unit

Carter (1987) refers to lexical unit as ' *practical common sense definition*' (p. 4) and points out that each orthographic word can be viewed as a syntactic atom. Furthermore, all derivatives of a given word are judged as lexical entries disregarding any morphological structure. Immediately it raises the issue whether different words derived from *go, went, going* and *gone* are seperate words or not. Another problematic aspect is in question when equivalent variants have more than one orthographic constituent. For instance '*instead of*' has two words and '*in place of*' has three words. Carter also claims that in writing, orthographic differences are more clearly percieved as compared to speaking. This may originate from the fact that phonetic pauses break orthographic words in various ways which results in the reduced cognition.

2.2.2. Semantic Definition of Lexical Unit

Carter (1988) defines word as '*minimum meaningful unit of language* (p. 5). In contradiction with the above definition, single units of meaning can be expressed with more than one word as in the case of '*collect*' and '*call in*'; '*extinguish*' and '*put out*'. In a phrasal verb like '*put out*' the word '*put*' does not preserve its semantic content and is considered a delexical verb. The reverse is valid for a group of words representing a phrasal verb like '*call into being*' meaning '*create*'.

2.2.3. Morphological Definition of Lexical Unit

This concept considers words to be molecules possessing simpler units instead of atoms. These simpler units are regarded as 'morphemes' and are defined as '*a grouping of one or more phonemes having no smaller meaningful parts*'. For instance the word boys has two morpemes namely *boy* and *–s*.

Among the related words, this definition may cause a problem to identify the base word and its representation in the lexicon. Bauer & Nation (1993) suggest that knowledge of the base word is extremely important because it signifies the knowledge of all the derivatives of the word family. Bogaards (2001), and Schmitt & Zimmerman (2002), however, disagree with extreme emphasis on base words and present contradictory data. The main objection stems from the improper or insufficient definition of the base word, word family and base form.

In the case of L1 speakers, their acquiantance with the base form and its derivatives are automatic and episodic because they are exposed to these words in numerous occasions (Levelt, 1989). For instance, in a study conducted by Kirsner (1994), an adult L1 speaker is exposed to 25.000 words daily and the total vocabulary form every forty days. Kirsner agrees with the view of Bauer & Nation (1993) that once one form of a morpheme is accessed, it leads to all forms of the base word. As an example, Levelt (1989) puts forth that all the lexical items (go, going, goes, gone and went) of the base word 'go' is represented in one entry.

In the case of L2 learners, the picture is different due to the lack of intensive exposure to L2. They will have to study hard to learn all the morphological structures due to irregularities of these structures of the base word (Schmitt and Carter, 2004). Jiang

(2000) demonstrates the irregularity of the base word 'leave' and states that the past tense form of the base word 'left' causes L2 learners to overuse the base form and causes morphological error. According to Mukkatesh (1986) as cited by Jiang (2000), L2 students learn a base form and the other morphological structures are mostly prone to error due to their relatively weak learning. Proficiency may improve better knowledge of derivations of base words. However, Schmitt & Zimmerman (2002) argue that knowledge of morphology does not necessarily lead to access other forms of a base word.

Figure 2.1. implies that identical word strings can have different lexical and grammatical representations (Pawley and Syder, 1983; Wray, 2002). It shows that the overlapping area can incorporate syntactic and lexical domains of units belonging to both. In their studies, the possibility of double entries for these overlapping items in the lexicon and the syntactic module are suggested. In Skehan's (1998) study, it is asserted that language performance is founded on a dual representation system requiring double entry of lexical and grammatically generated patterns. This concept is backed by Abel's (2003) study on idioms, which provides further evidence of dual representation.

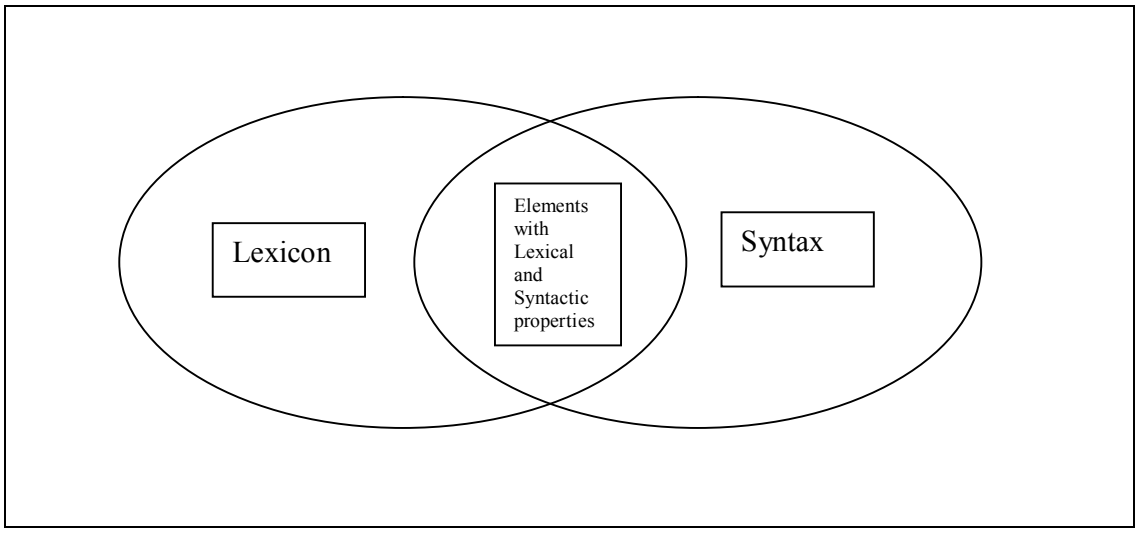

Figure 2.1. Formulaic Sequences with both Lexical and Syntactic Properties (Pawley & Syder , 1983)

Ellis (1994) asserts that these strings include sequences which are first learned and successfully used as unanalyzed chunks by L2 learners. Wray (2002) claims that after these chunks are learned, they are possibly analyzed and afterwards used correctly. Following

this stage, the sequences can be accessed as lexical wholes or generated by the grammar. L1 speakers regard word strings as lexical and analyze them grammatically if there is a need to do so. They perceive formulaic sequences as wholes after using them for a long time. Conversely, the synthesis of formulaic sequences in L2 is extremely time consuming and difficult. The initial words for L2 speakers are selected from a great number of possible grammatical combinations having properties of being subsets of lexical wholes. Furthermore, the L1 speakers are exposed greater quantities of lexical wholes while L2 learners lack the chance of comparative determination of word combinations being either lexical or grammatical. This confuses L2 learners about the recognition of formulaic sequences being either lexical wholes or grammatical wholes. Another problem of L2 learners is the confusion over their ability to recognize the multi-word forms of unknown formulaic sequences as conceptually unified lexical entries (Wray, 2002).

2.2.4.Significance of Knowing a Lexical Unit

Knowledge of a lexical item consists of pronounciation, spelling, morphological properties, word class, argument structure, semantic properties, connotative meaning, polysemy, antonymy, other paradigmatic relations, discourse features and the frequency of the item (Bishop, 2004). According to Nation and Waring (1997) lexical knowledge requires both breadth and depth of vocabulary knowledge. Simply breadth signifies the number of lexical items and the depth shows the degree of how individual lexical items are known. Furthermore, it is important to emphasize that depth of knowledge incorporates issues of considerable complexities and significance. Henriksen and Haastrup (1998), in line with Richards (1976) make some of these complexities explicit.

Similarly, Wesche and Paribakht (2000) point out that learning vocabulary is both elaborative and iterative. Some other researchers state that knowledge of spelling a word does not necessarily lead to knowledge of its meaning or knowledge of one sense of a word does not assure that an unrelated sense will be known . Similarly knowledge of one sense of a word does not assure that the other sense is also known (Bogaards, 2001; Schmitt and Zimmerman, 2002).

With regard to incidental learning in second language, Huckin and Coady (1999) assert that the extent of knowledge on any issue or factor is a spectrum of knowledge extending from partial to precise recognition to the ability of using that knowledge

accurately. In other words, it can be basically regarded as active and passive knowledge in the sense that active knowledge is actually the capacity of precise using of knowledge. They also claim that learning a lexical unit is incremental and requires intensive exposure in various context. Henriksen and Haastrup (1998) emphasize that knowledge of the nature and properties of a learner's lexicon as a whole is essential in addition to breadth and depth of lexical knowledge.

2.2.5. How are Lexical Units Learned?

Lexical units are learned incidentally or intentionally. Most of the lexical development in both L1 and L2 is accomplished as learners try to understand the new words they are exposed to in spoken or written discourse (Wesche and Paribakht, 1999). However, Ellis (1994) claims that most of new vocabulary acquisition takes place while attention is focused on the context rather than learning new words. This is incidental learning. Hatch and Brown (1995) argue similarly that learning new words is a byproduct of doing or learning something else. Although intentional vocabulary learning is important for L1 vocabulary acquisition (Graves, 1987), the intentionally learned lexical items form a fairly little portion of the total vocabulary learned. For this reason, incidental learning is extremely important for L1 vocabulary acquisition (Nagy and Anderson, 1984; Nagy and Herman, 1987).

Many researchers underline intentional learning in second language vocabulary development (Chun & Plass, 1996; Nation, 1990; Paribakht and Wesche, 1996; Zimmerman, 1997). However, with the exception of the first two-three thousand words, incidental vocabulary build up is the main method through extensive reading which indicates unplanned learning of lexical items while engaged in some other activities (Huckin and Coady, 1999). The main strategy in incidental learning is inferencing while performing extensive reading (Fraser, 1999; Wesche and Paribakht, 1999).

Coady and Huckin (1997) illustrate that incidental learning through reading has three fold advantages: vocabulary build up in a context showing the properties of words; is sound pedagogically for the reason that it provides both reading and vocabulary build up simultaneously; more individualized and learner based due to the fact that reading material is selected by the learner. Similarly, McCarthy and Carter (1997) indicate the fact that reading allows differential build up of moderate to low frequency words that are more

common in written material than in spoken language. One great disadvantage of vocabulary build up through reading is that it does not work with beginners and requires instructional vocabulary program intending to teach the 3000 most frequently recognizable words (Huckin and Coady, 1999).

Conklin and Schmitt (2007) concluded that formulaic sequences are more quickly read and processed than non-formulaic phrases by both L1 and L2 speakers.

2.3. Definition and Characteristics of Formulaic Sequence

Formulaic sequences are single units in spite of the fact that they are multiple orthographic words. In the case of idioms, their meanings can not be derived from the meaning of the words that constitute them (Schmitt and Carter, 2004). Ellis and Sinclair (1996) define formulaic sequences as a 'big word' glued together and stored as a single 'big word' (p. 111). Wray's (2002) definition of formulaic sequence is "... a sequence, continuous or discontinuous, of words or other meaning elements, which is, or appears to be fabricated: that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammer" (p 9). Lewis (1993) embraces the formulaic sequence by downgrading the significance of single word as a unit, prefering the broader term 'lexical item, which encompasses formulaic word strings too'(p. 100).

Schmitt and Carter (2004) point out the diversity of formulaic sequences by giving examples of a long one as '*You can lead a horse to water, but you can't make him drink*', or a short one as '*Oh no!*'. They also demonstrate that some formulaic sequences can be utilized for conveying a message or an idea: '*The early bird gets the worm*' meaning 'Do not defer, delay or put off'. As the formulaic sequences are used for various needs of language users, various terminologies have been developed to describe them. Some of these are given by Wray (2002)**;** among them chunks, collocations, conventionalized forms, formulaic speech, formulas, holophrases, multiword units, prefabricated routines, ready-made utterances may be listed.

Kupier (1996) points to two properties of formulaic sequences; more specifically that they are not merely strings of word, but phrases and that they are lexical items like

words. Following are the properties of formulaic sequences as characterized by Schmitt and Carter (2004):

> *'Formulaic sequences appear to be stored in the mind as holistic units, but they may not be acquired in an all-or nothing manner' (p. 4).*
>
> *'Formulaic sequences can have slots to enable flexibility of use, but the slots typically have semantic constraints' (p. 6).*
>
> *'Formulaic sequences can have semantic prosody' (p. 7).*
>
> *'Formulaic sequences are often tied to particular conditions of use' (p. 9).*

Conklin and Schmitt (2007) state that formulaic sequences are more important than being strings of words attached together with collocational ties. In fact, a great portion of communication incorporates these phrasal expressions carrying single meaning/pragmatic function providing appreciable semantic/pragmatic utility to language use. In the same way, as to the nature of multi-word units, Danielsson (2007) in her online article, asserts that "… there is no, or only very limited, possible substitution of the words within the unit, there is little relevance in splitting them up into single words for further lexical or grammatical analysis."

2.4. Acquisition of Formulaic Sequences

Recently formulaic sequences constitute increasingly greater share of research on vocabulary. Corpus based research provided data on the identification of formulaic sequence and their use in written and spoken English. In comparison, the magnitute of study of the acquisition of formulaic sequences however remained to be modest (Schmitt and Carter, 2004). It is an important issue how formulaic sequences are learned by L1 and L2 speakers. There are significant studies conducted on this aspect of formulaic sequences. This review will concentrate more on the acquisition of L2 learners.

Formulaic sequences along with grammer-based acquisition have a very significant role in language acquisition as concisely presented by Wood (2002):

> *'They are acquired and retained in and of themselves, linked to pragmatic competence and expanded as this aspect of communicative ability and awareness develops. At the same time, they aresegmented and analyzed, broken down, and combined as cognitive skills of analysis and synthesis grow. But the original formulas and the pieces and rules that come from analysis are retained'* (p. 5).

There are significant differences in the acquisition of formulaic sequences in L1 and L2 speakers. In the case of L1 speakers, there are four distinct phases of acquisition from childhood to adulthood, starting to learn single words and some simple sequences by imitation in the first phase to fully balanced holistic and analytical language development same as adults (Wray and Perkins, 2000; Wray, 2002; Schmitt and Carter, 2004). In the case of L2 learners, there are no distinct phases but there seems to be a prerequisite that a certain level of proficiency must be acquired prior to the accurate acquisition of formulaic sequences. The avoidance of formulaic language in the beginning may be due to the lack of intensive input. Formulaic sequence acquisition in L2 learners exhibit great variation due to age, manner of acquisition, native language, social environment and some other factors (Wray, 2002; Schmitt and Carter, 2004).

Conklin and Schmitt (2007), in their research on the processing speed of formulaic sequences and non-formulaic sequences claim that the argument of the importance of formulaic sequences to language use and widespread existence leads to the conclusion that knowledge and mastery of these lexical items is obligatory for proficient speakers. They concluded that formulaic sequences are more quickly read and processed than non-formulaic phrases by both L1 and L2 speakers. Gibbs et al. (1997) point out that idiomatic expressions and their literal paraphrases are processed with very similar speeds and the reading times are also similar. Readers quickly understand formulaic sequences in context and that they are not more difficult to understand than literal speech.

Adolphs and Durov (2004), in their study on effect of social and cultural integration of L2 learners' target language environment on the acquisition of formulaic sequences, found out that those having more social and cultural contacts with the native speakers of the target language learned significantly more formulaic sequences. They also state that in the process of second language acquisition, exposure to the target language is extremely effective for learning lexical items, grammatical structures and having communicative

competence. Schmitt and Dörnyei (2004), studying the effects of factors such as age, gender, language aptitude, attitude and motivation on acquisition of formulaic sequences, conclude that language aptitude, attitude and motivation are surprisingly seen to have statistically insignificant enhancement effects on the acquisition of target formulaic sequences. This might have arisen from the preexisting knowledge of formulaic sequences and explicit exposure at least once from their instructors.

Studies on eye movement methodology are used for recognizing formulaic sequences with the reasoning that the eye movement speed and duration of fixation (processing of formulaic sequence) are good indicators of determining known and unknown words and formulaic sequences. Readers move faster on the known and familiar lexical items but slow down when encountering unknown and unfamiliar ones(Underwood et al., 2004; Schmitt and Underwood, 2004). Similarly**,** Underwood et al. (2004) used the eye-movement methodology to explore the recognition of formulaic sequences in texts. They embedded idioms into reading passages and then measured how often and for what duration the final words in those idioms were fixated upon. The results were then compared to measurements of the same words in non-formulaic contexts. This tested the hypothesis that once an idiom is recognized from the first few words, the final word requires less attention, because it is already known from familiarity with the idiom. They found that native speakers, indeed, fixated less on the terminal words in formulaic than non-formulaic contexts, and for a shorter duration. This is the evidence of a processing advantage for formulaic sequences vs. creative language.

Danielsson (2007) claims that a great number of linguists have been arguing for years that for fluency a learner needs to know conventional patterning around the words and not just the meaning and grammatical class of the word. She also argues that any computational linguistic system that wants to recognize or synthesize language will need to have vast amount of information about the pattern.

2.5. Vocabulary Build-up

Vocabulary knowledge is extremely important for proficiency and there are basically two methods governing vocabulary acquisition, namely intentional and incidental learning. Jenkins et al. (1984), examining the degree of incidental vocabulary learning from context, conclude that word meanings are learned more from context and the frequency of exposure to the target words enhances learning. He also claims that prior

exposure to vocabulary via informal teaching results in greater learning through reading and argues that vocabulary knowledge is one of the best predictors of overall verbal intelligence.

Pulido (2007a), in a study tested the effects of passage sight and topic familiarity on lexical inferencing (success and ease of processing) and on retention of target words embedded in two reading passages, conclude that topic familiarity and passage sight vocabulary induce a significant impact on lexical inferencing and the subjects gain substantially more correct target words when reading a familiar topic than less familiar topic. It may arise from the activation of readers' syntactic, semantic and pragmatic knowledge in constructing meaning by context cues. He concludes that topic familiarity has inconsistent effects on retention of target words determined by inference verification task to promote revision, integration and retention. He also claims that vocabulary learning via reading is a complex procedure involving noticing of unfamiliar words, text processing and comprehension without using dictionaries and human help. The process requires lexical inferencing using context cues, linguistic and extra-linguistic knowledge.

Text processing and comprehension are influenced by background knowledge and L2 proficiency which are reader based aspects. However inefficient processing due to less intensive rehearsal, the inbuilt low proficiency or in the cases that reader's insufficient concentration for more elaborate processing lead to more superficial retention of the target words prone to loss from memory (Pulido, 2007a, b). Retention of new words depends upon 'need' to represent motivational aspect, 'search' to represent efforts to acquire the meaning of an unfamiliar word and 'evaluation to represent the decision on the formal and semantic appropriateness of the word and the context (Hulstijn, 2001; Pulido, 2007a).

Pulido (2007b) in search of assessing the relationship between text comprehension and L2 incidental vocabulary acquisition claims that comprehension constitutes the heart of second language acquisition. In vocabulary development via reading comprehension of an unknown word means that a meaning is attached to it. This implies the establishment of form-meaning connection. The process of comprehension incorporates the formation of mental representation from input with the objectives of comprehending a written or oral message. Pulido also argues that for establishing form-meaning connection for unfamiliar lexical items while reading, new word forms must be noticed and sufficient attention

allocated but the quality of processing plays a significant role for the occurrence of lexical development. Furthermore, the lexical items easily guessed (through inferencing) while reading may not be better retained due to the allocation of insufficient attention to the word form meaning connection. He comments that previous research substantiates the existence of reciprocal relationships between reading comprehension and general lexical knowledge in relation to L1 and L2. Finally, he concludes that in spite of the tremendous impact of incidental vocabulary gain and retention, the relationship between comprehension and intake is claimed to be inconsistent and variable due to readers' background knowledge.

2.6. Noticing

Recently there has been great interest on awareness, incidental, conscious learning, and noticing. A great number of researchers agree on the concept of noticing as a prerequisite for successful language learning (Schmidt, 1990; Schmitt and Carter, 2004; Bishop, 2004; Iwanaka and Takatsuka, 2007).

The vital role of conscious and unconscious processes and the concept of commonly shared issues in the acquisition of the second language has been the focus of interest in cognitive psychology. Schmidt (2001) claims that in second language acquisition, learners should pay proper attention to target linguistic items in order to internalize new knowledge about the second language and that unconscious learning, if any, is limited compared to conscious learning. Attention is viewed as a limited set of mental resources that have to be shared by various processing activities (de Bot, 1996). Noticing arises when learners allocate attentional resources to a certain aspect of language. If a learner pays selective attention to a form, it is likely that noticing a form occurs. Learning lexical items is a process of mapping forms with their appropriate meanings. To acquire lexical items, learners have to internalize both forms and their appropriate meanings. (Iwanaka and Takatsuka., 2007, p. 26). Iwanaka and Takatsuka regarding the influences of attention and noticing on L2 acquisition, assert that realizing problems and noticing forms stem from focusing attention. Realizing problems in output induces form noticing in input as shown in Figure 2.2.

Realizing a problem in output ------ Solution----------Noticing a form in input---------- Acquisition

(**Source: Iwanaka and Takatsuka. 2007**)

Figure 2.2. Form Noticing

Schauer (2006), in his study on pragmatic awareness of German ESL learners in target language environment (England) concludes that pragmatic awareness is significantly increased during their lengthy stay in England. He adds that three factors play significant role in the second language learner's linguistic awareness, namely the proficiency level, the learning environment and the student's access to authentic L2 input. He also says that the L2 learners having greater exposure to English language display a greater amount of competence.

2.6.1. Levelt's Model of Lexical Processing

Levelt (1989) puts forth the lexical model claiming that information about a word is represented at two levels in mental lexicon, namely the lemma and lexeme levels (Figure 2. 3).

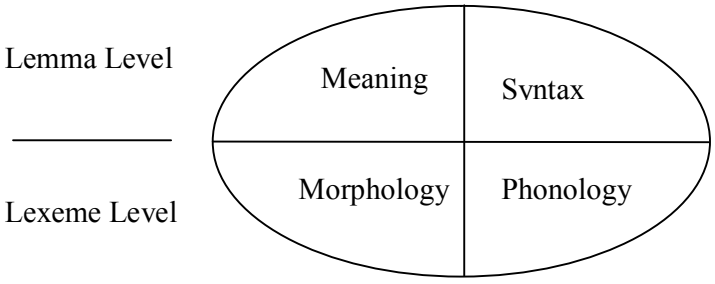

Figure 2.3. Internal Structure of an Item in the Mental Lexicon (Levelt, 1989)

The lemma level deals with the basic meaning and syntax, the lexeme level deals with morphological and phonological properties. For example, in the lemma level the basic meaning of '*to eat*' is 'to ingest for nourishment or pleasure' and syntacticaly takes external subject and obtionally external object. The morhological properties include the derivations of the verb as eats, ate, eating, eaten and the phonological properties include phonological segments, syllable and accent structure.

Levelt (1989) provides a very complex lexical processing model in L1, in the sense that lexicon at lemma and lexeme level form the core of speech once an individual mentally intends to communicate (Figure 2.4).

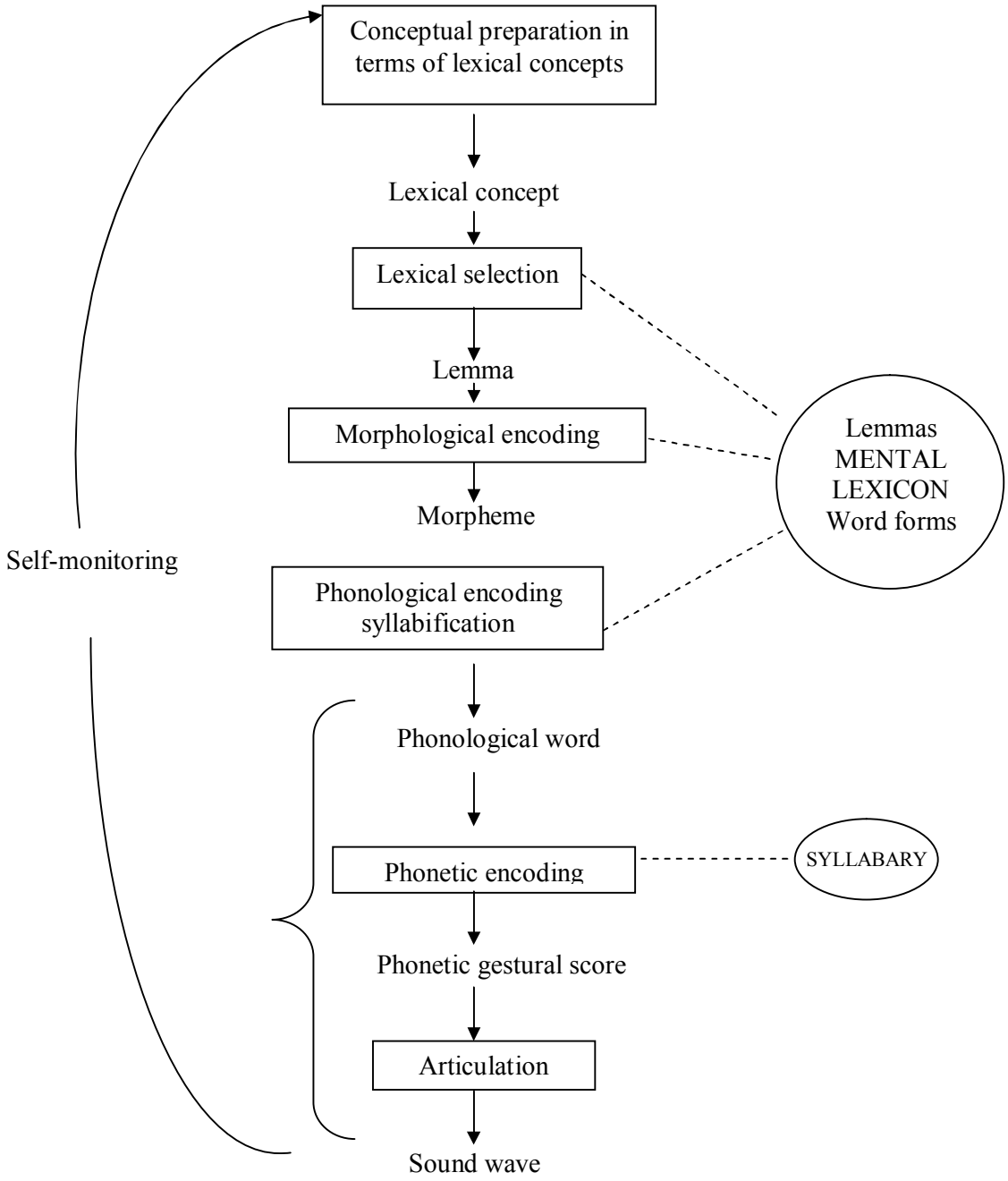

Figure 2. 4. Levelt's Lexical Processing Theory

In Figure 2.4, production of words follow distinct stages originating from conceptual preparation to the initiation of articulation. In conceptual preperation, the intentional production of a meaningful word always involves the activation of its lexical concept. The process leading up to the activation of a lexical concept is called " conceptual preparation". For instance, Levelt (1999) gives the example of female horse and its

conceptual equivalent of mare, and the female elephant for which there is no unitary lexical concept. Thus, the speaker has to select female elephant as a lexical concept.

The following stage is the lexical selection which is selecting the proper lexical items that match the best for the intended lexical concept. Normally, human brain selects two to three words per second from the mental lexicon containing thousands of items. This is a very fast and incredibly accurate process in the sense that the wrong selection ratio is around one in every thousand lexical selection. At this stage the grammatical encoding has to be performed (Levelt, 1999).

Following the selection of syntactic word (lemma), the process in line is morphological and phonological encoding which actually forms the lexeme level. The main task is to prepare the appropriate articulatory gestures for the selected words namely its phonological shape. According to the theory accessing the word form means activation of the word'd morphology, its metrical shape and its segmental makeup (Levelt, 1999).

The stage before articulation is the phonetic encoding which describes the glottal, nasal and oral contributions for the appropriate phonetics of the word. In the final stage the output is realized by the articulatory system which 'is a computational neural system that controls the execution of abstract gestural scores by this highly complex motor system'. The lexical processing performed includes the self monitoring of the speech spontaneously. The main purpose is to self repair in case of wrong processing. This can be both in the speech and internal speech (Levelt, 1999).

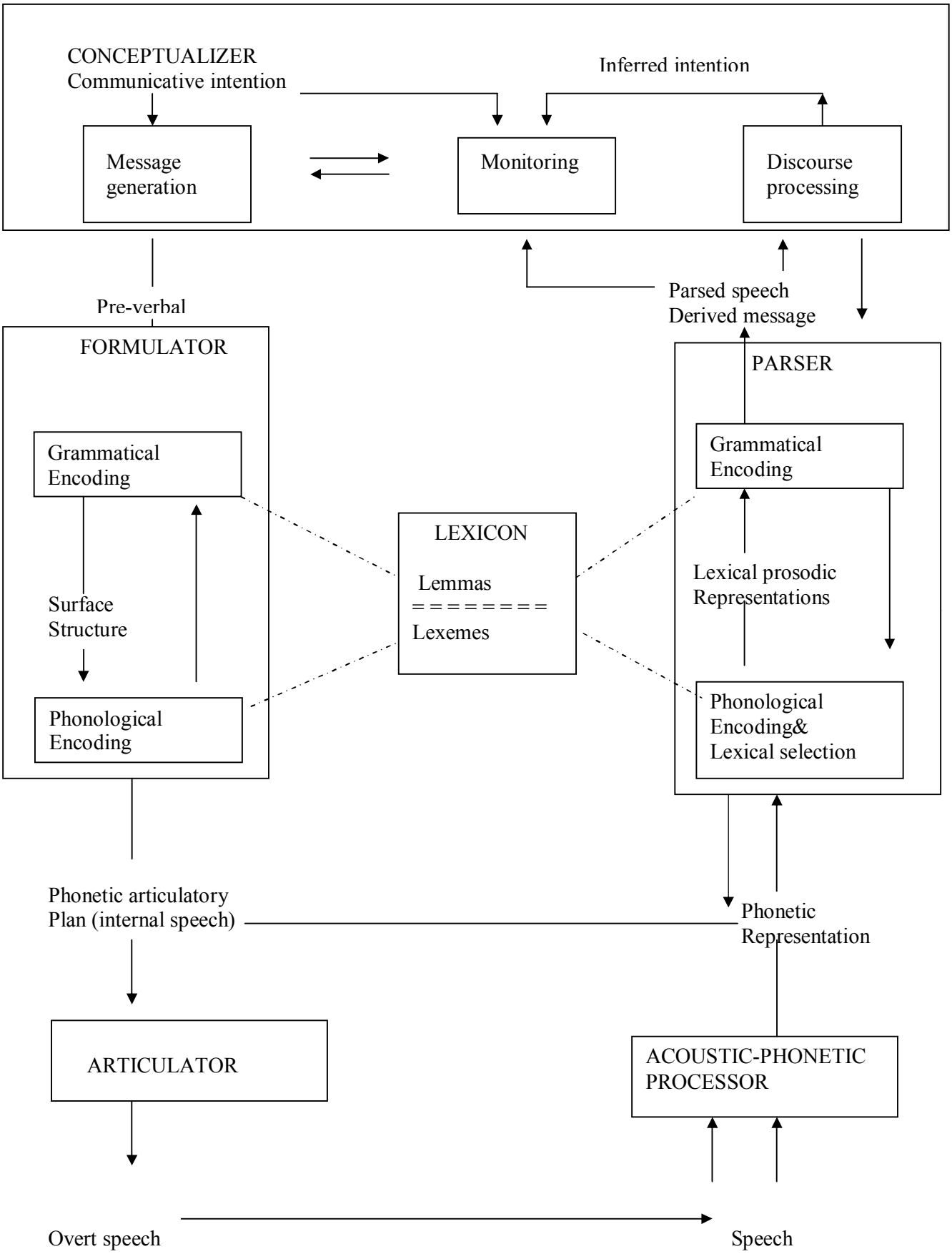

Figure 2.5. Levelt's L1 Model of Lexical Processing

Figure 2.5 is a schematic representation of Levelt's L1 model of lexical processing involves three levels namely the conceptual, lemma and lexime levels. They are responsible from productive (language) and receptive language use. The lemma level is the mental representation of syntactic and semantic information and the lexime level which is mental representation incorporating morphological and orthographic data. When a speaker intends to make a speech the conceptualizer has the function of message generation, then the pre-verbal and non-linguistic message is trasfered to the formulator which interprets the message and provides grammatical encoding by selecting the appropriate lexical items in conjunction with the lemma and lexeme level where the meaning is combined with the appropriate lexical items is converted to internal speech with phonological and orthographical properties which is finally converted into avert speech through the articular.

In the case of processing of speech to a conceptual meaning the reverse is applied where the speech is first processed by the acoustic – phonetic processor and is transferred for phonological and orthographical processing by the lexeme level. Following the gramatical decoding, the parsed speech is transferred to conceptualizer for discourse processing and monitoring of the formed meaningful message (Levelt, 1989; Levelt 1999).

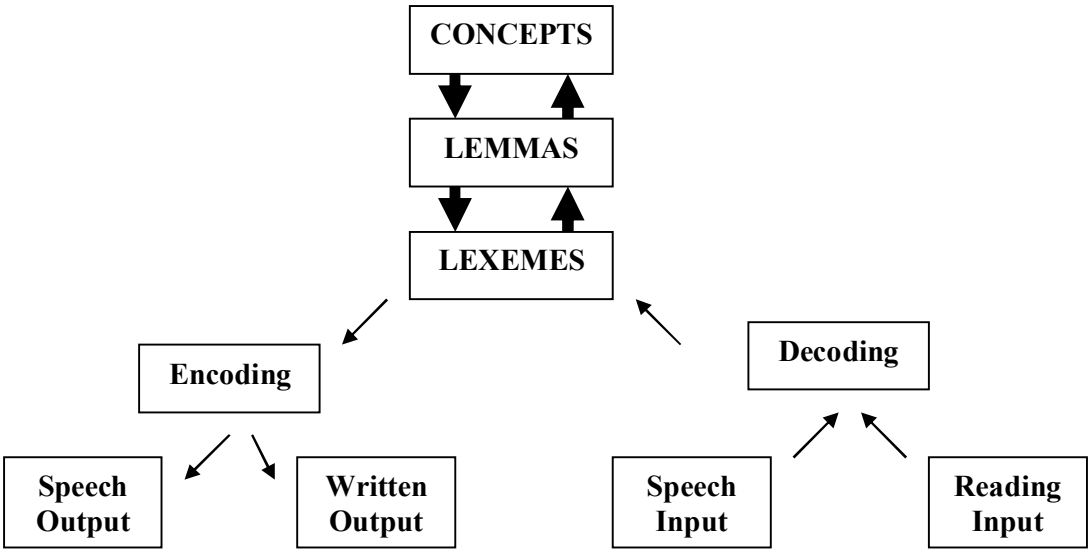

Figure 2.6. de Bot et al.'s Modification of Levelt's Lexical Processing

2.6.2. de Bot et al.'s Processing Model for L2 Vocabulary

de Bot et al. (1997) suggest that Levelt's lexical processing model for L1 can be modified to L2 lexical processing. The model is presented in Figure 2.6.

In this modified model of lexical processing, de Bot et al. (1997) outline the comprehension of the lexical items read or heard which are decoded and sent to the lexeme level of processing which in return transfers the decoded lexical item into the lemma where conceptual meaning is matched. In speech production, the opposite processing starts from the lemma in selection of the concept to be transferred in the lemma level and then the lexeme level functions in ortographical and phonological forms which are encoded and transformed into speech or writing. Nattinger (1988) argues that receptive knowledge is generally more developed than productive lexical knowledge.

de Bot et al.'s model clearly shows that input processes for vocabulary acquisition are highly significant during L2 reading. Appropriate meanings must be matched with incoming forms. It is not intended to underestimate the role of output in consolidating and forwarding information on lexical items as they become better known. In Levelt's lexical processing model, there is one lexeme - lemma matching mechanism for lexical items. The two critical different aspects of L1 and L2 lexical acquisitions are: L2 learners own pre-existing conceptual system coming from their L1 and the lack of intensive exposure to L2, as the L1 speakers of that language.

2.6.3. Schmidt's Noticing Hypothesis

In his well recognized Noticing Hypothesis, Schmidt (1990) claims that "conscious awareness at the level of noticing is necessary for language learning" (p.129). Both intentional and incidental learning are asserted to be important in language learning. For the conversion of input into intake, noticing is essential. Carr and Curran (1994) claim that consciousness is required for attending something and the reverse is also valid. Schmidt (1995) argues that noticing or paying attention is functionally the same as awareness. Similarly, without attention, incidental and intentional learning is impossible (Shiffrin and Scheider,1977; Velmans, 1991; Khilstrom, 1984; Fisk and Schneider, 1984; Carlson and Dolany, 1985, Nissen and Bullemer, 1987; Logan, 1988; Velmans,1991;Posner, 1992). By the same token, some researchers (Carr and Curran, 1994; Tomlin and Villa, 1994) claim that in L2 acquisition, attention is necessary for efficient learning process.

Noticing hypothesis is applicable to syntax as well as vocabulary (Schmidt, 1993). Noticing is redefined by Schmidt (1995) as conscious registration of occurrance of some events. Regarding vocabulary acquisition, this implies in Levelt's Model of Processing Mechanism at lexeme level where lexical items are registered orthographically or phonographically. Schmidt also puts forth that noticing involves lexeme in processing mechanism and understanding involves lemma, implying that noticing does not mean undestanding. Understanding a lexical item matches with being able to retreive data presented at lemma level. In other words noticing is a prerequisite for understanding which leads to learning.

2.6.4. Research on Noticing

Murphy (2002) in testing Schmidt's Hypothesis investigated input employing various media (songs, stories and films) on the intake and immediate output of intermediate French language students, concluded that intonation during speaking, frequency of the item used as input and familiarity were the main factors inducing noticing and concluded that with some minor reservations, Schmidt's Hypothesis is valid in the sense that the noticed linguistic items became intake and some of them were available for production following perception and absorption.

Murphy (2002) also asserted that in spite of the fact that written and spoken inputs were similar in intake, the written form is more effective in availability in output. Furthermore, the written input increased lexical, semantic and syntactic quality of output. He also claims that visual information helps the comprehension process but detrimental to the acquisition of linguistic items due to the reliance of visual cues of the learners.

Slobin (1985) also insists on the fundamental role of noticing in language acquisition: "the only linguistic material that can figure in language-making are stretches of speech that attract the child's attention to a sufficient degree to be noticed and held in memory" (p. 1164). Slobin listed similar factors in his concept of the perceptual and storage filters that "determine which segments of the speech stream will be of sufficient perceptual salience to be noticed and stored" (p 1161). Among his operating principles, or guidelines for linguistic perception, are attention to syntactic markers such as word-final particles, phonological markers such as intonation and speech rhythm, frequency of

occurrence, and semantic transparency. The learner must consciously focus on these strategies, since they are "necessary prerequisites for the perception, analysis, and use of language in ways that will lead to the mastery of any particular input language" (p.1159) Lindgren and Sullivan (2003) in their study of increasing noticing and language awareness, conclude that stimulated recall sessions significantly increased awareness. They signify the importance of formulaic sequences as being more than strings of words tied with collocational relations and communicative contents are bound to them.

Robinson (1995) argues that in second language acquisition "differential performance on implicit and explicit learning and memory experiments is caused by differences in the consciously regulated processing demands of training tasks and not by the activation of consciously and unconsciously accessed system" (p. 283). He also puts forth that " the attention demands of pedagogical tasks and individual differences in memory and attention capacity both affect the extent of noticing, thereby directly influencing second language acquisition" (p. 283). Hegelheimer and Chapelle (2000) describe three approaches to lexical noticing namely use of retroscopic think-aloud protocols, highlight linguistic features and use direct observations of observable interactions.

Jourdenais et al. (1995) found out that even emphasis with pronouns by underlying via bold characterizing did not induce clear differences in noticing, due to the lack of intensive inferencing.

In fact, Chun and Plass (1996) provided one appoach by recording learners' requests for modified input as annotations while reading classifying the subjects into two groups, those demanding frequent and infrequent requests. In this experiment frequent requests implied the frequent noticing of problems. They concluded that the frequency of noticing and looking up the meaning did not induce improved performance which contradicts with noticing hypothesis. The high frequency of looking up the meaning might have originated from the poorer students furnished with smaller vocabulary build up needing more frequent look up. The group having less frequent looking up requests might have also noticed the words but instead of looking up for the meaning learned the words by inferencing because it requres more eleborate processing than simply looking up the meaning.

Hegelheimer (1998) provided the other aproach of concurrent assessment by recording the instances of noticing the problematic words and requesting for input modification. This was accomplished by clicking on the words in the given text. Those students who noticed the words and requested modified inputs learned vocabulary better than those students who used glosses, as measured by post-tests,

According to de Bot et al. (1997) and Fraser (1999), readers are more inclined to ignore the unknown words. This arises a serious problem in the precise measurement of noticing, as in the case of Chun and Plass (1996), in two confusing reflex a) subjects actually do not notice the words or b) they ignore the unknown words.

2.6.5. Limitations of Schmidt's Noticing Hypothesis

Some researchers are highly critical on the effectiveness of Schmidt's Noticing Hypothesis. Among them Truscott (1998) may be the most outspeaking one. He is extremely critical on the following points a) the fundamentals that the hypothesis in cognitive psychology are weak; b) studies on this topic fail to support the hypothesis and are unable to provide a clear interpretation; c) the interpretations of the results are not satisfactory for language acquisition; d) the hypothesis is not based on any theory of language so it is hard to draw any testable predictions from it; e) without specific predictions, studies on form-focused instruction and feedback provide indirect test, the results of which create additional problems for the hypothesis.

2.6.6. Typographic Salience Effect on Noticing

Unnoticing the holistic nature of a formulaic sequence interferes with its processing and subsequent learning. In order to process a lexical item, it has to be perceived phonologically and orthographically at the lexeme level and semantically and syntactically at the lemma level. The attempt to ascertain meaning of an unknown lexeme leads to the setting up of an empty knowledge structure for a new lemma, which can be filled using a varity of knowledge sources (inferring or looking up words). Filling the empty lemma implies comprehension, and this is a prerequisite for learning(Bishop, 2004; Paribakht and Wesche, 1996). Therefore recognition of the form of the formulaic sequences is an essential step towards learning.

L1 and L2 learners possess different vocabulary knowledge due to different exposures to the target language and the input intensities. In other words, native speakers have broader knowledge of formulaic sequences. L2 learners fail to perceive the formulaic sequences and they need to be made aware of that the multi-word lexial item is formulaic sequence. For increasing awareness of the recognition of the form of formulaic sequences of L2 learners, Tullis (1998) suggests these lexical items can be made perceptually salient, such as using bold face, underlining, using color, using asterisks. Similarly, Grabinger & Osman-Jouchoux (1996) suggest format changes for capturing readers attention.

Hegelheimer and Chapelle (2000) argues that making target items visible by highlighting, with the expectation that the participants will percieve them better should not be taken for granted. They also suggest that the use of computer technology to implement a *concurrent noticing approach* (p. 48) to pinpoint the action taken when a salient lexical item is recognized. In this study this approach will be employed in the form of 'mouse clicks'.

Typographic salience was used by a number of researchers to highlight linguistic form for enhancing awareness. Chun and Plass (1996) in the study on the effects of multimedia annotations on vocabulary acquisitions used diacritics (°) to draw attention to lexical items available for glossary help during online reading, and reported that the lexical items were made more memorable. Doughty (1991) used typographic salience to increase awareness of relative clause formation and concluded that the salience effect was not apparent. Hegelheimer and Chapelle (2000), in their study on '*Metadological issues in research on learner-computer relations in CALL*', used bold face type on the lexical items which could be glossed by clicking on hyperlinks with the purpose of assessing the the effect of salience on measurable learning effects. de Ridder (1999, 2000) reported that L2 learners clicked significantly more on a text with highlighted hyperlings than the text without highlights. Furthermore she found out that increased clicking on the salient items did not have adverse effect on L2 learners reading speed or comprehension.

CHAPTER III

METHODOLOGY

3.1 Introduction

This chapter incorporates the research design, the selection of the participants, instruments including a standard placement test, a vocabulary pre-test and a computer program designed to carry out the test. It also contains the post treatment test (in order to assess reading comprehension) followed by the statistical analysis of the data accessed.

3.2. Research Design

This study was designed as a partial replicate of the Ph. D. dissertation titled *"The Noticing of Formulaic sequences by Second Language Readers"*conducted by Hugh Bishop (2004) submitted to the University of Wisconsin, Madison, USA. The participants were selected from the upper intermediate Turkish undergraduate students studying at the English Language Teaching Department of the Faculty of Education in the University of Çukurova. In order to select participants objectively, a standard placement test was administered to 120 students for determining their level of English.

The target single words and formulaic sequences were selected using Collin's Wordbanks Corpus (available at: http://titania.cobuild.collins.cu.uk) It includes 520 million words taken from books, magazines, newspapers, radio broadcasts and spontaneous conversation in Australian, British, American and other major varieties of English. In the online version (one of the 12 sub-corpora) there are 56 million words. In this study, the reading only sub-corpora with 45 million words of written English, was found more appropriate. The selected 40 lexical items (20 single words and 20 formulaic sequences were checked for their frequencies and the specific meanings (Bishop 2004, p. 76).

A total of 46 students was selected for Vocabulary Knowledge Scale (VKS) pre-test, treatment (online computer program to measure noticing of formulaic sequences) and post-test (reading comprehension).

3.3 Participants

The participants were forty-six Turkish undergraduate students majoring English Language Teaching at the University of Çukurova. Twenty-seven participants were female, and the remaining nineteen were male. Their ages ranged between 19 and 22. They were randaomly distributed to the treatment groups (Test 1 – Non-Salient Text; Test 2 – Salient Text).

3.4. Instruments

For collecting data primarily two kinds of intruments were used:

a) Vocabulary Knowledge Scale Test.

Vocabulary Knowledge Test was developed by Paribakht and Weshe (1993) to distinguish stages in learners' developing knowledge of particular words. It has a 5-point scale combining self report and performance items to elicit self percieved and demonstrated knowledge of specific words in written form. The choices in the scale ranged from a spectrum of total unfamiliarity to recognition of the word and some ideas of its meaning to the ability of using the word with grammatical and semantic accuracy (Paribakht and Wesche, 1997). The equivalence of words and formulaic sequences used in the VKS were selected by Bishop (2004) using online Cambridge Dictionaries (accessible at http://dictionary.cambridge.org/) (Bishop, 2004, p. 76).

A paper based VKS (Wesche and Paribakht, 1993) was used in order to assess participants' vocabulary knowledge as the pre-test (Appendix 1). Vocabulary Knowledge Scale consisted of 40 lexical items, half of which was single words, and the other half was formulaic sequences. Scoring was calculated as binary known or unknown scores (0=Unknown, 1=Known). A question is presented in Figure 3.1. The evaluation of the VKS was made manually and recorded in an Excel file for statistical analysis.

1/40 Which answer best matches your klowledge of following item ?

Eliminate

a) I don't remember having seen this item before.
b) I have seen this item before, but I don't know what it means.
c) I have seen this item before, and I think it means… (Write synonym).
d) I know this item. It means … (Write synonym).
e) I can use this item in a sentence. (Write a sentence).

Figure 3.1. A Question Taken from the Vocabulary Knowledge Scale Pre-test

b) Online Computer Program

The online customized computer program included two varieties of a text and a reading comprehension true/false post test was developed for the treatment. The Text on 'Global Warming' consisting 10 target single words and their equivalent 10 target formulaic sequences was taken from Bishop (2004) who cheched their equivalence from Collins's CoBuildDirect Corpus Sampler (http://titania-cobuild.collins.co.uk).

The program operated by the participants by using assigned usernames and passwords (Figure 3.2). The participants used the Computer Laboratory of the University of Çukurova.

The program was carried out on 46 participants divided into two groups of 23 each in the computer lab of the University of Çukurova. The participants were assigned to groups randomly. There were two slightly different versions of the same text, one with salient target formulaic sequences and the other with the identical non-salient ones. In Test 1, the target lexical items (10 single words and 10 formulaic sequences) were kept non-salient (Appendix II). In Test 2, only the target formulaic sequences were highlighted and underlined while leaving the target single words as non-salient (Appendix III).

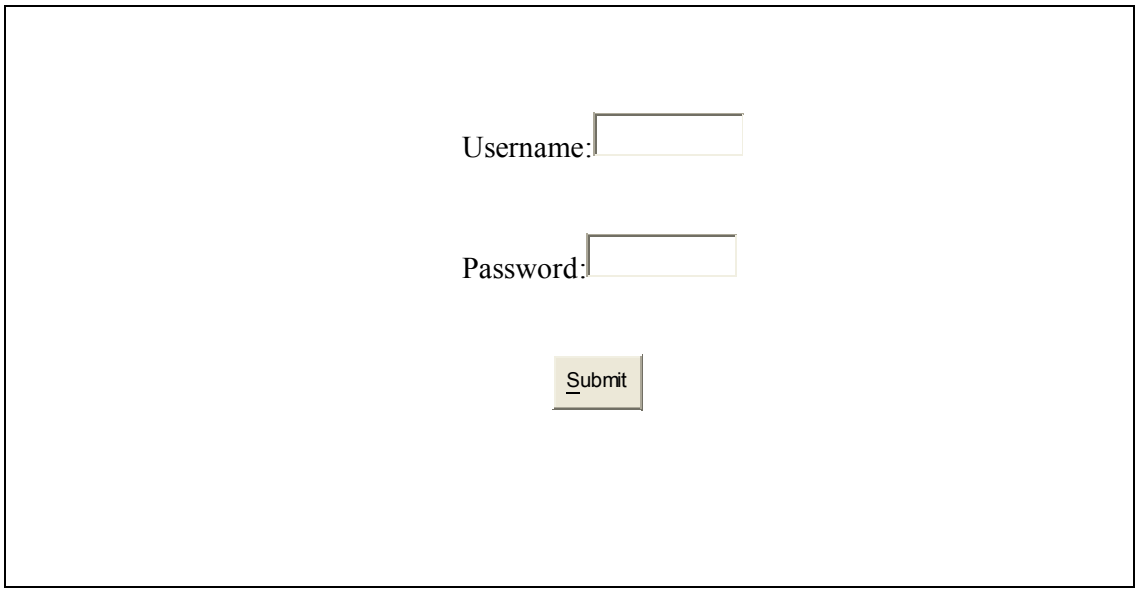

Figure 3.2. Participant's Access to Online Computer Program

Both in Test 1 and Test 2, the participants had the opportunity to get glossary help by clicking on the unknown target lexical item. The number of clicks per participant was recorded, stored and used to assess noticing (Appendix 1V).

After reading the text, participants were given a post test consisting of 20 true/false question in order to assess participants' reading comprehension performance (Appendix V).

The data of the treatments were stored instantly by the computer program. As a sample, a participant's data on the lexical items clicked, number of clicks per lexical item and post-test evaluation is presented in the Appendix VI.

3.5 Statistical Analysis

Statistical analysis was carried out SPSS 15.0 package. The means of the known target single words and the known target formulaic sequences were compared by using Independent Samples t-Test. Similarly, the means of the target single words and target formulaic sequences clicked for glossary help were also compared using Paired Samples t-Test.

In comparing the means of the typographically salient formulaic sequences and non-salient formulaic sequences, Independent Samples t-Test was utilized. Independent Samples t-Test was also used for testing the effect of salience between the means of the correct answers of Test 1-Non-Salient Text Group, and Test 2- Salient Text Group in the post-test to measure comprehension.

CHAPTER 4

RESULTS AND DISCUSSION

4.1. Introduction

This chapter intends to present the results and the discussion of the findings in this research in the following order:

I. Vocabulary Knowledge Scale in order to assess participants' knowledge of formulaic sequences and single words (4.2)
II. Glossary help for target single words and formulaic sequences (4.3)
III. Relationship between salient formulaic sequences and glossary help (4.4).
IV. Relationship between salient formulaic sequences and reading comprehension (4.5)

4.2. Formulaic Sequences versus Single Words in VKS

Research Question 1. *Will upper intermediate Turkish L2 learners of English know fewer formulaic sequences than single words in Vocabulary Knowledge Scale (VKS)?*

Table 4.1. Means and Standard Deviations of the VKS Test Scores

Lexical Items Known	Number of participants	Mean	Std. Deviation
Single Words	46	11.48	2.78
Formulaic Sequences	46	7.91	3.29

46 upper intermediate level students of English Language Teaching in the Faculty of Education-University of Çukurova were given the VKS test in order to assess the vocabulary knowledge (target single words and formulaic sequences). The means and standard deviations of the VKS test can be seen in Table 4.1. The test consisted of 20 target single words and 20 target formulaic sequences. The participants on the average knew more target single words than target formulaic sequences.

The difference of the means of the target single words known and target formulaic sequences known were tested using a paired samples t-test (Table 4.2). The hypothesis was that upper intermediate level Turkish L2 learners would know more target words than target formulaic sequences. The paired samples t-test results show that the participants knew more target single words than formulaic sequence and the difference between the means were statistically significant at 95 % confidence interval ($P<0.05$).

Table 4.2 Independent Samples t-Test for Means of Knowledge of Target single Words and Formulaic Sequences.

	Paired Differences						
Target Single Words & Formulaic Sequences	Mean	S.D.	S_X	95% Conf. Int. Lower	95% Conf. Int. Upper	t	df
	3.57	2.39	.35	2.86	4.28	10.112	45

Many researchers claim that learning formulaic sequences was difficult for L2 language students (Howarth, 1998; Huckin and Coady, 1999; Wray 2002). Schmitt and Carter (2004) elaborate on the acquisition of formulaic sequences by L1 and they also analyze the reasons for L2 weakness in proficient use of formulaic sequences. They refer to the findings of some researchers such as formulaic language of L2 learners tend to lag behind other linguistic aspects (Irujo, 1993); L2 learners are insufficiently exposed to target language and the availability of rich input is lacking (Irujo, 1986); avoiding the use of formulaic sequences when addressed by L1 speakers, L2 learners also detain themselves from using formulaic sequences and sticking to better known single words Kellerman, 1977), and the social environment of L2 learners (Wray, 2002).

Table 4.3. Overall Findings in Pre-test (VKS) Results-Participants' Target Single Word and Formulaic Sequence Scores

Target Word	Knowledge of Target Single Words	%	Target Formulaic Sequences	Knowledge of Target Formulaic Sequence	%
Eliminate	40/46	87.0	Do away with	16/46	34.8
Endure	40/46	87.0	Put up with	34/46	73.9
Expatiate	1/46	2.2	Hold forth	5/46	10.9
Discern	7/46	15.2	Catch on to	2/46	4.3
Consequences	44/46	95.7	Fall out	9/46	19.6
Distinguish	42/46	91.3	Have an inkling of	8/46	17.4
Outweigh	24/46	52.2	Loom larger than	1/46	2.2
Accumulate	40/46	87.0	Pile up	21/46	45.7
Ongoing	39/46	84.8	Under way	12/46	26.1
Implement	24/46	52.2	Carry out	36/46	78.3
Moderate	32/46	69.6	Cut down on	30/46	65.2
Defer	8/46	17.4	Put off	32/46	69.6
Obviate	1/46	2.2	Cut off	39/46	84.8
Abolish	27/46	58.7	Cut out	14/46	30.4
Concede	3/46	6.5	Come to terms with	14/46	30.4
Persuasive	38/46	82.6	Silver tongued	9/46	19.6
Perspicacity	5/46	10.9	Clearness of mind	17/46	37.0
Determine	42/46	91.3	Come up with	28/46	60.9
Excessive	42/46	91.3	Over the top	11/46	23.9
Distrupt	29/46	63.0	Throw into disorder	26/46	56.5
Mean	11.48		Mean	7.91	

The results of the VKS test are presented in Table 4.3. with the objectives of indicating which target single word formulaic sequences are well known and which target lexical items are least known. It was seen that the corpus frequencies are great determinants of the knowledge of the lexical item.

The results of the VKS test clearly show that the most well known words were *consequences* (44/46), *distinguish* (42/46), *determine* (42/46), *excessive* (42/46), *eliminate* (40/46), *endure* (40/46) were very well known other words (Table 4.4). Similarly findings with the formulaic sequences indicate that the formulaic sequences, *cut off* (39/46), *carry out* (36/46), *put up with* (34/46), *put off* (32/46) were better known. It may be noteworthy to indicate that the most known single word and formulaic sequence rankings do not follow the frequency of occurance in the written Sub-corpora of Collins Wordbanks. There is, however, a decreasing frequency of occurance in the subcorpora and the similar decrease in the number of lexical items known by the participants.

Table 4.4. The Most Known Target Single Words and Formulaic Sequences (VKS)

Target Single Word	No of Participants who know	%	Target Formulaic Sequence	No of Participants Who know	%
Consequences	44	95.7	Cut off	39	84.8
Distinguish	42	91.3	Carry out	36	78.3
Determine	42	91.3	Put up with	34	73.9
Excessive	42	91.3	Put off	32	69.6
Eliminate	40	87.0	Cut down on	30	65.2
Mean	42	91.3	Mean	34.3	74.1

Nation (1990) claims that there are 2000 most frequent words cover 87 % of the lexical items in an average text and suggests that these words should be taught intensively in EFL classes. The participants of this study take a very competitive university placement test (ÖSS) before they qualify to study at the English Language Teaching Department of the University of Çukurova. As they prepare for the ÖSS placement test, they also take private courses which provide students extensive grammar and vocabulary knowledge. Most of the vocabulary knowledge is gained through intentional learning. Furthermore, these participants are subjected to four semesters of courses in Department of ELT in the University of Çukurova. The differences among the students may be arising from the motivation. There were very few students missing the most frequent 10 target single words. The maximum and minimum single target words known(18/20 and 5/20) in VKS

indicate that there is a big variation with respect to the vocabulary knowledge among the students.

In the case of the formulaic sequences the frequently occuring phrasal verbs were the best known. The knowledge of formulaic sequence also show wide variation among the students (18/20 and 3/20). According to Laufer (1997), those student exhibiting low vocabulary scores may have reading and comprehension problems.

Conversely, the rarely exposed single words such as *obviate* (1/46), *expatiate* (1/46), *concede* (1/46), *perspicacity* (5/46) and *discern* (7/46) were found to be more difficult single words. Similarly, the target formulaic sequences *the loom larger* 1/46, *catch on to* (2/46), *hold forth* (5/46) and *have an inkling of* are rare words and are seen to be less known by the upper intermediate students.

Table 4.5. The Least Known Target Single Words and Formulaic Sequences

Target Single Word	No of Participants Who know	%	Target Formulaic Sequence	No of Participants who know	%
Expatiate	1	2.2	Loom larger than	1	2.2.
Obviate	1	2.2	Catch on to	2	4.3
Concede	3	6.5	Hold forth	5	10.9
Perspicacity	5	10.9	Have an inkling of	8	17.4
Discern	7	15.2	Fall out	9	19.6
Mean	3.4	7.4	Mean	5.0	9.2

Arnaud and Savignon (1997) assert that rare words impose problem be they single words or formulaic sequences. Nation (1990) also claim that words occurring extremely rarely are not worth to be taught in the class. Naturally in L2 learning extremely rare words and formulaic sequences should not be priori lexical items. Bishop (2004) lists the frequencies of all the target single words and formulaic sequences according to Collins Wordbanks Written Subcorpora containing 45 million lexical items. The occurrences for some of the target single words and formulaic sequences were: *expatiate* (5), *perspicacity* (7), *obviate* (37), *moderate* (70), *discern* (112) as compared to the frequency of *determine*

(4527) and consequeces (1338). In the case of the formulaic sequences, the frequencies were : *throw into disorder* (0), *clearness of mind* (4), *loom larger than* (4), *have an inkling of* (7). It is surprising to see that *clearness of mind* and *throw into disorder* quite a number of students knew the sequences corrrectly; 17/46 and 26/46. This must have been due to word by word matching of these item in direct translation.

These results are in line with those by Bishop (2004) who reported correlation coefficient of single word knowledge and rank frequency in Corpus as 0.635 and correlation coefficient of formulaic sequences known and rank frequency in corpus as 0.341. It is worthwhile to state that the correlation coeffient for single words was found higher than the correlation coefficient for formulaic sequences.

4.3. Glossary Help for Single Words and Formulaic Sequences

Research Question 2. *Will the participants request more glossary help for target single words than targeted formulaic sequences?*

A customized online computer program was specially designed to allow the participants to get glossary help by mouse clicks on the target 10 single words and 10 formulaic sequences. The program also stored all the data concerning the tasks demanded from the participants. Table 4.6 presents data of the participants concerning the unknown target single words and target formulaic sequences noticed. Noticing is implemented by mouse clicks on the target items. The frequency of clicking is also recorded by the computer program. It is noticed that some participants 6 participants did not click at all. This mean they either failed to notice the target single words and target formulaic sequences or knew all the target lexical items. Some of the participants sought help for all the target single words and formulaic sequences.

Table 4.6. Glossary Help Requests and Their Frequencies

Participants	No of Target Target Single Words Clicked	Frequency of Clicking Clicking Frequency of Target Single Words	No of Target Target Formulaic Sequence Clicked	Frequency of Clicking Frequency of Target Formulaic Sequence
1	2	2	1	1
2	5	5	5	8
3	0	0	0	0
4	2	4	3	3
5	5	5	4	4
6	7	9	6	7
7	0	0	0	0
8	3	6	4	5
9	4	5	9	11
10	0	0	0	0
11	8	20	10	22
12	0	0	1	1
13	9	10	8	10
14	4	4	2	3
15	5	5	4	4
16	6	6	5	7
17	0	0	0	0
18	4	14	3	5
19	5	8	3	3
20	10	11	9	11
21	3	3	5	5
22	5	6	5	10
23	3	3	9	4

The mean number of single target words and target formulaic sequences clicked and their standard deviations is presented in Table 4.7. The overall analysis of the clicking numbers of single target words and target formulaic sequences show that the participants sought exactly the same glossary help for for both (3.91 clicks). In other words, they did not notice the single words and target words differently. Hence, there is no difference between the unknown single words and unknown formulaic sequences noticed. Therefore there is no need to test the difference between means.

Table 4.7. Descriptive Statistics of Clicking for Glossary Help

Glossary Help	Participants	Mean of. Lexical Items Clicked	Standard Deviation	Standard Error of Mean
No of Words Clicked	23	3.91	4.6	5.04
No of Formulaic Sequences Clicked	23	3.91	5.1	5.39

Keeping in mind the VKS results that the participants know significantly more target single words (11.5/20 = 57.5%) than formulaic sequences (8.5/20 = 42.5%), the probability of noticing the unknown single words may be considered higher than the unknown target formulaic sequence.

Table 4.8 Descriptive Statistics of Clicking Frequency for Glossary Help

Glossary Help	Participants	Mean of Clicking Frequency	Standard Deviation	Standard Error of MeanStandard Deviation
No of Words Clicked	23	5.04	4.6	0.95
No of Formulaic Sequences Clicked	23	5.39	5.1	1.06

In Table 4.8, the clicking frequencies of the participants for requesting glossary help for the target single words and target formulaic sequences are presented. The difference between the means is extremely low indicating that clicking frequencies were very similar for both target single words and target formulaic sequences. Table 4.9 presents Independent Samples t-test for clicking frequencies.

Table 4.9. Paired Samples t-Test for Clicking Frequencies for Glossary Help

Pair-Frequency of clicking on Target Single Words and Target Formulaic Sequences	Paired Differences					T	df
				95% Confidence Interval			
	Mean	S.D.	x	Lower	Upper		
	-0.35	4.35	.81	-3.22	2.53	-0.244	44

Schmidt's noticing hypothesis has been an attractive issue for researchers in recent years. Although still limited in magnitute, most of the available research results have been on grammer and only a few on vocabulary. As the hypothesis may purposefully shifted " *conscious awareness at the level of noticing* (unknown lexical items) *is necessary for language* (vocabulary) *acquisition* (Schmidt, 1990, p.129). This implies that without noticing neither incidental nor intentional learning is possible (Posner, 1992; Velmans, 1991). It is also claimed that in second language acquisition attention to input is necessary for the input to become an intake (Carr and Curran, 1994). Hence it may be deducted that the L2 learners' limited knowledge of formulaic sequences as compared to the single words may be due to their failure to notice them as lexical wholes.

4.4. Relationship between Salient Formulaic Sequences and Glossary Help

Research Question 3. *Will making formulaic sequences salient increase request for glossary help?*

In Test 2, formulaic sequences were made salient. The target single words in the test were left non-salient. In Test 1, all the target lexical items were kept non-salient.

Table 4.10. The Group Statistics for Salient and Non-Salient Formulaic Sequences

Test Taken	Participants	Mean Formulaic Sequences Clicked	Std. Deviation	Standard Error of Mean
Test 1-Non-Salient	23	3.91	3.01	0.63
Test 2-Salient	23	5.70	3.55	0.74

The means, standard deviations, and the standard error of mean are presented in Table 4.10. The mean clicking numbers of the non-salient formulaic sequences (3.91) were less than the salient formulaic sequences (5.70). This result primarily indicates the effect of typograpgical salience on noticing of the unknown formulaic sequences. The difference between the two groups was tested using the Independent Samples Test (Table 4.11). The results indicate that in spite of the observed difference, the t-test value was not significant at ($P<0.05$). This might have arised from primarily from typographic salience by making the formulaic sequences bold and underlined in Test 2..

Table 4.11. Independent Samples t-Test on the Effect of Salience

No FS Clicked (Noticed)	t-test for Equality of Means						
	T	df	Sig(2- tailed)	Mean Diff.	Standard Error Difference	95% Conf. Int.	
						Lower	Upper
	-1.837	44	0.073	-1.78	.97	-3.74	.17

L1 and L2 learners possess different vocabulary knowledge due to different exposures to the target language and the input intensities. In other words native speakers have broader knowledge of formulaic sequences. L2 learners fail to perceive the formulaic sequences and they need to be made aware of that the multi-word lexial item is formulaic sequence. For increasing awareness of the recognition of the form of formulaic sequences of L2 learners, Tullis (1998) suggests these lexical items can be made perceptually salient, such as using bold face, underlining, using color, using asterisks. Similarly Grabinger & Osman-Jouchoux (1996) suggest format changes for capturing readers attention.

Highlighting the target items visible, with the expectation that the participants will percieve them better should not be taken for granted. The use of computer technology for implementing a ‘concurrent noticing approach’ for showing and storing the data of the individual participant’s action taken upon recognizing a salient lexical item is suggested by (Hegelheimer and Chapelle, 2000). In this study this approach will be employed in the form of ‘mouse clicks’.

For enhancing awareness various typographic salience types were used for different language aspects. Chun and Plass (1996) reported that lexical items were made more memorable upon using multimedia annotations, such as diacritics (°) to raise awareness Doughty (1991) used typographic salience to increase awareness of relative clause formation and but reported that there was no apparent effect of salience. de Ridder (1999, 2000) reported that L2 learners clicked significantly more on a text with highlighted hyperlings than the text without highlights. Furthermore, she found out that increased clicking on the salient items did not have adverse effect on L2 learners reading speed or comprehension.

Although the results in this experiment were not statistically significant, they could be considered close to the findings of de Ridder (2002) reported that highlighting glosses received statistically significant clicks than the non-highlighted links.

4.5. Relationship between Salient Formulaic Sequences and Reading Comprehension

Research Question 4. *Will the participants understand the reading passage better and do more correct comprehension questions when formulaic sequences are made salient in the text?*

The research question four was intended to investigate the effect of making salience on comprehension measured by a post test consisting 20 T/F questions. It was expected that the salience would be associated with increased comprehension of the text measured by the total proportion of comprehension questions answered correctly. The means, standard deviations and standard errors were presented for the salience and non-salience groups in Table 4.12. The mean number of correct answers indicate that comprehension was slightly higher in Test 2 than in Test 1. The closeness of the means indicate that the two groups demonstrate similar comprehension performance. More specifically, making the formulaic sequences salient did not seem to be effective significantly. This may be due to the fact that these upper intermediate students were exclusively ELT majoring students more or less having similar vocabulary knowledge and those deficient of some words sought glossary help by clicking more on the formulaic sequences.

Table 4.12. The Group Statistics for Comprehension-Post Test

No of Correct Answeres	n	Mean	Std. Deviation	S_X
Test 1-FS-Non-Salient	23	15.35	2.14	0.45
Test 2-FS-Salient	23	16.43	1.95	0.41

(P<0.05)

The means were compared by Independent Samples Test (Table 4.13). The t-value obtained indicate that the means were not statistically significantly different. This finding correlates with previous studies.

In a study aimed at seeking the effect of highlighting on incidental vocabulary learning and comprehension, de Ridder (2002) found out that highlighting increased comprehension scores compared to the non-highlighted text but the difference was not statistically significant.

Table 4.13. Independent Samples t-Test – Correct Answers (Comprehension)

No Correct Answers in Post Test (Comprehension	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Conf. Int.	
	F	Sig	T	df	Sig (2- tailed)	Mean Diff.	S_X Diff..	Lower	Upper
	1.652	.205	-1.798	44	0.079	-1.09	.60	-2.31	.13

(P<0.05)

Doughty (1991) used typographic salience to increase awareness in relative clause formation and concluded that the salience effect was not apparent. In another study, Davis and Lyman-Hager (1997) reported that for the intermediate French learning students of L1 speakers of English, direct glossary help alone failed to improve their comprehension

It would be intresting to know the magnitute of the vocabulary knowledge in terms of word families or lexical items. Laufer (1997) reported her previous research on EFL students' vocabulary level and reading comprehension. The students were divided into five groups those having below 2000 word families, those having 2000, those having 3000,

those having 4000 and those having 5000. The results were highly interesting. The difference between the reading comprehension scores of the groups having 2000 and 3000 word families were significantly different. The mean score of the group having 4000 word families was higher than the group having 3000 word families but the difference was not statistically significant. Similarly the difference between the groups possessing 5000 and 4000 word families was not significant. Laufer concludes that the turning point of vocabulary size for reading comprehension is about 3000 word families which constitutes to 4800 lexical items (conversion is made according to Nation 1983).

Hence, in this study the participants' vocabulary knowledge may be exceeding the treshold of 3000 word families. Laufer (1997) researched further and found out that the knowledge of 3000 word families (equivalent of 4.800 lexical items) result in a comprehension base score of 56 %. And an increase of 1000 word families induced an increase of 7% in the comprehension score.

The results can not be generalized for other levels of learners. Beginners need to be directly taught the 3.000 most frequent words before the incidental learning process because as Coady stresses vocabulary learning is achieved primarily through reading. Cobb and Horst (2004) verifies Coady by saying "many learners are simply unlikely ever to meet a large proportion of the lexicon. The vast majority of English words are found mainly in written texts, while a relatively small handful are encountered in daily conversation and watching television. This means that for the many learners who achieve conversational fluency in an L2 rather than full literacy, the vast majority of words are simply inaccessible for learning through naturalistic acquisition." (p. 17) In their research, they also find that the minimal ratio of known to unknown words for both reliable comprehension and new acquision is at least 20: 1, or in other words when at least 95% of the running words are known.

CHAPTER V

CONCLUSIONS

5.1. Introduction

Vocabulary acquisition in ESL has always been a challanging issue for many researchers due to differential learning processes of single words and formulaic sequences. It was clearly verified by a number of researchers that single word lexical units are preferentially learned and used in contrast to formulaic sequences due to difficulty in their acquisition by L2 learners (Schmitt and Carter, 2004).

The main objective of the study was to assess the vocabulary knowledge of undergraduate ELT majoring students in relation to formulaic sequences and their single word equivalents. The study was designed to assess whether participants notice unknown lexical items and find out whether they notice unknown formulaic sequences or their equivalent single words more. Finally, the study intended to find out whether typographical salience of formulaic sequences affected noticing of unknown formulaic sequences which in return increase comprehension as a result of glossary help. This chapter summarizes the findings and discusses possible pedagogical implications. This chapter also points to the limitations of the study that might help future researchers and provides further research suggestions.

5.2. Conclusions

This study clearly indicates that upper intermediate students know less formulaic sequences than their single word equivalents. The participants mean VKS scores may be regarded as fairly good vocabulary knowledge (11.5/20 single words and 7.9/20 formulaic sequences). Looking at the empty side of the glass, the participants do not know on the average 8.5/20 target single words constituting 42.5 %. The picture is worse for the formulaic sequence that the participants fail know 12.1/20 of them making up 60.5%. The vocabulary deficit of the upper intermediate participants need to be improved and more emphasis must be devoted to the acquisition of formulaic sequences. Many researchers assert that formulaic language of L2 does not develop the same as L1 learners for whom

incidental learning via reading is highly effective and exposure to target language is intense since childhood (Nagy et al, 1985).

It has been asserted that in English language, the knowledge of the most frequent word families is an important criteria for proficiency of L2 speakers. Laufer (1997) in her study, '*How much lexis is necessary for reading comprehension?',* claims that knowledge of 3000 word families is a threshold for reading comprehension and progress in vocabulary size above 3000 induces incremental increase in reading comprehension scores.

An English speaking undergraduate university student's vocabulary knowledge is estimated to be 17,000 word families (Goulden et al, 1990). Takala (1984) reports that in the Finnish school system, a graduate student knows approximately 1,500 words over seven years of study. Nation (1990) claims that 2,000 most frequent words cover approximately 87% of the words in an average text and suggests that these words should be taught intensively, whereas rare words are not worth teaching due to the limited class time.

It may be worth noting the great variation among the participants with respect to mean VKS scores as given in Table 4.3. The knowledge of target single words and formulaic sequences, as drawn by Bishop (2004) from Collins Wordbanks Wtitten Subcorpus containing 45 million lexical items, indicate great variation among the participants. The ranges of target single word (18/20 and 5/20) and formulaic sequence (18/20 and 3/20) knowledge scores are extremely wide and is worth investigating.

The result of the study on the participants' request for glossary help for unknown single words and formulaic sequences shows that the participants fail to notice the unknown lexical items. This is primarily drived from the number of clicks received on the target single words (mean: 3.91) and target formulaic sequences (mean: 3.91). In other words there is no difference between the unknown single words and unknown formulaic sequence noticed. However, keeping in mind the VKS results that the participants know significantly more target single words (11.5/20 = 57.5%) than formulaic sequences (8.5/20 = 42.5%), the probability of noticing the unknown single words may be considered higher than the unknown target formulaic sequence.

According to Schmidt's Noticing Hypothesis " conscious awareness at the level of noticing is necessary for language learning" (Scmidt, 1995, p. 260). Group 1 offered the non-salient version of the text on 'Global Warming', sought glossary help for 3.9 unknown target single words and 3.9 unknown target formulaic sequences.

The third research was the investigation on the effect of salience by bold face and underlining of the formulaic sequences text on noticing of uestion indicate that salience improves noticing of formulaic sequences although the finding is not statistically significant. In other words, salience needs to be studied further to make it an effective tool for the acquisition of lexical items. The fourth research question was intended to find cues whether salience of formulaic sequences increases noticing, resulting in more glossary help request and eventually increases comprehension. The results failed to show any effect due to the fact that the post test results were similar for the two groups provided with texts containing salient and non-salient formulaic sequences.

5.3. Implications of the Study

The pedagogical implication of this study my be as follows:

a) This study indicated that the vocabulary knowledge of the upper intermediate ELT fourth semester undergraduates, as measured by the VKS, might be regarded as fairly satisfactory but highly variable among themselves. In other words there were participants with target single words ranging between 5/20 and 18/20; formulaic sequences ranging between 3/20 and 18/20. Those having low scores need to be improved by subjecting them to intensive task based vocabulary acquisition. Similarly, Coady and Huckin (1997) emhasizes on the significance of explicit teaching of certain catagories of vocabulary using a large number of techniques including direct memorization of the most frequently occurring lexical items in an early stage of vocabulary acquisition. In the case of the upper intermediate students having more than 3.000 vocabulary may be provided with more reading tasks for incidental learning (Laufer, 1991).

b) Nation (2001) claims that noticing, retreiving and generating are the necessary pschological processes for succesful vocabulary learning. She further emphasizes that noticing can occur when a word is highlighted as being salient in text input or in discussion of the text. Looking up a word in a dictionary, guessing from deliberately studying a word or having a word explained are possible factors reading to noticing. Therefore for effective acquisition process, the targeted formulaic sequences should be highlighted for raising awareness and increasing noticing. However, in this study it was the participants requested for glossary help for the target formulaic sequences with the same intensity as the target single words. Since their formulaic sequence knowledge is inferior to single words, the frequently occurring formulaic sequences may be highlighted for increased noticing which is an essential prerequisite of learning .

c) Formulaic sequences may be emphasized in order to increase proficiency because they constitute 58% of spoken and 52 % of written (Erman and Warren, 2000). For gaining proficiency of English L2 learners should master formulaic sequences. The high-school students intending to proceed to study English Language in the universities are actaully learning quite a number of pharasal verbs, idioms and other forms of formulaic sequences through intentional learning. For futher advancement in proficiency the process should continue in the undergradute level by supplementing it with incidental learning through reading.

d) For beginners, intentional learning of most frequent formulaic sequences via task based approaches may be more effective (Laufer, 1997; Coady, 1997)

5.4. Limitations of the Study

The participants selected were volunteers and they were not motivated by any payment or obligation to a classroom task. Hence, it was observed that some students were

less cooperative and wanted to get it over with. The study would have been more informative more participants could have been included in the groups.

The number of target single words and the target formulaic sequences could have been increased in order to assess their vocabulary knowledge better. Mouse click counts may not necessarily mean that the partipants necessarily need glossary help. Some participants may have clicked on the target lexical items for curiousity.

5.5. Suggestions for Further Research

This study indicates that there is a great variability among the upper intermediate participants studying ELT. It may be further researched what type of vocabulary they know, which lexical items they encounter problems in acquisition, what type of vocabulary they need as a priority for mastering their proficiency as future ELT teachers and what methods to employ for for improving vocabulary acquisition.

Further research is needed because there are no clear-cut practical results of typographic salience on noticing. There are limited studies on the practical use of noticing hypothesis, especially on vocabulary. This study is one of the few studies on noticing formulaic sequences because a number of noticing reseach has been on grammar.

This study shows that the participants composed of a group of upper intermediate undergraduate university students notice unknown formulaic sequences the same as unknown single words. Schmidt (1990) claims that noticing is essential for learning and for vocabulary build-up means of awareness raising techniques needs to be researched.

Although the effect of salience in this study is found statistically insignificant, in reference to previous research findings salience may be of great help making the formulaic sequences more noticible. However more research is required in studying different aspects and interactions regarding its role in noticing, comprehension and acquisition of vocabulary at large.

The results of this study on noticing formulaic sequences, may not have produce solid results probably due to the small sample size and small number of target lexical items (single words and their equvalent formulaic sequences). Therefore, a study focusing on

larger population from different level proficiency might may prove more informative and yield more solid results.

Willis (1996) draws attention on the importance of task based learning (TBL) in L2 acquisition. It would be an important researchable issue to study TBL on the acquisition of formulaic sequences at the beginner, intermediate and advanced levels.

REFERENCES

Abel, B. (2003), "English idioms in the first language and second language lexicon: A dual representation approach", *Second Language Research*, 19(4), 329–358.

Adolphs, S. & Durov, V. (2004), "Social-cultural integration and development of formulaic sequences", In N.Schmitt (ed.), Formulaic *Sequences Acquisition, Processing and Use,* (pp.107-126), Benjamins, Amsterdam.

Arnaud, P. J. L. & Savingnon, S. J. (1997), "Rare words, complex lexical units and the advanced learner.", In J. Coady & T. Huckin (eds.), *Second Language Vocabulary Acquisition,* (pp. 157-173), Cambridge University.

Bauer, L. & Nation, I. S. P. (1993), "Word families.", *International Journal of Lexicography*, 6 (3), 1-27.

Bishop, H. (2004), "Do Second Language Readers Notice Formulaic Sequences?", *Ph. D. Dissertation*, University of Wisconsin.

Bogaards, P. (2001), "Lexical units and the learning of foreign language vocabulary.", *SSLA*, 23: 321-343.

Carlson, R. A. & Dulany, D. E. (1985), "Conscious attention and abstraction in concept learning.", *Journal of Experimental Psychology: Learning, Memory and Cognition*, 11: 45-58.

Carr, T. H. & Curran, T. (1994), "Cognitive factors in learning about structured sequences: applications to syntax.", *Studies in Second Language Acquisition*. 16: 205-230.

Carter, R. (1987), *Vocabulary: Applied Linguistic Perspectives*, London: Allen & Unwin.

Carter, R. (1998), *Vocabulary: Applied Linguistic Perspectives (2nd ed.),* London: Allen & Unwin.

Coady, J. & Huckin, T. (1997), *Second Language Vocabulary Acquisition: A Rationale for Pedagogy*, Cambridge: Cambridge University Press.

Cobb, T. & Horst, M. (2004), "Is there room for an academic word list in French?", In. P. Bogaards & B. Laufer(eds.) *Vocabulary in a Second Language: Selection, Acquisition and Testing,* (pp. 15-38), John Benjamins Publishing Company.

Conklin, K. & Schmitt, N. (2007), "Formulaic sequences: are they processed more quickly than non-formulaic language by native and nonnative speakers?", *Applied Linguistics*, 1-18.

Chun, D. & Plass, J. (1996), "Effects of multimedia annotations on vocabulary acquisition.", *The Modern Language Journal*, 80(2), 183-198.

Danielsson, P. (2007). "What constitutes a unit of analysis in language?", (http://www.linguistics-online.de/31-07/danielsson.html/), 5th of December, 2007.

Davis, J. N. & Lyman-Hager, M. A. (1997), "Computers and L2 reading: student performance, student attitudes.", *Foreign Language Annuals*, 30(1), 58-72.

de Bot, K.(1996), "The psycholinguistics of the output hypothesis.", *Language Learning*, 46(3), 529-555

de Bot, K., Paribakht, T. S. & Wesche, M. (1997), "Towards a lexical processing model for the study of second language vocabulary acquisition.", *SSLA*, 19: 309-329.

De Cook, S. (2000), "Repetitive phrasal chunkiness and advanced EFT speech and writing.", In C. Mair and M. Hundt(eds.) *Corpus Linguistic and Linguistic Theory,* (pp 51-68), Amsterdam: Rodopi.

de Ridder, I.(2002), "Visible and invisible links: Does the highlighting of hyperlinks affect incidental vocabulary learning, text comprehension, and the reading process?", *Language Learning and Technology*, 6: 123-146.

de Ridder, I.(2000), "Are we still reading or just following links? Highlights in CALL materials and their impact on the reading process.", Computer *Assisted Language Learning,* 13: 183-195.

de Ridder, I.(1999), "Are we conditioned to follow links? Highlights in CALL materials and their impact on the reading process*.", Computer Assisted Language Learning,* 13(2), 195-216.

Doughty, C. (1991), "Second language instruction does make a difference: Evidence from an empirical study of relativization.", *Studies in Second Language Acquisition*, 13: 431- 469.

Ellis, R. (1994), *The Study of Second Language Acquisition*, Oxford: Oxford University Press.

Ellis, R. (1995), "Modified oral input and the acquisition of word meanings.", *Applied Linguistics,* 16(4), 409-441.

Ellis, R. & He, X. (1999), "The roles of modified input and output in the incidental acquisition of word meanings.", *SSLA*, 21: 285-301.

Ellis, R. (2003), *Task-based Language Learning and Teaching*, Oxford University Press.

Ellis, N. C. & Sinclair, S. (1996), "Working memory in the acquisition of vocabulary and syntax: Putting language in good order.", *Quarterly Journal of Experimental Psychology*, 49(A), 234-250.

Erman, B. & Warren, B. (2000), "The idiom principle and open-choice principle.", *Text,* 20: 29-62.

Fisk, A. D. & Schneider, W. (1984), "Memory as a function of attention, level of processing, and automatization.", *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 10: 181-197.

Fraser, C. A. (1999), "Lexical processing, strategy use and vocabulary learning true reading.", *SSLA*, 21: 225-241.

Gibbs, R., Bogadanovich, J.& Skyes, J. (1997), "Metaphors in idiom comprehension.", *Journal of Memory and Language,* 37: 141-154.

Grabinger, R.S. & Osman-Jouchoux, R. (1996), "Designing screen for learning", In H. van Oostendorp & S. de Mul (eds.), *Cognitive aspects of electronic text processing*. Norwood, NJ: Ablex Publishing Corporation, 58: 181-212

Granger, S. (1998), "Prefabricated patterns in advanced EFL writing: Collocations and formulae.", In A. Cowie (ed.) , *Phraseology. Analysis and Applications,* (pp 145-160), Oxford: Oxford University Press.

Graves, M. (1987), "The roles of instruction in fostering vocabulary development.", In M. McKeown & M. Curtis(eds.), *The Nature of Vocabulary Acquisition*, Hillsdale, NJ: Lawrence Erlbaum.

Goulden, R., Nation, P. & Read, J. (1990), "How large can a receptive vocabulary be?", *Applied Linguistics*, 11(4), 341-363.

Hatch, E. & Brown, C. (1995*), Vocabulary, Semantics and Language Education*. New York: Cambridge University Press.

Hegelheimer, V. (1998), "Effects of textual glosses and sentence-level audio glosses on online reading comprehension and vocabulary recall.", *Unpublished doctoral dissertation*, Department of Educational Psychology, College of Education, University of Illinois, Urbana, IL.

Hegelheimer, V.& Chapelle, C. (2000), "Methodological issues in research on learner-computer interactions in CALL.", *Language Learning and Technology*, 4: 41-59.

Henriksen, B. & Haastrup, K. (1998), "Describing learners' lexical competence across tasks and over time: A focus on research design.", In K. Haastrup& Å.Viberg(eds.), *Perspectives on Lexical Acquisition in a Second Language*, Travaux de L'Institut de Linguistique de Lund 38, Lund: Lund University Press.

Howarth, P. (1998), "The Phraseology of learner's academic writing.", In A.Cowie(ed.), *Phraseolgy: Theory, Analysis and Application*, (pp161-186), Oxford: Oxford Univerversity Press.

Huckin, T. & Coady, J. (1999), "Incidental vocabulary acquisition in a second language: A review.", *SSLA*, 21: 181-193.

Hulstijn, J. H. (2001), "Intentional and incidental second language vocabulary learning: A reappraisal of elaboration, rehersal and automaticity.", In R. Robinson(ed.), *Cognition and Second Language Instruction,* New York: Cambridge University Press.

Ivanaka, T. & Takatsuka, S. (2007), "Influences of attention and noticing on second language acquisition.", *Languages & Literatures, English Language & Literature Fields*, 2: 21-30, Okayama University.

Irujo, S. (1986), "Don't put your leg in your mouth: Transfer in the acquisition of idioms in a second language.", *TESOL Quarterly*, 20: 287-304.

Irujo, S. (1993), "Steering clear: Avoidance in the production of idioms.", *International Review of Applied Linguistics*, 21: 205-219.

Jenkins, J.R., Stein, M. L. & Wyesocki, K. (1984), "Learning vocabulary through reading.", American *Educational Research Journal*, 21(4), 767-787.

Jiang, N. (2000), "Lexical representation and development in a second language.", *Applied Linguistics*, 21(1), 47-77.

Jourdenais, R., Ota, M., Stauffer, S., Boyson, B. & Doughty, C. (1995), "Does textual enhancement promote noticing ? A think-aloud protocol analysis.", In: R. Schmitt (ed.), *Attention and Awareness in Foreign Language Learning, (*pp: 183-216), . University of Hawai'i

Kellerman, E. (1977), "Towards a characterization of the strategy of transfer in second language learning.", *International Studies Bulletin,* 2: 37-145.

Kihlstrom, J. (1984), "Conscious, subconscious and unconscious: A cognitive perspective.", In K. Bowers & D. Meichenbaum(eds.), *The Unconscious Reconsidered*, (pp 149-211), New York: Wiley.

Kirsner, K. (1994), "Implicit processes in second language learning.", In N. Ellis(ed.), *Implicit and Explicit Learning of Languages*, London: Academic Press.

Kupier, K. (1996), *Smooth Takers. Vol. 1: Studies in Everyday Communication*, Hillside NJ, Lawrence Elbaum associates.

Laufer, B. (1991), "How much lexis is necessary for reading comprehension?", In P. J. L. Arnaud & H. Bejoint(eds.), *Vocabulary and Applied Linguistics, (pp* 126-132), Basingstoke: Macmillan.

Laufer, B. (1997), "The lexical plight in second language reading: words you don't know, words you think you know and words you can't guess." In J. Coady & T. Huckin (eds.), Second *Language Vocabulary Acquisition*, (pp. 20-34), Cambridge University Press.

Leeser, M. J. (2007), "Learner-based factors in L2 reading comprehension and processing grammatical form: topic familiarity and working memory.", *Language Learning*, 52(4), 229–270.

Levelt, W. J. M. (1989), "Speaking: From intention to articulation.", Cambridge, MA: MIT Press.

Levelt, W. J. M. (1999), " Models of word production.", *Trends in Cognitive Science*. 3(6), 223-232.

Lewis, M. (1993), *The Lexical Approach*, Hove, England: LTP Publications.

Lindgren, E. & Sullivan, K.P.H. (2003)," Stimulated recall as a trigger for increasing noticing and language awareness in the L2 writing class: A case study of two young female writers.", *Language Awareness,* 12(3-4), 172-186.

Logan, G. D. (1988), "Toward an instance theory of automatization.", Psychological *Review*, 95: 492-527.

McCarthy, M, & Carter, R. (1997), "Written and spoken vocabulary.", In. N.Schmitt & M. McCarty (eds.), *Vocabulary: Description, Acquisition and Pedagogy*, (pp 20-39), Cambridge: Cambridge University Press.

Mukkatesh, L. (1986)," Persistence in fossilization.", *IRAL*, 24: 187-203.

Murphy, S.A. (2002), "On the Role of Input through Songs, Reading, and Film: A test of Schmidt's Noticing Hypothesis.", Online Article, Google Scholar, 1-23

Nagy, W. E. & Anderson, R. C. (1984), "How many words are there in printed English?", *Reading Research Quarterly*, 19: 304-330.

Nagy, W. E., Herman, P.A. & Anderson, R. C. (1985), "Learning words from context.", *Reading Research Quarterly*, 20 (2): 233-253

Nagy, W. E. & Herman, P.A. (1987), "Breadth and depth of vocabulary knowledge.", In M. McKeown & M. Curtis(eds.), *The Nature of Vocabulary Acquisition*. Hillsdale, NJ: Lawrence Erlbaum.

Nagy, W. E. & Herman, P.A. (1997), "Vocabulary learning through extensive reading.", In J. Coady & T. Huckin (eds.), *Second Language Vocabulary Acquisition: A Rationale for Pedagogy*, (pp. 225-237), Cambridge: Cambridge University Press.

Nation, I. S. P. (1990), *Teaching and Learning Vocabulary*, New York: Newbury House.

Nation, I. S. P. (2001), *Learning Vocabulary in Another Language*, Cambridge University Press.

Nation, I. S. P. & Waring, R. (1997), "Vocabulary size, text coverage and word lists.", In N. Schmitt & M. McCarty (eds.), *Vocabulary: Description, Acquisition and Pedagogy* , (pp. 6-19), Cambridge University Press.

Nattinger, J. R. (1988), "Some current trends in vocabulary teaching.", In R. Carter & M. McCarty (eds.), *Vocabulary and Language Teaching*, (pp.62-82), London: Longman.

Nissen, M., & Bullemer, P. (1987), "Attentional requirements of learning: Evidence from performance measures.", *Cognitive Psychology*, 19: 1-32.

Paribakht, T. S. & Wesche, M. (1993), "The relationship between reading comprehension and second language development in a comprehension-based ESL program.", *TESL Canada Journal*, 11: 9-29.

Paribakht, T. S. & Wesche, M. (1996), "Enhancing vocabulary acquisition through reading: A hierarchy of text-related exercise types.", *Canadian Modern Language Journal,* 155-178.

Paribakht, T. S. & Wesche, M. (1997), "Vocabulary enhancement activities and reading for meaning in second language vocabulary.", In Coady & Huckin(eds.), *Second Language Vocabulary Acquisition : A Rationale for Pedagogy*, 174-201.

Pawley, A. & Syder, A. H.(1983), "Two puzzles of linguistic theory: nativelike selection and nativelike fluency.", In. J. C. Richards & R.W. Schmidt (eds.), *Language and Communication,* (pp.197–227), London, Longman.

Posner, M. I.(1992), "Attention as a cognitive and neural system.", *Current Directions in Psychological Science*, 1: 11–14.

Pulido, D. (2007), "The effect of topic familiarity and passage sight vocabulary on L2 lexical inferencing and retention through reading.", *Applied Linguistics* 28(1), 66-86.

Pulido, D. (2007), "The relationship between the text comprehension and second language incidental vocabulary acquisition: a matter of topic familiarity.", *Language Learning,* 57(1), 155–199.

Richards, J. (1976), "The role of vocabulary teaching.", *TESOL Quarterly*, 10(1), 77-89.

Robinson, P. (1995), "Attention, memory and noticing hypothesis.", *Language Learning*, 45(2), 283-331.

Schauer, G.A. (2006), "Pragmatic awareness in ESL and EFL contexts: contrasts and development.", *Language Learning*, 56(2), 269-318.

Schmidt, R. W. (1990), "The role of consciousness in second language learning.", *Applied Linguistics*, 11: 129-158.

Schmidt, R. W. (1993), "Attention and second language acquisition." *Annual Review of Applied Linguistics,* 13: 206-226.

Schmidt, R. W. (1995), *Attention and Awareness in Foreign Language Learning*, Honululu, Hawaii: Second Language Teaching and Curriculum Center, University of Hawaii.

Schmidt, R. W. (2001), "Attention.", In P. Robbinson (ed.), *Cognition and Second Language Instruction*, (pp. 3-32), Cambridge University Press.

Schmitt, N. & Zimmermen, C. B. (2002), "Derivative word forms. What do learners know?", *TESOL Quarterly*, 36(2), 145-172.

Schmitt, N. & Dörnyei, Z. (2004), "Knowledge and acquisition of formulaic sequences.", In N. Schmitt (ed.), *Formulaic Sequences Acquisition, Processing and Use*, (pp. 55-86), Amsterdam: John Benjamins.

Schmitt, N. & Underwood, G. (2004), "Exploring the processing of formulaic sequences.", In N.Schmitt (ed.), *Formulaic Sequences . Acquisition, Processing and Use,* (pp. 173-190), Amsterdam: John Benjamins Publishing Company.

Schmitt, N. & Carter, R. (2004), "Formulaic sequences in action: An introduction.", In N. Schmitt (ed.), *Formulaic Sequences Acquisition, Processing and Use*, (pp. 1-22), Amsterdam: John Benjamins.

Schmitt, N., Grandage, S., & Adolphs, S. (2004), "Are corpus-derived recurrent clusters psycholinguistically valid?", In N. Schmitt(ed.), *Formulaic Sequences Acquisition, Processing and Use*, (pp. 127-152), Amsterdam: John Benjamins.

Shiffrin, R. M. & Scheider, W. (1977), "Controlled and automatic human information processing II: Perceptual learning, automatic attending, and a general theory.", *Psychological Review*, 84: 127-190.

Skehan, P. (1998), *A Cognitive Approach to Language Learning*. Oxford: Oxford University Press.

Slobin, D. (1985), "Crosslinguistic evidence for the language-making capacity", In D. Slobin(ed.), *The Crosslinguistic Study of Language Acquisition.Vol. 2: Theoretical Issues.* Hillsdale, NJ: Lawrence Erlbaum.

Takala, S. (1984), "Evaluation of students' knowledge of vocabulary in the Finnish Comprehensive School.", Reports from the Institute of Educational Research. *University of Jyväskylä*, no. 350.

Tomlin, R. & Villa, V. (1994), "Attention in cognitive science and second language acquisition.", *Studies in Second Language Acquisition*, 16: 183-203.

Truscott, J. (1998), "Noticing in second language acquisition: A critical review.", *Second Language Research,* 14(2), 103–135.

Tullis, T.S. (1998), "Screen Design", In M. Halender(ed.), *Hanbook of Human-computer Interaction*, (pp. 377-411), Amsterdam: Elsevier.

Underwood G., Schmitt, N. & Galpin, A. (2004), "The eyes have it: An eye-movement study into the processing of formulaic sequences.", In N. Schmitt (ed.), *Formulaic Sequences*, (pp. 155-172), Amsterdam: John Benjamins

Velmans, M. (1991), "Is human information processing conscious?", *Behavioral and Brain Sciences,* 14: 651-669.

Wesche, M. & Paribakht, T. S. (1999), "Introduction", *SSLA,* 21: 175-180.

Wesche, M. & Paribakht, T. S. (2000), "Reading-based exercises in second language vocabulary learning: An introspective study.", *The Modern Language Journal*, 84: 196-213.

Willis, J., (1996), *A Framework for Task-Based Learning*, Harlow: Longman.

Wray, A. (2000), "Formulaic Sequences in second language teaching: Principle and practice." , *Applied Linguistics,* 21(4), 463-489.

Wray, A. (2002), *Formulaic Language and Lexicon*, Cambridge: Cambridge University Press.

Wray, A. & Perkins, M. R. (2000), "The functions of formulaic language: an integrated model." *Language and Communication*, 20: 1-28

Wood, D. (2002), "Formulaic language in acquisition and production: Implications for teaching.", *TESL Canada Journal,* 20: 1-15.

Zimmerman, C. B. (1997), "Historical trends in second language vocabulary instruction." In J. Coady & T. Huckin (eds.), *Second Language Vocabulary Acquisition: A Rationale for Pedagogy*, 5-19, Cambridge: Cambridge University Press.

APPENDICES

Appendix I

Vocabulary Knowledge Scale (Vocabulary Pre-test)

1/ 40 Which answer best matches your knowledge of the following item?

Eliminate

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

2/ 40 Which answer best matches your knowledge of the following item?

Endure

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

3/ 40 Which answer best matches your knowledge of the following item?

Expatiate

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

4/ 40 Which answer best matches your knowledge of the following item?

Discern

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

5/ 40 Which answer best matches your knowledge of the following item?

Consequences

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

6/ 40 Which answer best matches your knowledge of the following item?

Distinguish

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

7/ 40 Which answer best matches your knowledge of the following item?

Outweigh

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

8/ 40 Which answer best matches your knowledge of the following item?

Accumulate

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

9/ 40 Which answer best matches your knowledge of the following item?

Ongoing

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

10/ 40 Which answer best matches your knowledge of the following item?

Implement

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

11/ 40 Which answer best matches your knowledge of the following item?

Moderate

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e)I can use this item in a sentence. (Write a sentence).

12/ 40 Which answer best matches your knowledge of the following item?

Defer

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

13/ 40 Which answer best matches your knowledge of the following item?

Obviate

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

14/ 40 Which answer best matches your knowledge of the following item?

Abolish

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

15/ 40 Which answer best matches your knowledge of the following item?

Concede

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

16/ 40 Which answer best matches your knowledge of the following item?

Persuasive

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

17/ 40 Which answer best matches your knowledge of the following item?

Perspicacity

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

18/ 40 Which answer best matches your knowledge of the following item?

Determine

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

19/ 40 Which answer best matches your knowledge of the following item?

Excessive

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

20/ 40 Which answer best matches your knowledge of the following item?

Disrupt

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

21/ 40 Which answer best matches your knowledge of the following item?

Do away with

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

22/ 40 Which answer best matches your knowledge of the following item?

Put up with

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

23/ 40 Which answer best matches your knowledge of the following item?

Hold forth

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

24/ 40 Which answer best matches your knowledge of the following item?

Catch on to

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

25/ 40 Which answer best matches your knowledge of the following item?

Fall out

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

26/ 40 Which answer best matches your knowledge of the following item?

Have an inkling of

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

f)

27/ 40 Which answer best matches your knowledge of the following item?

Loom larger than

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

28/ 40 Which answer best matches your knowledge of the following item?

Pile up

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

29/ 40 Which answer best matches your knowledge of the following item?

Under way

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

30/ 40 Which answer best matches your knowledge of the following item?

Carry out

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

31/ 40 Which answer best matches your knowledge of the following item?

Cut down on

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

32/ 40 Which answer best matches your knowledge of the following item?

Put off

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

33/ 40 Which answer best matches your knowledge of the following item?

Cut off

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

34/ 40 Which answer best matches your knowledge of the following item?

Cut out

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

35/ 40 Which answer best matches your knowledge of the following item?

Come to terms with

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

36/ 40 Which answer best matches your knowledge of the following item?

Silver tongued

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

37/ 40 Which answer best matches your knowledge of the following item?

Clearness of mind

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

38/ 40 Which answer best matches your knowledge of the following item?

Come up with

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I <u>think</u> it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

39/ 40 Which answer best matches your knowledge of the following item?

Over the top

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

40/ 40 Which answer best matches your knowledge of the following item?

Throw into disorder

a) I don't remember having seen this item before.

b) I have seen this item before, but I don't know what it means.

c) I have seen this item before, and I think it means… (Write synonym).

d) I know this item. It means … (Write synonym).

e) I can use this item in a sentence. (Write a sentence).

APPENDIX II. Non-Salient Version of the Text on 'Global Warming'

Could global warming do away with life on earth by making the world so hot that life cannot be supported? Perhaps not, but the ice at the north and south poles could melt. This melting will flood coastal parts of countries where millions of people live. Countless thousands could be driven from their homes to become refugees, and this large number of people who have lost their homes would disrupt the activities of everyday life. It could create great political problems. Also, global warming will change the climate, and this will not improve food production. Dry areas will become wetter and wet areas will have to put up with drought. Less food will be produced and there will be increased danger of starvation. Thus global warming is seen by some to be a very real threat, but how does it happen?

When you walk into a greenhouse on a sunny day, it is hot because the glass traps the sun's heat. The earth's atmosphere can do the same thing. Greenhouse gases, such as carbon dioxide, in the atmosphere trap the sun's heat and stop the heat from being radiated back into space. These gases, which come from cars and factories, make the earth warmer - in other words they cause global warming.

Writers in newspapers and magazines expatiate on the seriousness of global warming. It is starting so slowly so that we may not catch on to what is happening until it is too late. However if the problem is not noticed, it may get so bad that there will be serious fall out that cannot be undone.

Global warming is a slow development so it is very hard to have an inkling of what change might be catastrophic and what change won't. Given the slowness of the change, what are politicians more likely to be concerned with? In the short term, unchecked production of greenhouse gases leads to increased economic production. Any serious reduction of greenhouse gases will make energy more expensive and reduce economic growth. Politicians need votes in the short term, so which choice will be seen as the most important - short term economic gain or safety of the environment? It is most likely that, in politicians' minds, short term economic gain will outweigh long term safety for the environment.

If governments start to implement sensible environmental strategies, at the very least the arrival of the coming environmental disaster can be delayed. Is it enough, however, just too moderate greenhouse gas emissions? When we reduce emissions, we do not solve the problem. We just defer the out coming global crisis until a later time. In the long term, we need to stop greenhouse emissions completely. But how do we go about it? How are we to completely obviate the production of greenhouse gases when they are a result of demand for cheap energy? Cheap energy means industry can make more money. What politician will tell companies to cut out the production of greenhouse gases if it means more expensive power for factories, and it results in a slowdown for the economy? Politicians are going to have to concede the strong probability that they will lose their jobs if they take this position. This is a serious problem.

Another problem is that it is not yet clear to all that global warming is actually happening. Although scientific information is starting to pile up supporting the argument that global warming is ongoing , its effects are not clear enough so that everyone can see them. Who can help people to wake up to the danger before it is too late? In this respect both scientists and politicians have important parts to play. Politicians need to be able to make people do things they do not want to. In order to do this, they must speak clearly and strongly about the problem so that average people will understand what is happening, and that they will also understand what will happen if they do nothing. So these politicians must be silver tongued speakers to do this. Scientists, too, need to show great perspicacity , since they are the ones who must ignore all the passion and find solutions to these very complicated problems. These scientists must come up with those practical solutions that the politicians will then have to get people to accept. Is this really too much to ask? Is it so over the top to tell people they must reduce their standard of living? Maybe it is, but we really do not have any choice.

APPENDIX III. Salient Version of the Text on 'Global Warming'

Could global warming **do away with** life on earth by making the world so hot that life cannot be supported? Perhaps not, but the ice at the north and south poles could melt. This melting will flood coastal parts of countries where millions of people live. Countless thousands could be driven from their homes to become refugees, and this large number of people who have lost their homes would disrupt the activities of everyday life. It could create great political problems. Also, global warming will change the climate, and this will not improve food production. Dry areas will become wetter and wet areas will have to **put up with** drought. Less food will be produced and there will be increased danger of starvation. Thus global warming is seen by some to be a very real threat, but how does it happen?

When you walk into a greenhouse on a sunny day, it is hot because the glass traps the sun's heat. The earth's atmosphere can do the same thing. Greenhouse gases, such as carbon dioxide, in the atmosphere trap the sun's heat and stop the heat from being radiated back into space. These gases, which come from cars and factories, make the earth warmer - in other words they cause global warming.

Writers in newspapers and magazines expatiate on the seriousness of global warming. It is starting so slowly so that we may not **catch on to** what is happening until it is too late. However if the problem is not noticed, it may get so bad that there will be serious **fall out** that cannot be undone.

Global warming is a slow development so it is very hard to **have an inkling of** what change might be catastrophic and what change won't. Given the slowness of the change, what are politicians more likely to be concerned with? In the short term, unchecked production of greenhouse gases leads to increased economic production. Any serious reduction of greenhouse gases will make energy more expensive and reduce economic growth. Politicians need votes in the short term, so which choice will be seen as the most important - short term economic gain or safety of the environment? It is most likely that, in politicians' minds, short term economic gain will outweigh long term safety for the environment.

If governments start to implement sensible environmental strategies, at the very least the arrival of the coming environmental disaster can be delayed. Is it enough, however, just too moderate greenhouse gas emissions? When we reduce emissions, we do not solve the problem. We just defer the out coming global crisis until a later time. In the long term, we need to stop greenhouse emissions completely. But how do we go about it? How are we to completely obviate the production of greenhouse gases when they are a result of demand for cheap energy? Cheap energy means industry can make more money. What politician will tell companies to **cut out** the production of greenhouse gases if it means more expensive power for factories, and it results in a slowdown for the economy? Politicians are going to have to concede the strong probability that they will lose their jobs if they take this position. This is a serious problem.

Another problem is that it is not yet clear to all that global warming is actually happening. Although scientific information is starting to **pile up** supporting the argument that global warming is ongoing , its effects are not clear enough so that everyone can see them. Who can help people to wake up to the danger before it is too late? In this respect both scientists and politicians have important parts to play. Politicians need to be able to make people do things they do not want to. In order to do this, they must speak clearly and strongly about the problem so that average people will understand what is happening, and that they will also understand what will happen if they do nothing. So these politicians must be **silver tongued** speakers to do this. Scientists, too, need to show great perspicacity , since they are the ones who must ignore all the passion and find solutions to these very complicated problems. These scientists must **come up with** those practical solutions that the politicians will then have to get people to accept. Is this really too much to ask? Is it so **over the top** to tell people they must reduce their standard of living? Maybe it is, but we really do not have any choice.

APPENDIX IV. A Print Screen of Participant's Data Stored

cut out
silver tongued
over the top
catch on to
have an inkling of
over the top
over the top

Question	AnswerGiven	Result
Global warming will not destroy life on Earth .	f	False
Global warming will harm people's daily activities .	t	True
The droughts will mean some people have too much water .	f	True
Newspapers talk to us all the time about global warming .	f	False
It is easy to see that global warming is happening .	f	True
Bad things will happen as a result of global warming .	t	True
Good grenhouse change and bad greenhouse change are easy to see .	f	True
Economic gain at this moment is more important to politicians than the environment.	t	True
Sensible government policy can stop the environmental problem getting worse .	t	True
Producing fewer greenhouse gases will solve the problem of global warming .	f	True
Reducing the amount of greenhouse gases only delays facing the real problem .	t	True
If we stop all greenhouse gas production , energy will be cheaper .	t	False
Politicians must tell people to stop producing greenhouse gases .	t	True
People will be happy if politicians raise the price of energy and save the environment.	f	True

APPENDIX V. Post – Test

T	F	Question
☐	☐	Good greenhouse change and bad greenhouse change are easy to see.
☐	☐	Global warming will not destroy life on Earth.
☐	☐	Global warming will harm people's daily activities.
☐	☐	The droughts will mean some people have too much water.
☐	☐	Newspapers talk to us all the time about global warming.
☐	☐	It is easy to see that global warming is happening.
☐	☐	Bad things will happen as a result of global warming.
☐	☐	Economic gain at this moment is more important to politicians than the environment.
☐	☐	Sensible government policy can stop the environmental problem getting worse.
☐	☐	Producing fewer greenhouse gases will solve the problem of global warming.
☐	☐	Reducing the amount of greenhouse gases only delays facing the real problem.
☐	☐	If we stop all greenhouse gas production, energy will be cheaper.
☐	☐	Politicians must tell people to stop producing greenhouse gases.
☐	☐	People will be happy if politicians raise the price of energy and save the environment.
☐	☐	The quantity of scientific evidence supporting global warming is growing.
☐	☐	Global warming is not actually happening at this moment.
☐	☐	Politicians do not need to be good speakers to make people to give up cheap energy.
☐	☐	Scientists have to communicate clearly to everyone the problems of global warming.
☐	☐	Politicians alone must find solutions to the problem of global warming.
☐	☐	It is unreasonable to tell people to reduce their standard of living.
		Submit

APPENDIX VI. A Sample of Post Test Evaluation Sheet

Your Answer	Answer	Question
T	OK	Global warming will not destroy life on Earth.
F	False	Global warming will harm people's daily activities.
F	OK	The droughts will mean some people have too much water.
F	False	Newspapers talk to us all the time about global warming.
T	False	It is easy to see that global warming is happening.
F	False	Bad things will happen as a result of global warming.
T	False	Good greenhouse change and bad greenhouse change are easy to see.
F	False	Economic gain at this moment is more important to politicians than the environment.
F	False	Sensible government policy can stop the environmental problem getting worse.
F	OK	Producing fewer greenhouse gases will solve the problem of global warming.
F	False	Reducing the amount of greenhouse gases only delays facing the real problem.
T	False	If we stop all greenhouse gas production, energy will be cheaper.
T	OK	Politicians must tell people to stop producing greenhouse gases.
T	False	People will be happy if politicians raise the price of energy and save the environment.
T	OK	The quantity of scientific evidence supporting global warming is growing.
T	False	Global warming is not actually happening at this moment.
T	False	Politicians do not need to be good speakers to make people to give up cheap energy.
F	False	Scientists have to communicate clearly to everyone the problems of global warming.
F	OK	Politicians alone must find solutions to the problem of global warming.
F	OK	It is unreasonable to tell people to reduce their standard of living.

CURRICULUM VITAE

Name:	Ela GÜRSOY
Date of Birth:	Adana
Place of Birth:	01.04.1978
Address:	Çukurova Üniversitesi Konutları A Blok No: 42 Balcalı, Adana / Turkey
e-mail:	elagursoy@hotmail.com

ACADEMIC STUDIES

Date	Institute	Degree
2005-2008	Çukurova University The Institute of Social Sciences Department of English Language Teaching Adana, Turkey	MA
1996-2000	Ankara University Faculty of Letters English Language and Literature Ankara, Turkey	BA
1989-1996	Kurttepe Anadolu Lissi Adana, Turkey	Lycé

WORK EXPERIENCE

2000-2001	Bilgi Etlik Koleji, Ankara
2001-2002	English Club, Ankara
2002-2003	Engin Yayınevi, Ankara
2003-2005	GAP İlköğretim Okulu, Batman
2005-	Yeşilevler İlköğretim Okulu, Adana