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A COMPARATIVE STUDY ON THE EFFECTS OF PRESENTING
NEW WORDS IN SEMANTICALLY RELATED SETS ON THE ACQUISITION
OF ENGLISH VOCABULARY BY TURKISH LEARNERS OF
ENGLISH AT A PRIMARY SCHOOL

MA THESIS

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Çanakkale – 2004



**A comparative study on the effects of presenting
new words in semantically related sets on
the acquisition of English vocabulary
by Turkish learners of English
at a primary school**

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(MA Thesis)**

Çanakkale – 2004

Sosyal Bilimler Enstitüsü Müdürlüğüne
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*'A comparative study on the effects of presenting new words
in semantically related sets on the acquisition of English vocabulary
by Turkish learners of English at a primary school'*

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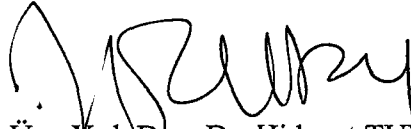
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ABSTRACT

The present study investigated the relationship between introducing new words by means of different techniques (namely presenting words in semantically related sets or in mixed sets) in foreign language teaching and the success of the students in learning them. The study further aimed at learning more about the effectiveness of semantic clusters in vocabulary instruction. Also under investigation was the effect of the length of a word on its retention in the memory. Finally, this study focused on the recalling time of words presented in semantic clusters and mixed sets in order to draw some conclusions.

The study was carried out with the fourth year students of a state primary school in Çanakkale. The data were collected by means of qualitative and quantitative research methodologies: pretests and posttests which were given before and after each application were quantitative in nature; and the questionnaire which was given at the end of the study was a qualitative technique. There was also a time keeping procedure in the study. The data collected by these means were then evaluated and interpreted with the help of some computer programs like SPSS (Statistical Package for the Social Sciences).

The results of the study revealed that contrary to the common belief, presenting new words in semantically related sets is not really an effective way of vocabulary teaching, because the students become more successful in the tests when they learn the new words in mixed sets rather than in semantic clusters. Furthermore, the data collected by the timekeeping procedure carried out during tests showed the fact that it took more time for the students to complete the tests of the words presented in semantic sets in comparison with the tests of the semantically unrelated words. However, the results of the delayed tests revealed that once the semantically related words are encoded into the memory, they become more durable and less forgettable. Finally, it was concluded as a result of an analysis of the vocabulary items used in the study that there is no significant relationship between the length of a word and its retention in the memory though the majority of the students said in the

questionnaire given after the application that they found it easier to remember the shorter words.

In conclusion, this study shed light on using different techniques for teaching vocabulary of a foreign language; in other words, it illuminated the relationship between presenting the new words in semantically related sets versus unrelated sets and their being learned. The findings revealed that each technique has its advantages and disadvantages: when new words are presented in semantically related sets, they will be learned more slowly in the short term but become more durable; on the other hand, when they are presented in semantically unrelated vocabulary sets, they will be learned faster and better in the short term but forgotten more easily later. Furthermore, the students will find it easier to learn shorter words when compared with longer ones. In the light of these findings, this study aims to make the learners and teachers aware of these advantages and disadvantages in order to help them choose the most appropriate technique for their aims and goals.

ÖZET

Bu çalışma yabancı dil öğretiminde yeni sözcüklerin farklı teknikler kullanılarak, yani anlam bakımından birbiriyle bağlantılı veya bağıntısız (karışık) gruplar biçiminde sunulması ile öğrencilerin bu sözcükleri öğrenmedeki başarısı arasındaki ilişkiyi araştırmıştır. Dahası, çalışma anlamsal kelime ağlarının (semantic clusters) kelime öğretimindeki etkisi konusunda daha fazla bilgi sahibi olmayı hedeflemiştir. Ayrıca yeni öğrenilen bir kelimenin uzunluğunun, bu kelimenin hafızada tutulmasına etkisi de incelenmiştir. Son olarak, bu çalışma, anlamsal bağıntı içinde ve bağıntısız (karışık) gruplar halinde sunulan sözcüklerin hatırlanma sürelerine bazı çıkarımlar elde etmek amacıyla odaklanmıştır.

Araştırma, Çanakkale’de bir devlet ilköğretim okulunun dördüncü sınıf öğrencileri ile yürütülmüştür. Veriler nitel ve nicel araştırma yöntemleri kullanılarak elde edilmiş olup, her bir uygulamanın öncesinde ve sonrasında verilen testler nicel bir yapıya sahiptir ve araştırma sonunda verilen anket ise nitel bir tekniktir. Araştırmada ayrıca bir zaman tutma süreci de uygulanmıştır. Bu şekilde toplanan veriler, daha sonra SPSS (Statistical Package for the Social Sciences) gibi bilgisayar programları yardımıyla değerlendirilip yorumlanmıştır.

Çalışma sonuçları ortaya çıkarmıştır ki, genel inanın aksine, yeni sözcükleri anlam bakımından bağıntılı gruplar halinde sunmak gerçekten iyi bir kelime öğretim yöntemi değildir; çünkü, öğrenciler yeni sözcükleri karışık gruplar şeklinde öğrendiklerinde, anlamsal bağıntılı gruplar halinde öğrendiklerinden daha başarılı olmaktadır. Dahası, testler sırasında uygulanan zaman tutma süreci yoluyla toplanan veriler şu gerçeği göstermiştir ki, öğrenciler için anlam grupları şeklinde sunulan kelimelerin testlerini tamamlamak, anlam bakımından bağıntılı olmayan kelimelerin testlerine kıyasla daha uzun zaman almaktadır. Buna rağmen, geciktirilmiş testlerin sonuçları açığa çıkarmıştır ki, anlamsal gruplar halinde sunulan kelimeler bir kere hafızaya kodlandığında daha kalıcı olmakta ve daha zor unutulmaktadır. Son olarak, çalışmada kullanılan sözcüklerin analizi sonucunda, öğrencilerin büyük kısmının uygulama sonrasında verilen ankette kısa kelimeleri

daha kolay hatırladıklarını söylemelerine rağmen, bir kelimenin uzunluğu ile o kelimenin hatırlanması arasında bariz bir ilişki olmadığı sonucuna varmıştır.

Sonuç olarak, bu çalışma yabancı dilde kelime öğretiminde farklı tekniklerin kullanılmasına ışık tutmuş; diğer bir ifadeyle, yeni kelimelerin anlam bağıntılı veya bağıntısız sunulması ile onların öğrenilmesi arasındaki ilişkiyi aydınlatmıştır. Bulgular göstermiştir ki, her tekniğin kendine has avantajları ve dezavantajları vardır: yeni kelimeler anlam bağıntılı gruplar halinde sunulduğunda, kısa vadede daha yavaş öğrenilmekte fakat daha kalıcı olmakta; diğer taraftan anlam bakımından bağıntısız kelime grupları şeklinde öğretildiğinde ise kısa vadede daha hızlı ve iyi öğrenilmekte ancak uzun vadede daha kolay unutulmaktadır. Ayrıca, öğrenciler uzun kelimelere kıyasla, kısa kelimelerin öğrenilmesini daha kolay bulmaktadırlar. Bu bulgular ışığında çalışma, öğretmen ve öğrencilerin amaç ve hedeflerine en uygun yöntemi seçmelerine yardımcı olmak için bu avantaj ve dezavantajların farkına varmalarını sağlamayı hedeflemektedir.

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TO

Iain, Levent & Pamuk

for their unique friendships

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CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

This chapter starts with a brief description of the background to the study and continues with the purpose of the study and the general and specific research questions addressed in this thesis. It, then, gives a brief description of the significance of the study, its assumptions and limitations. Finally, an organization of this thesis will be given.

1.1 BACKGROUND OF THE STUDY

Zimmerman (1998) points out that vocabulary teaching is at the center of language instruction, and is therefore critically important for every person that tries to learn a language. It is a well known fact that there is no language without words in the world. In fact, words are the building blocks of any language on the earth; and more complex structures such as sentences and paragraphs are composed of these words that come together according to some rules (Read 2000). Moreover, Cook (1994) calls attention to the fact that language knowledge is crucial because it can be used in many ways ranging from declaring war to worshipping.

If we further elaborate on this issue, we see that all languages first appeared as words and a new language learner learns some very important words first (Thornbury 2002). Besides that, this learning process continues for a lifetime. Even in our mother tongues, new words are produced, some new meanings are loaded on old words whenever needed; and all of the people who speak that language go on learning these new items (Thornbury 2002).

Words are the main elements of a language. However, regarding this fact, it would not be right to claim that vocabulary teaching has always been given due importance within the general area of language teaching throughout history. Meara (1983), Gairns and Redman (1986), Hedge (2001), Richards and Renandya (2002) and many others draw attention to this fact and complain that vocabulary teaching has been neglected in many language teaching programs and coursebooks.

However, it is worth mentioning here that this fact has changed recently; and as Richards and Renandya (2002) state, this positive change has placed vocabulary teaching in the center of language instruction again. Sarıgül (1999) states that now there is a great interest in vocabulary teaching; and this upsurge of interest has led the researcher to delve into examining the relationship between vocabulary and lexical semantics in order to contribute to the teaching of vocabulary in Turkey.

More and more researchers are now interested in this important area of language teaching and are exploring ways of promoting it more effectively (Read 2000; Richards and Renandya 2002). In addition to this, Gu and Johnson (1996:645) call attention to the fact that “developments in lexical semantics and studies on the mental lexicon form a different, more recent focus on vocabulary learning”.

According to Nation (1990), there are very strong reasons for a systematic approach to vocabulary instruction both by learners and teachers. These reasons are: thanks to research on vocabulary teaching, we now know what to do with words and what words we should focus on; also, there are numerous ways of dealing with vocabulary in foreign language instruction and second language instruction; finally, both learners and teachers have recently grasped the importance of vocabulary teaching in general language instruction.

As Nation (1990) mentions above, there are numerous ways of dealing with vocabulary. Undoubtedly, some techniques have strong and durable effects on language learners whereas some others do not; because it would certainly not be scientific to expect the same degree of efficiency from all the different techniques in vocabulary learning. It is also a well known fact that each pupil is different and will

favor different techniques (Pachler and Field 1997); and as language teachers, we must make decisions all the time (Larsen-Freeman 1986). Therefore, it is researchers' duty to investigate the efficiency of these techniques and, depending on their findings, to put forward some suggestions and propose solutions to some common problems.

1.2 PURPOSE OF THE STUDY AND RESEARCH QUESTIONS

The author of this study aims to evaluate the efficiency of teaching vocabulary items in semantically related sets. Hudson (1989) complains that many theories about word acquisition do not seem to provide a basis for such a mechanism. Therefore, this study addresses and hopefully makes a contribution to this important area. Furthermore, the aim of this research is to find differences between two different techniques, namely; introducing the new vocabulary items in semantically related sets versus unrelated sets. Test results and answers given to the questionnaire will be interpreted to find satisfactory answers about the effectiveness of these two different techniques and find the more effective one.

Basically, this study is based on a comparison between a traditional word-by-word approach (Crow and Quigley 1985) and a semantic field approach (Lehrer 1974). In other words, this study examines whether a semantic field approach is more effective than a traditional one in vocabulary instruction or vice versa.

Another purpose of this study is to call attention to the usage of semantic relations in vocabulary teaching. As will be explained in the literature review section, there are many relations among words; for instance synonymy and antonymy are two common types of relations. However, the relations that will be used in this study are not these. Semantic sets (i.e. colors, occupations etc.) and the relations of words in the same semantic set will be the focus of this study.

Research questions of this study are as follows:

RQ 1: How much of the new vocabulary that is presented through two different techniques will actually be learned by the participants; and depending on the results, which technique will appear more successful?

RQ 2: Does the length of a vocabulary item have an effect on the test results of the two groups?

RQ 3: Which sets of words will take more time to remember, the related sets or the mixed sets?

RQ 4: What do the participants think about the difficulty of learning words in semantic sets and in mixed sets?

The data, collected by means of tests, a questionnaire and a timekeeping procedure, will be analyzed and interpreted to find answers to the above questions.

1.3 SIGNIFICANCE OF THE STUDY

It is a fact that vocabulary has been neglected for many years (Allen 1983; Carter and McCarting 1988; Paker 1989; Taylor 1990; Nunan 1991; Williams and Burden 1997; Zimmerman 1998; Hedge 2000). Although the importance of vocabulary has been accepted by almost all researchers recently, it has still not received the due attention in EFL /ESL instructional contexts (Zimmerman 1998).

Traditionally, vocabulary instruction has been seen as a part of reading lessons and has mostly been taught through dictionary definitions, guessing meaning from context, synonyms and antonyms (Altınok 2000). Besides that, new vocabulary items have been taught by means of a word-by-word approach; and that, as such, has often been criticized (Crow and Quigley 1985).

In addition to this, teaching a foreign language to very young learners is a fairly new concept and the research on the issue has mostly yielded conflicting results. Undoubtedly, in the center of these discussions, there is vocabulary instruction. This fact can easily be inferred by taking into consideration all the different methods and techniques devised by researchers and the question marks about their effectiveness in vocabulary teaching. Furthermore, it is also well-known that numerous techniques are needed for effective learning and that two different techniques do not have the same degree of usefulness. Especially if different target groups are taken into consideration, some techniques may appear to be more or less beneficial in comparison with some others.

As Altınok (2000) points out, there are many vocabulary teaching techniques that teachers can use, such as using semantic webs and presenting new words in a semantically related way. However, in many institutions, the language teachers are not even aware of these new techniques and developments in the area of vocabulary teaching in spite of the fact that providing learners with effective ways of learning, retaining and using new vocabulary items is one of the most important responsibilities of every language teacher. According to Nattinger (1988 in Altınok 2000), the efficiency of these techniques needs to be investigated empirically. However, even in ESL classes where teachers have devoted much time to vocabulary teaching, the results have been disappointing (Allen 1983 in Özden 1998). Therefore, in order to attract attention to the issues of vocabulary learning and teaching, it is a necessity to discover new approaches and techniques of how vocabulary is best learned, organized and retrieved, because traditional techniques, as Seal (1991) points out, are not universally successful in learning new words.

At this point, it is certainly the responsibility of researchers to shed light on these various techniques and their roles in vocabulary teaching. Therefore, the author of this study feels responsible for determining which one of the two different techniques mentioned before is more effective in a group of young learners who are at the ages of ten and eleven. Even though some other researchers might have

focused on this issue before, this study is still important in terms of its being a study about young learners at a state primary school in Turkey.

In the light of these facts, this experimental study has been set up to investigate whether teaching vocabulary in semantically related sets will yield better results in vocabulary instruction than teaching them in semantically mixed sets or vice versa.

The findings of this study will enlighten, to some extent, the issue of vocabulary instruction for Turkish young learners of English; and the results will hopefully be a useful reference to many language teachers working with this age group.

The results of this study can also make a contribution to the research carried out in this field and serve those who are interested in this subject as a basis for further research to improve the retention and learning of vocabulary in this age group. Finally, the results of this study will be useful for pre- and in-service teacher training.

1.4 ASSUMPTIONS OF THE STUDY

This study has the following basic assumptions:

First of all, it is assumed that all the participants are volunteers and in accordance with the aim of this study.

It is also assumed that participants that are in the same age group have nearly the same cognitive and physical abilities; and the fact that they are coming from different social classes is not considered very important.

It is also assumed that the findings of this study will reflect the effects of the two different techniques mentioned before, and that there are not numerous interfering factors that might affect the results and thus mislead us.

Finally, it is assumed that all of the participants were motivated to learn English and to expand their vocabulary knowledge.

1.5 LIMITATIONS OF THE STUDY

This study is limited to the fourth and fifth year students of Çanakkale İstiklal Primary School and will be carried out in 2003- 2004 school year; and a pilot study will be done before the main study in order to determine the probable problems and find solutions to them.

In this study, the instructor will present the new vocabulary items through pictures, drawings and diagrams in both groups. However, thinking that abstract words can hardly be taught with pictures (Shehzad 1994); and that concrete words are more realistic for this age group, no abstract words will be used in the present study. Furthermore, considering the difficulty of a true-experimental design, the study will be done in a naturalistic class atmosphere, in two different classrooms.

Finally, there may be difficulty in generalizing the findings of this study because of the number of participants and fairly long duration of this application, which can be considered as an interfering factor to some extent because, the participants may find some way to make revisions out of the normal presentation stages and this may affect especially the delayed test results. Furthermore, the number of tests during the study may arouse 'a testing effect' which may influence the results as well.

1.6 ORGANIZATION OF THE THESIS

This thesis is composed of seven chapters. Chapter One is an introduction and it presents the background to the study. The purpose of this study and the research questions are presented in this chapter too. Furthermore, this chapter includes the significance, assumptions and limitations of the study and ends with a description of the organization of the whole thesis.

Chapter Two discusses some basic questions such as 'What is a word?', 'What's knowing a word?', 'How important is vocabulary?', and the distinction between active and passive vocabularies.

Chapter Three examines the relationships among English words in the light of the research findings about the role of semantic fields and lexical sets in vocabulary instruction. Some basic theories related to this issue such as the Schema Theory and the Field Theory are also discussed in this chapter.

Chapter Four reviews the literature on the process of vocabulary learning and teaching in order to give an answer to the most important question of how to teach vocabulary. The rationale for using pictures and semantically related sets in vocabulary teaching and testing are explained in detail by referring to the nature of the human memory.

Chapter Five is the methodology chapter in which the methodology pursued in this study is described. Moreover, it discusses the qualitative and quantitative research methodologies, presents one pilot and one main study and outlines the procedures followed.

In Chapter Six, the findings of this study are reported and discussed in detail. Interpretations of the data are supported with various tables and charts.

Finally, Chapter Seven is a summary of the whole study. It examines the findings, draws some conclusions and presents important implications in the light of these conclusions.

CHAPTER TWO

DEFINITION OF VOCABULARY

2.0 INTRODUCTION

This chapter discusses some basic questions such as ‘What is a word?’, ‘What’s knowing a word?’ and aims at defining what ‘vocabulary’ is by answering such questions. Furthermore, it explains the distinctions between active versus passive and implicit versus explicit vocabularies.

2.1 THE IMPORTANCE OF VOCABULARY

Numerous researchers (Allen 1983; Meara 1983; Carter and McCarting 1988; Paker 1989; Taylor 1990; Nunan 1991; Williams and Burden 1997; Zimmerman 1998; Hedge 2000) state that vocabulary has, for a long time, been neglected in foreign language teaching. Seal (1991) complains that this period of neglect lasted for more than fifty years; and adds surprisingly that there was even a period when too much vocabulary learning was regarded as a dangerous thing and it had to be avoided. Although, much importance has been given to structures and grammar rules, course books have provided no guidance for vocabulary learning at all. That is in fact what has happened in Turkey for many years. As a result of emphasizing grammar over vocabulary, new words were usually presented with their Turkish equivalents in lists to be memorized at home even though it is now a well known fact that teachers should be systematic in teaching vocabulary (Paker 1989). Furthermore, as Paker (1989) points out, new techniques for vocabulary instruction were not used at schools.

This neglect was an unusual one anyway because as Hedge (2000) and Richards (1976 in Altınok 2000) point out, learners themselves have always considered vocabulary as a significant part of language. For example one subject of Pickett (1978 in Hedge 2000:110) introspected in this way: "This brings to me the subject of vocabulary learning, which to me always seems the key to any language... there is no escape from learning words." Furthermore, Seal (1991) notes that for many years, learners have been telling us that they need to increase their vocabularies; but unfortunately, this demand has always been neglected and therefore, vocabulary teaching has not been a priority in most curricula.

However, the situation has changed lately (Williams and Burden 1997; Hedge 2000); and as Seal (1991) reports, especially the 1980s have seen a resurgence of interest and activity in lexical matters. At the same time with this resurgence of interest, there has been a shift toward communicative methodologies which focus on the use of language rather than the formal study of it (Seal 1991). Furthermore, with this new wave of interest, numerous vocabulary instruction techniques such as word families, keywords, mnemonic devices have been developed.

According to Sangül (1999:3), "In recent years, views supporting the importance of meaningful vocabulary knowledge as a helping tool for language acquisition are becoming influential in the foreign language teaching community."

Taylor (1990) notes that more and more books contain vocabulary sections nowadays. Besides that, as Januzzi (1995) claims, most foreign language learners and teachers would agree that there is a pressing need to study, revise and recycle vocabulary effectively. Seal (1991) reminds teachers that as more importance is attached to the teaching of vocabulary, it will become necessary for teachers to become better informed about the structure and organization of it.

While talking about the importance of vocabulary instruction, Paker (1989:1) claims that "teaching vocabulary is one of the indispensable components of language teaching." Wilkins (1974 in Paker 1989:1), similarly, states that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed." Paker

also suggests that vocabulary knowledge is the basis of communication and without it, our communication would just be impossible. However, according to Paker, it does not mean that language teachers should overemphasize vocabulary items; on the contrary, they should develop a way to balance vocabulary teaching and other language skills; because vocabulary is not the whole story.

Taylor (1990) claims that the importance of vocabulary is even greater in some situations than some others. For example, if the students are in a country where the target language is used, the structural and grammatical errors are expected to disappear in time; therefore more class time should be spent on enriching the vocabulary knowledge of students. Furthermore, according to her, vocabulary is much more important in 'English for Specific Purposes' (ESP) courses and courses that teach adult learners, since "it is the one area of language learning which does not appear to be slowed down by age" (1990:1).

Abdullah (1993), relying on his research results, reports that the factor that correlates most highly with comprehension is the knowledge of word meaning. Similarly, Daneman (1988 in Abdullah 1993) suggests that constructing text meaning depends, in part, on the success of searching for individual word meanings, because words are the building blocks of connected texts. However, Seal (1991) criticizes the view that words are the building blocks upon which the knowledge of a second language can be built because it is a naïve view.

Al-Kufaishi (1988) rightly asserts that vocabulary is one of the major problems confronting EFL learners; because without enough vocabulary, they can neither communicate their ideas clearly nor grasp the ideas transmitted to them. Besides that, their writing, reading abilities and listening comprehension are hampered by their limited vocabulary. Al-Kufaishi (1988:42) goes on as follows:

"There is general agreement that the possession of a large number of vocabulary items is necessary to success in social, professional, and intellectual life; that vocabulary is a vehicle for thought, self-expression, interpretation, and communication."

Al-Kufaishi (1988) also draws attention to the fact that the importance of vocabulary knowledge is attested to by the inclusion of separate vocabulary components in college and scholarship tests such as the TOEFL (Test of English as a Foreign Language) and GRE (Graduate Record Examination). According to him, it is wrong to presume that vocabulary can be acquired through reading and practicing other language skills. On the contrary, learners must be taught the structure of words together with the meaning units of words regularly and systematically. Seal (1991) puts an extra emphasis on planned and systematic vocabulary learning and discusses the drawbacks of being unsystematic.

It is also a well-known fact that the appropriate choice of vocabulary plays an important role in communication in terms of conveying the meaning; and therefore insufficient vocabulary prevents the comprehension of a meaning (Altınok 2000).

In short, after a period of neglect, more and more teachers and researchers are waking up to the realization that vocabulary is an important area, worthy of effort and investigation and that it is a big necessity that students have control over the lexical items of the language they are learning. It is also a fact that we are more than ever in need of empirical studies that can shed light on how the mental lexicon is organized and what the most effective means to enlarge and solidify that lexicon are. Seal (1991:309) suggests that:

“Time should also be set aside for vocabulary study, showing lexical items within their semantic fields, illustrating the sense relations between items, using pictorial schemata, and creative problem-solving exercises to deepen an awareness of how the lexical items operate and fixing the items within the second language learner’s lexicon.”

2.2 WHAT IS A WORD?

Singleton (1999) and Read (2000) admit that the word is not an easily definable concept although it is clearly central to both the non-specialist and specialist understanding of language. Therefore, in order to find an appropriate definition, different discussions should be taken into account. According to Singleton

(1999), the definition of this term will depend very much on the level of abstraction at which a speaker/writer is operating, the linguistic levels under discussion, and the extent to which semantic content is being treated as criterial.

A definition of this term comes from Vygotsky (in Read 2000), who defines a word as a microcosm of human consciousness. In addition to this, Moore (1998) tries to reach a definition by dividing vocabulary into four main categories: general/core vocabulary, specialist vocabulary, sub-technical vocabulary and technical vocabulary.

Read (2000) suggests that words come in a variety of forms and therefore, it is important to find an answer to the question whether these different forms can be regarded as the different forms of the same word. Read also draws attention to the existence of larger lexical items such as phrases and phrasal verbs. He claims that these items have been accepted as part of the vocabulary learning task that learners face and therefore are usually put in many vocabulary tests.

Lewis (1997:3) explains his famous Lexical Approach in a few words as follows: "Language consists not of traditional grammar and vocabulary but often of multi-word prefabricated chunks". Lewis continues that the Lexical Approach challenges the fundamental view of language which divides language into grammar and vocabulary; instead it argues that language consists of chunks which, when combined, produce continuous coherent text. He also adds that teachers using the Lexical Approach will be more inclined to direct learners' attention to chunks which might be very large instead of analyzing language whenever possible.

Goulden, Nation and Read (1990) claim that decisions about what is a word and what is not should be based on learning requirements. For instance, if a learner knows the word *govern* and the prefix *mis-*, then *misgovern* should not necessarily be given additional attention. For this reason, *govern* and *misgovern* can be regarded as one word. However, when we consider the meanings of such words as '*conceive*' and '*misconceive*', this view seems to be too naïve and lacking in defining and classifying words.

2.3 WHAT DOES 'KNOWING A WORD' MEAN?

Nation (1990) claims that knowing a word involves more than knowing its meaning. Özden (1998), similarly, points out that knowing a vocabulary item is not a simple process and it is much more than simply memorizing the word. According to Nation (2001:26), "there are many things to know about any particular word and there are many degrees of knowing". Thornbury (2002) states that knowing a word, at the most basic level, involves knowing its form and its meaning. He further asserts that knowing a word not only means knowing its dictionary definition but also includes the knowledge of its collocations and whether it is known receptively or productively. According to Hedge (2000), vocabulary knowledge should be seen as a scale running from recognition of a word at one end to automatic production at the other.

Taylor (1990:1-3) demonstrates that word knowledge exists on various levels, which can be summed up as follows:

1. Knowledge of the frequency of the word in the language, i.e. knowing the degree of probability of encountering the word in speech or in print.
2. Knowledge of the register of the word, i.e. knowing the limitations imposed on the use of the word according to variations of function and situation.
3. Knowledge of collocation, both semantic and syntactic, i.e. knowing the syntactic behavior associated with the word and also knowing the network of associations between that word and other words in the language.
4. Knowledge of morphology, i.e. knowing the underlying form of a word and the derivations that can be made from it.
5. Knowledge of semantics, i.e. knowing firstly what the word means or 'denotes'.
6. Knowledge of polysemy, i.e. knowing many of the different meanings associated with a word.
7. Knowledge of the equivalent of the word in the mother tongue.

Nation (1990:31) proposes a list of different kinds of knowledge that a person must master in order to know a word: the meaning(s) of the word; the written form of the word; the spoken form of the word; the grammatical behavior of the word; the collocations of the word; the register of the word; the associations of the word; the frequency of the word.

According to Ellis and Sinclair (1989) and Schmitt (2000), the list given on the previous page introduces different types of word knowledge very well and most of them are necessary to be able to use a word in all the language situations one comes across.

2.4 ACTIVE VERSUS PASSIVE VOCABULARY

Haycraft (1993) suggests that in vocabulary teaching, a distinction should be made between active and passive vocabulary. He and many other researchers like Hatch and Brown (1998), Gairns and Redman (1986) define active vocabulary as words which the learners understand, can pronounce correctly and use constructively in speaking and writing. On the other hand, passive vocabulary is composed of words that learners recognize and understand when they occur in a context, but which they cannot produce correctly themselves (Haycraft 1993).

Schmitt (2000) defines receptive (passive) vocabulary knowledge as being able to understand a word and says that it is normally connected with listening and reading. Nation (2001) agrees that in receptive knowledge we receive language input from others through listening or reading. On the other hand, productive (active) vocabulary knowledge occurs if we are able to produce a word of our own accord when speaking or writing.

Melka (1997) states about the receptive vs. productive distinction that when talking about receptive vocabulary or productive vocabulary, a researcher should not only focus on the ability of recognizing individual words or producing them, but s/he should also consider a person's receptive or productive lexicon overall.

Haycraft (1993) draws attention to the importance of passive vocabulary by saying that a big range of passive vocabulary is invaluable to learners, particularly as time does not allow the introduction of numerous words in class. Therefore, according to Haycraft, the role of a teacher should be to give advice on the choice and use of a dictionary and to get the learners to read as much as possible. Crow and

Quigley (1985) argue that the question of how we can equip the language learner with a passive vocabulary large enough to permit fluent reading is yet to be answered. Crow and Quigley (1985) also draw attention to the fact that a weak passive vocabulary is a serious problem for ESL students who need to read university-level material.

The active/passive distinction has been under attack for some time (Færch, Haastrup, and Phillipson 1984 in McCarthy 1990; Hedge 2000). It is criticized on the grounds that it takes a simplistic view about the organization of the mental lexicon and how words are stored in it. For example, by looking at this distinction one can easily conclude that the mental lexicon is a static place where vocabulary items are stored in two separate compartments. Hedge (2000) explains her opposing view by drawing attention to the existence of words which learners can retrieve from memory and use automatically while there are others for which learners experience a 'tip of the tongue effect', recalling some characteristics of the word, but not its precise form. Yet some other words are difficult to recall even though they are stored in the memory.

2.5 IMPLICIT VERSUS EXPLICIT VOCABULARY

Ellis (1995 in Nation 2001) argues for a distinction between explicit and implicit learning. According to this distinction, formal recognition and production rely on implicit learning whereas the meaning and linking aspects rely on explicit, conscious process. Nation (2001) further explains this distinction by reporting from Ellis (1994) that implicit learning involves attention to the stimulus and it is strongly affected by repetition. On the other hand, explicit learning is more conscious, because learners make and test hypotheses in a search for structure. In other words, explicit learning, which is strongly affected by mental processing, can involve a search for rules, or applying given rules. Another researcher, Child (2000), tries to explain this distinction in connection with different memory types, which he names explicit and implicit memories.

According to Erten (1998b), the main idea of this distinction lies in the emphasis placed on the level of consciousness and explicitness in the process of teaching and learning vocabulary and nature of the use of context they favor. Erten also notes that the notion of implicit vocabulary is often identified with Krashen (1989) whose main claim is that new vocabulary is acquired by reading for meaning and understanding the message in the context. According to this view, teaching and learning vocabulary explicitly cannot be the main source of the rich mental lexicon. However, favoring implicit vocabulary acquisition through the use of context alone has some limitations from several perspectives.

Explicit vocabulary learning differs from the implicit one in use of context and the emphasis placed upon the explicitness involved in the process of vocabulary learning in context or out of the context (Erten 1998b).

Finally, Bialystok (1981) makes a distinction between formal and functional language use and says that classrooms provide instances for both of them. He also reminds us of the well-known contrast that learning is conscious knowledge of language rules and is derived from formal instruction. Acquisition, on the other hand, occurs unconsciously and arises from naturalistic language use (Oxford 1990).

2.6 CHAPTER SUMMARY

This chapter presented different views about the definition of a 'word' and looked for an answer to the important question 'what does knowing a word mean?' It further made a distinction between active vs. passive vocabulary and implicit vs. explicit vocabulary.

CHAPTER THREE

SEMANTIC FIELDS AND LEXICAL SETS

3.0 INTRODUCTION

This chapter sheds light on the distinction between a semantic field and a lexical set. It also gives information about the relations among words in English. Furthermore, some basic theories such as ‘The field theory’, ‘the Schema Theory’ and ‘the Semantic Mapping Theory’ are discussed in connection with the organization of the mental lexicon. The chapter ends with the research findings related to the use of semantic fields in language teaching.

3.1 DEFINING A ‘SEMANTIC FIELD’ AND A ‘LEXICAL SET’

According to Sarıgül (1999), the vocabulary of any language is a system of interrelated lexical networks and not a collection of independent items; and therefore, the meanings of many words are dependent on the presence of other words in the language.

Mackey (1965 in Crow and Quigley 1985:499) defined the concept of a semantic field as (being):

“made of basic key-words, which command an army of others. The semantic area may be regarded as a network of hundreds of associations, each word of which is capable of being the center of a web of associations radiating in all directions. A word like *man* might have as many as fifty such associations –chap, fellow, guy, gentleman, etc.”

According to Grady (1992:109), a semantic field is “a set of linguistic items and must include at least one contrast set” and “it is the meaningful lexical items and not their isolated abstract meanings that form the field.” Thus, Grady’s definition of a semantic field is composed of a set including one or more contrast sets and also including permutation relations. Furthermore, Grady uses the term ‘semantic field’ rather than ‘lexical field’, for he says, his concern is with the semantic relations among the expressions. Another fact that can be derived from this definition is that a semantic field can be as small as a single contrast set or could include a multitude of them together with permutation and other relations. Grady also argues that ordinary speakers of a language have and deploy the knowledge about contrast relations and field relations as a part of their general linguistic knowledge.

Miller (1978 in McCarthy 1990) draws attention to the difference between a lexical field and a semantic field by saying that lexical fields are the realization of the abstract notion of semantic fields. In other words semantic fields contain only concepts whereas lexical fields contain real words. McCarthy (1990:21) elaborates on the issue that “Semantic fields are divisions within the general ‘semantic space’ that is available to languages to express reality, to ‘word the world’”. According to him, multi-word units and the related words in any given lexical field in any given language show us how the semantic space has been divided up in that language. McCarthy also points to the following problem about lexical and semantic field distinction which according to him reflects the fact that some concepts are more salient and more central than others within the semantic field. He states that:

“One of the problems researchers encounter when investigating how people perceive semantic fields is that the lexical fields that realize them do not seem to consist of an array of words of equal status. In any given field, some words will be more salient, will spring more immediately to mind, and will be perceived as ‘classic examples of that field.’” (McCarthy 1990:45)

Grady (1992) draws attention to the importance of semantic fields by saying that many phenomena such as the abilities to deal with metaphor, ambiguity, and the interpretation of spoken language are directly connected to the knowledge of

semantic fields in the performance of a competent speaker. As Trier (1934 in Lyons 1977:253) puts it in a much-quoted passage (cf. Ullmann 1957:157; Oksaar 1958:13-14; Geckeler 1972:105):

“Fields are living realities intermediate between individual words and the totality of the vocabulary; as parts of a whole they share with words the property of being integrated in a larger structure (*sich ergliedern*) and with the vocabulary the property of being structured in terms of smaller units (*sich ausgliedern*)”

If we accept the existence of fields in vocabulary and decide to make use of these relations in vocabulary teaching, the next question is: how are the items of a particular vocabulary set organized and what are the types of relationships that can exist between items? According to Carter and McCarthy (1988), major work in semantics has been devoted to these areas. Similarly, Werner (1998) states that most of the effort in semantic networks has concentrated on lexical / semantic relations and fields.

Tinkham (1997) makes a distinction between a ‘semantic group’ and a ‘thematic group’. According to him, semantic clustering is different from thematic clustering which is a group of words that are considered to be grouped around a common theme.

Palmer (1991) claims that the items in a particular semantic field are unordered and they can in no way be ordered except for an alphabetic order. On the other hand, he admits that some words such as ‘days of the week’ can be organized in a way. A contrary view to Palmer’s comes from Pearson and Johnson (1978 in McCarthy 1990), who suggest that concepts are not randomly related but follow predictable lines.

Some other researchers like Lehrer (1974) and Lyons (1977 in Grandy 1992) advocate that some vocabulary items such as husband/wife, buy/sell are converses of each other. However, some researchers like Grandy (1992) argue that they are not merely converses but actually instances of different relations. He explains his argument by assuming that husband/wife are two place relations such that ‘X is the

husband of Y if Y is the wife of X' whereas the relationship for buy/sell a permutation of the first and third element rather than first and second: 'X buys Y from Z if Z sells Y to X'.

Wierzbicka (1996) asserts that some words are more central to the language than others and that these core vocabulary items tend to be the most frequently occurring ones in any given lexical field. Wierzbicka (1996) further divides these groupings into two main categories as 'natural kinds' and 'cultural kinds'.

Words such as *dog, lion, tiger, squirrel*, and so on can be said to form a well-defined, discrete semantic field, because they all are 'kinds of animals'. Similarly, *eagle, swallow, penguin* etc. form a well-defined, discrete semantic field because all of their definitions are headed by the same component 'a kind of bird'. On the other hand, it would be wrong to think that words such as *doll, ball, tricycle, rattle, swing* and *teddy bear* can be similarly defined in terms of one non-arbitrary supercategory such as toy. Therefore, according to Wierzbicka (1996:172), 'toys', 'weapons', and so on are not taxonomic supercategories, in the sense that 'animals', 'birds', or 'trees' are. Consequently, it would be wrong to speak of semantic fields of 'toys', and 'vehicles', or 'weapons' just as speaking of semantic fields of 'animals', 'birds', 'trees' and so on.

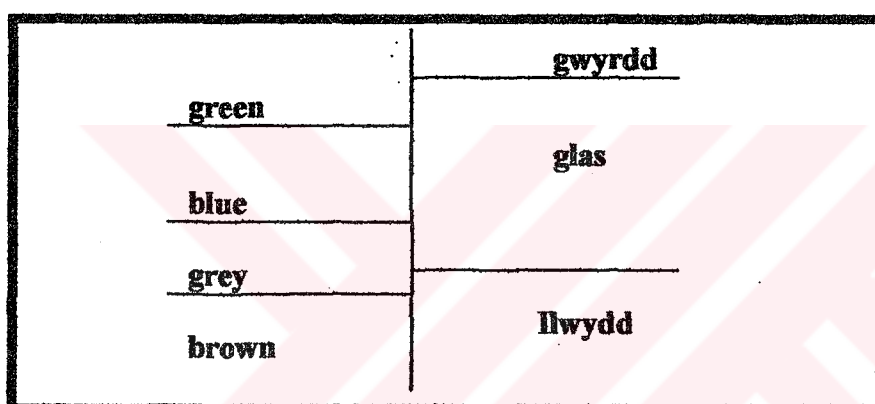
Wierzbicka (1996) also suggests that names of 'cultural kinds' do not form non-arbitrary, discrete fields like names of natural kinds. She illustrates her claim with the semantic field of containers such as *cup, mug, bottle, jar, jug, bucket*, and *barrel*. However, the word *bucket* is also related to *bowl* or *tub*, *bottle* is related to *carafe*, *carafe* is related to *vase* and so on. According to her, no such thing happens with the sets of natural kinds; for example, birds do not fade off similarly into bats, fishes into animals (in the everyday sense of the word). Depending on this fact, she claims that although sparrows are 'a kind of bird', and roses 'a kind of flower', semantically, pots and pans, buckets or bowls are not 'a kind of container'.

It's Palmer (1991)'s assertion that a list of semantically related words divide up a particular semantic field, but this division changes from language to language as

in Figure 1. Looking at this figure, we may conclude that different languages deal with the field of color in quite different ways.

According to Palmer, this difference depends on the number of color terms in a language. Apparently, there will be a much wider range in a language that has only two or three color terms than in one with the total of eleven color terms.

Figure 1: Division of a particular field by color words from English and Welsh (Based on Hjelmslev 1953 in Palmer 1991:69)



3.2 WORD RELATIONS

Katz and Fodor (1963 in Johnson-Laird 1988) argue that the meanings of words could be represented by structured sets of semantic primitives. For example, the meaning of 'woman' is represented by the set of primitives (HUMAN) (FEMALE) (ADULT). This theory decomposes meaning into primitive elements. Furthermore, these elements are called 'semantic markers' and believed to be universal in all languages.

Depending on some findings, Aitchison (1994) concludes that words are not assembled out of a common store of semantic primitives; and asks the question: 'how are they related to each other?'

According to Aitchison (1994:82), “perhaps we should imagine them as linked together in a gigantic multi-dimensional cobweb, in which every item is attached to scores of others”. Similarly, Nation claims that:

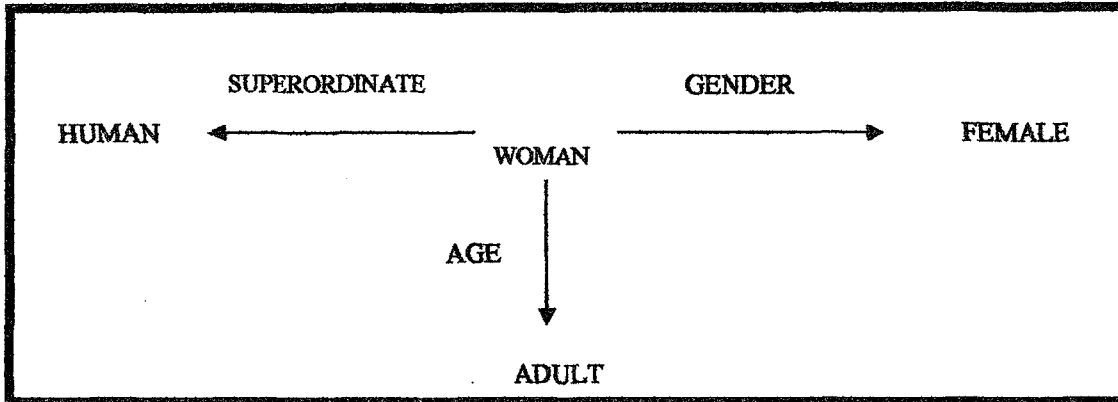
“Words are not isolated units of language, but fit into many interlocking systems and levels. Because of this, there are many things to know about any particular word and there are many degrees of knowing”. (2001:26)

According to McCarty (1990), the evidence points to strong links between words. According to him, blends such as ‘tinute’ (tiny/minute) and word association games suggest that words are organized into semantically related families in the mind.

Depending on various research results, Wierzbicka (1996) claims that one has to compare a word with other intuitively related ones in order to understand the exact meaning of it because, according to her, words form more or less natural groupings and at least some of these groupings are non-arbitrary. Similarly, Gairns and Redman (1986) conclude that “the meaning of a word can only be understood and learnt in terms of its relationship with other words in the language.”

According to Johnson-Laird (1988:99), the traditional view was that: “associations are the universal building blocks of the mind, and a word is just a special sort of associative stimulus: it elicits a representation of the object to which the word corresponds.” Johnson-Laird further claims that there is a decisive objection to this theory and that an association is not a meaning but a link from one representation in memory to another. In other words, it leads from one thing to another. Johnson-Laird, however, draws attention to the fact that there can be numerous different relations between representations. For instance, there is a strong relation between the words ‘hot’ and ‘sun’; but this relation is different from the association between hot and its denotation, temperatures of a particular range. According to Johnson-Laird, the solution to this problem is to label the associative links and form ‘semantic networks’, which he defines as labeled associations from one word to another in a network of links. Figure 2 illustrates this.

Figure 2: Graphical representation of 'woman' in a semantic network (Based on Johnson-Laird 1988:100)



Gairns and Redman (1986) and Hedge (2000) put forward that although there are numerous kinds of relations among words such as cause and effect relations, the most common ones are synonymy, antonymy and hyponymy. Gairns and Redman (1986) also add that componential analysis is a systematic means of examining sense relations to see the similarities and differences between two words in the same semantic field though this method has not been a successful one with lower levels. Figure 3 presents a student elicited word list for a story about rattlesnakes.

Figure 3: A Student elicited word List for a story about rattlesnakes (Based on Heimlich and Pittelman 1986:81)

gross	*fangs	pain
long	vibrating	ugly
tongue	slimy	big
*rattle	scaly	Stanley (dad
tail	scary	catches snakes)
fast	poisonous	hunt
slithering	*venom	harmful
teeth	*bites	death

Note: *Indicates new vocabulary from story.
The words are presented in the order the students suggested them.

Collocations are considered to be one of the most important relations among words too. According to Nattinger and DeCarrico (1992:20), “*collocations* describe specific lexical items and the frequency with which these items occur with other lexical items”; and a collocational unit consists of a node that co-occurs with a span of words on either side. In each span, there are also particular word classes filled by specific lexical items and thus making a semantic network. Figure 4 shows a vocabulary network activity.

Figure 4: A vocabulary network activity (Based on Redman and Ellis 1989:6)

1

Here is a ‘vocabulary network’. Can you complete it with words from the box?
(Then add *one more* object for each room.)

saucepans	shower	sofa	towels	alarm clock	kettle	video
sheets	sink	washbasin	chest of drawers	coffee table		

In which room do you normally:
 listen to music? waste time?
 daydream? think about your problems?
 have arguments feel most relaxed?
 Now compare your answers with a partner.

As a last point, in Lexical Semantics, two main approaches can be distinguished: decompositional and relational approach; and in decompositional approach, it is claimed that the meaning of a word consists of a combination of a limited number of primitive elements (Işık 2001), which can be analyzed by means of a Semantic feature analysis as in Table 1.

Table 1: Semantic feature analysis grid (types of land with tress) (Based on Januzzi 1995: MET Vol. 4 No. 3)

Features	Extensive area	Limited area	Poor soils	Untouched by people	Tropical climate	Very high rainfall	Diversity of life	Evergreen tress	Closed canopy	Tall, old trees	Thick undergrowth
Types											
Wilderness	U	N	S	U	S	S	S	S	S	S	S
Forest	U	N	S	S	S	S	S	S	S	S	S
Rain Forest	U	N	U	U	U	U	U	U	U	U	U
Plantation	N	U	S	N	S	S	N	S	?	?	N
Grove	N	U	S	N	S	S	N	S	U	U	N
Thicket	N	U	S	U	S	S	N	S	N	N	U

Key: U= Usually, S= Sometimes N= Never / Almost Never ?= Don't know

3.3 THE FIELD THEORY

The history of the field theory goes as far back as the 1930s. Lyons (1977) reports that the theory of semantic fields (or field theory), was first put forward by a number of German and Swiss researchers such as Ipsen (1924), Jolles (1934), Porzig (1934), Trier (1934). The German linguist Trier first defined meaning fields as living realities intermediate between individual words and the totality of the vocabulary. Furthermore, Trier considered the vocabulary as an integrated system of lexemes interrelated in sense. Another researcher, Lehrer (1974 in Carter and McCarthy 1988), describes this theory as the belief that 'the words of a language can be classified into sets which are related to conceptual fields and divide up the semantic space or the semantic domain in certain ways'. It is Carter and McCarthy's (1988:19) claim that:

"the massive word store of a language like English can be conceived of as composed around a number of meaning areas, some large such as 'philosophy' and 'emotions', others smaller and more sharply delineated such as 'kinship' or 'color' or 'carpentry'. Viewing the totality of meaning in this compartmentalized way is the basis of field theory."

Lyons (1977) also states that the vocabulary of a language is not static but in a constant flux; new items take the place of the old ones and thus there occurs an alteration in the internal relations of the whole set. Therefore, the main attempt of the field theory can be summed up as capturing features of the organization of vocabularies, what kind of a change has occurred or still occurring, what the differences between two separate languages are and where each word can be placed in the meaning systems of languages.

According to Palmer (1991), the idea that lies behind the theory of semantic fields is that we can state the meanings of words in terms of their associations with other words. Saussure (1916 in Palmer 1991) explains how important the relationships between words are by giving the example of a knight on a chessboard. He says that this knight is a knight not because of any inherent quality (shape, size etc.), but because of what it can do in relation to the other pieces on the board. Saussure further argues that the field of 'fearing' is divided among three verbs (dread, fear, be afraid of) but if one were absent, it would be divided between two words only.

Aitchison (1994) puts forward that the errors that are commonly known as 'slips of tongue' as in 'he is a born sailure' (success + failure) confirm the results of word association experiments, that words are stored in semantic fields and that coordinates are closely associated. Furthermore, 'tip of the tongue' experiments provide additional support for the semantic field theory. For example, in a study reported in Aitchison, the subjects who could not remember the word *sextant* recalled other navigational instruments, such as *compass* and *astrolabe*.

As reported by Carter and McCarthy (1988), the so-called field theory has always been criticized for a couple of drawbacks. Some of them are: the boundaries among the words that belong to the same lexical field are not clearly-defined; the field theory is also blamed for tending to view words paradigmatically only, whereas the syntagmatic relations – how words combine with other words – are important parts of our word knowledge too. In addition to this, Crow and Quigley (1985) complain that very little empirical evidence has been produced either in favor or

against a semantic field approach. Besides, Hudson (1989) argues that any theory that focuses on word acquisition must provide a mechanism that can explain how stages in lexical development progress and how new entries are built up from a minimal to a completed entry.

Although the Field theory has its shortcomings and problems, it has certainly been influential in both theoretical and applied linguistics. Lehrer (1974 in Carter and McCarthy 1988) suggests that the teacher should be very explicit, giving full information on the relationship between each item in a given field. However, the problems remain that there may be dozens of words in a given field and therefore a researcher needs to look for further organizing principles within a particular field.

3.4 THE SCHEMA THEORY

A similar theory about the organization of language items is the Schema theory, which, according to Heimlich and Pittelman (1986), attempts to explain how information from the text becomes integrated with the reader's prior knowledge, thus influencing the comprehension process.

The Schema Theory essentially says that words do not hold meaning inherently, but only through the access they afford to different stores of knowledge that allow us to make sense of them (McCarthy 1990).

According to McCarthy, the main implications of this view are that language is a process that requires cognitive effort; and therefore, the idea that a dictionary definition or a brief explanation of a new word would be enough for a learner seems very simplistic. In fact, each word has to be matched and integrated into the knowledge store and, above all, success in comprehension depends on activating the appropriate cognitive domains.

Schema theorists claim that everything that is experienced and learned is stored in the brain in networks or categories called schemata. Since these schemata are incomplete, they are constantly being developed and redeveloped. Whenever some

new information is received, the schemata are restructured (Heimlich and Pittelman 1986).

Heimlich and Pittelman argue that the role of vocabulary in this reconstruction is vital, because it serves as a means of labeling the schemata (or ideas) that already exist in the mind, thus playing an integral role in the comprehension process. Therefore, the main goal of vocabulary instruction needs to be to develop additional labels for existing schemata, with good and meaningful instruction adding to the schemata as well.

According to this theory, vocabulary must be introduced in a meaningful way too, in order to help the activation of the already existing knowledge and the linking process of the new information to the old. Heimlich and Pittelman (1986:2) hypothesize that “for vocabulary instruction to be effective, the instruction must not be limited to individual word meanings, but rather attention must be given to the schemata or entire conceptual framework elicited by the word meaning.”

Pearson (1985 in Heimlich and Pittelman 1986) says that the advantage of a concept development approach to vocabulary instruction over the more traditional definition and sentence approach has been revealed by recent vocabulary research. According to Pearson, the emphasis is on the place of a vocabulary item in a reader’s entire semantic repertoire, rather than being limited to what the word means or how it is used in sentences.

Schemas are also effective in reading activities. According to Karakaş (2002), it is obvious that learners make use of their prior knowledge in comprehending a text. In fact, the role of learners in the Schema Theory is an active one and most learning occurs proactively; and when this theory is applied to education, the first step of the learning process is to help students to activate prior knowledge in an organized form that will serve as a base for the new information about to be learned (Phrsson and Denner 1989).

3.5 THE THEORY OF SEMANTIC MAPPING

Semantic Mapping is basically “a graphic arrangement showing the major ideas and relationships in text or among word meanings” (Sinatra, Stahl-Gemake and Berg 1984 in Zaid 1995:6). Januzzi (1995), likewise, describes semantic mapping as a graphic, non-linear, schematic presentation of information and an organizing map of a text. He presents seven steps that should follow each other in a semantic mapping activity and in the fourth step, he talks about the necessity of devising a set of features (or attributes) by which the vocabulary can be discussed and analyzed.

In a process of semantic mapping, any student engages actively in a mental activity of retrieving the prior knowledge and illustrating the concepts that are doing the retrieving. During this process, “Students learn the meanings and uses of new words, see old words in a new light, and see the relationships among words” (Heimlich and Pittelman 1986:3).

In fact, Semantic Mapping has been shown to be the most important factor of reading comprehension (Davis 1944; Spearritt 1972; Thorndike 1971 in Heimlich and Pittelman 1986). Below is given an adaptation of the Johnson and Pearson procedure (1984:12-13) as adapted by Heimlich and Pittelman (1986):

1. Choose a word or topic related to classroom work.
2. List the word on a large chart tablet or on the board.
3. Encourage the students to think of as many words as they can that are related to the selected key word and then to list the words by categories on a sheet of paper.
4. Students then share the prepared lists orally and all words are written on the class map in categories.
5. The joint effort of the class might resemble Figure 5, a map developed by a fourth grade for the topic *Stores*.
6. Students can gain further practice in classification by labeling the categories on the semantic map: a) People b) Kinds c) Problems d) Expenses of owning e) Prices
7. Discussion of the semantic map is perhaps the most important part of the lesson. The purpose of the exercise is to encourage students to become aware of new words, to gather new meanings from old words, and to see the relationship among them.

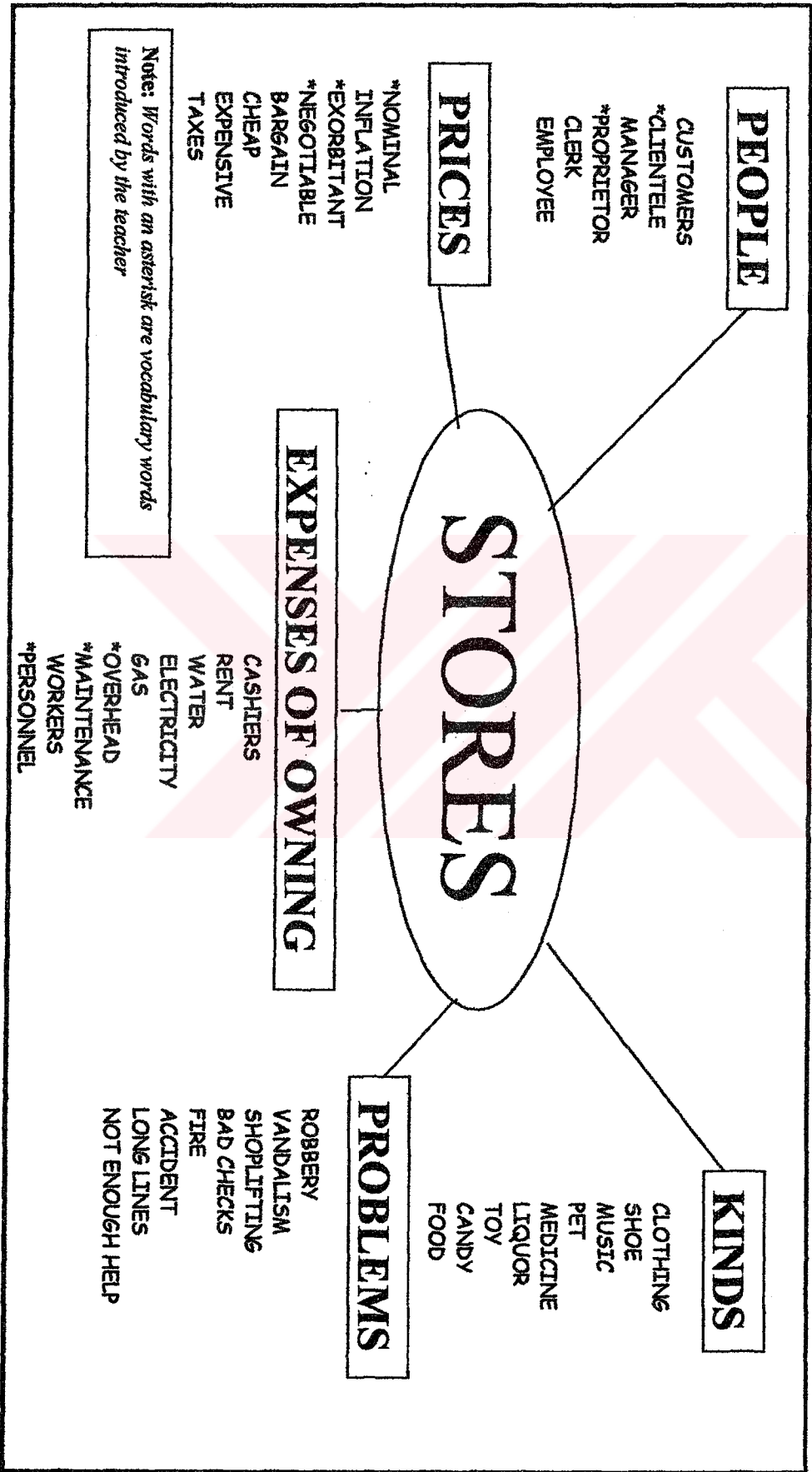
The point of view that Heimlich and Pittelman (1986) have put forward about Semantic mapping is that it is a useful strategy in activating and assessing prior knowledge, comprehending passages, and developing study skills. First of all, the procedure has been found to be useful with almost every kind of student; this versatile strategy can be used with groups of any size; semantic mapping appears to motivate students of all age levels; the teacher has the role of a 'facilitator' and this less directive role encourages students to share in and direct their own learning; this technique facilitates text comprehension.

Crow and Quigley (1985 in Zaid 1995) and Brown and Parry (1991 in Zaid 1995) claim that semantic mapping is an effective vocabulary learning strategy that are used by many language learners.

Zaid (1995) agrees that semantic mapping has always been a beneficial learning and teaching technique for all types of language learners; and adds that students who use semantic mapping manifest considerable improvement in vocabulary development.

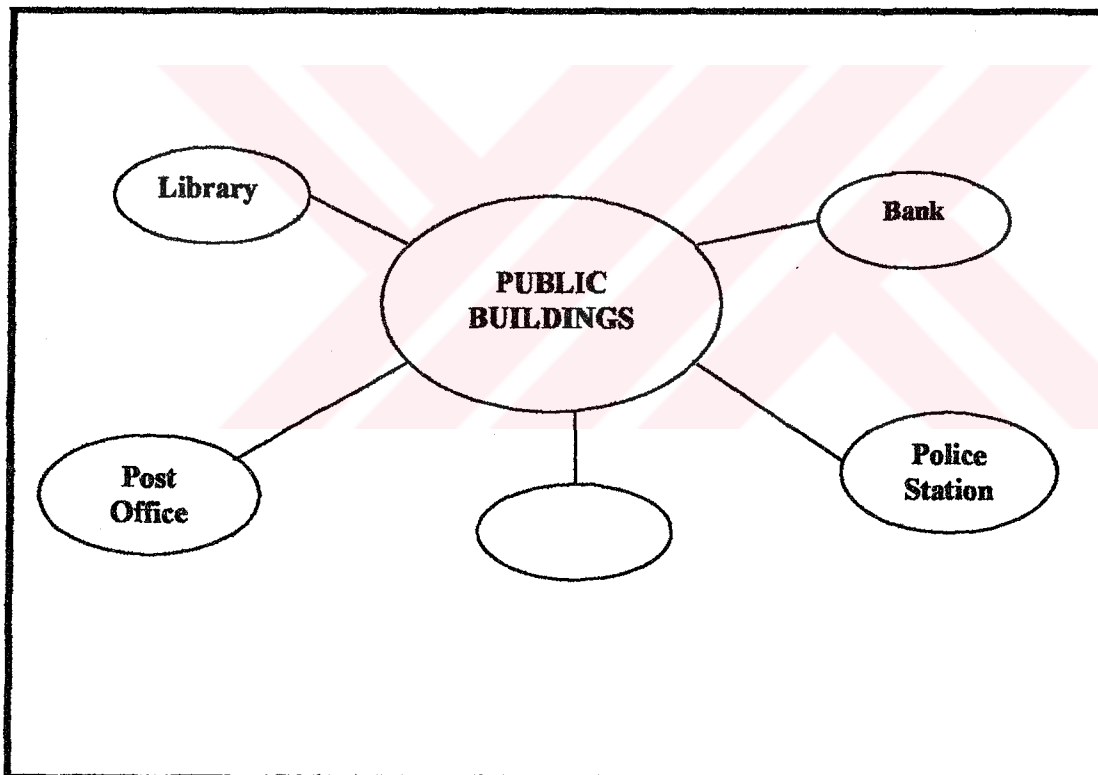
Zaid (1995) lists the merits of the semantic mapping technique as follows: semantic mapping is interactive; it allows for sequential negotiation; it is an information-gap activity; it is a predictive activity; it is student centered; it is teacher-friendly and it is an integrative activity. Figure 5 on the next page shows an example of semantic mapping activity.

Figure 5: Classroom Map for Stores (Based on Heinrich and Pitelman 1986:7)



Tapia (1996) presents two techniques whose aim is to revise and build up the students' vocabulary. The second one of these techniques is called 'the spider' because it consists of a body and a number of legs (the more the better) which the students have to add. According to him, the body should be a superordinate so that the legs are content words, similar to or included in the semantic field of that superordinate item. Tapia suggests doing this activity which is shown as an example on Figure 6 as a competition in the classroom.

Figure 6: 'The Spider Technique' (Based on Tapia 1996: MET Vol. 5 No.2)



3.6 ORGANIZATION OF THE MENTAL LEXICON

According to McCarthy (1990), the fact that adult native speakers of a language know thousands of words and they can summon up the appropriate word in milliseconds has led researchers to believe that there must be a good organization of

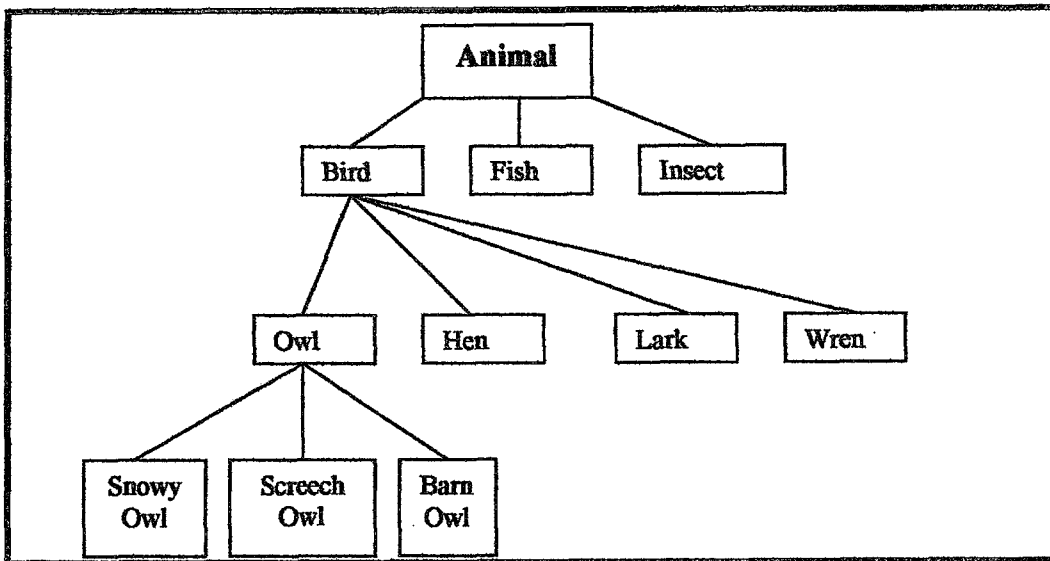
words in our minds. It is a common idea that words are stored in sophisticated network associations (Carter and McCarthy 1998; Aitchison 1994). However, Aitchison (1994) states that most researchers are aware of the difficulty in talking about the detailed organization of the mental lexicon, because of the fact that the structure of a group is likely to depend on the type of word involved – objects, colors and actions might be treated rather differently. She claims, however, that for each group there is a nucleus of closely linked words with other words attached more loosely around the edges.

Aitchison (1994) suggests us to consider the mental lexicon as a sort of connected graph, with lexical items at the nodes with paths between and among the items. Theories of this type are called the network theories. The claim of these theories is that there is an ‘interconnected system’ in our mental lexicon.

According to Aitchison, most of the researchers agree on the existence of such a network, but they hold different views about the structure and organization of it. Early work on this issue suggested that these relations were result of habits. According to this view, because some words often cropped up together, such as pen and pencil, pencil; moon and stars, then they were thought to develop very strong ties.

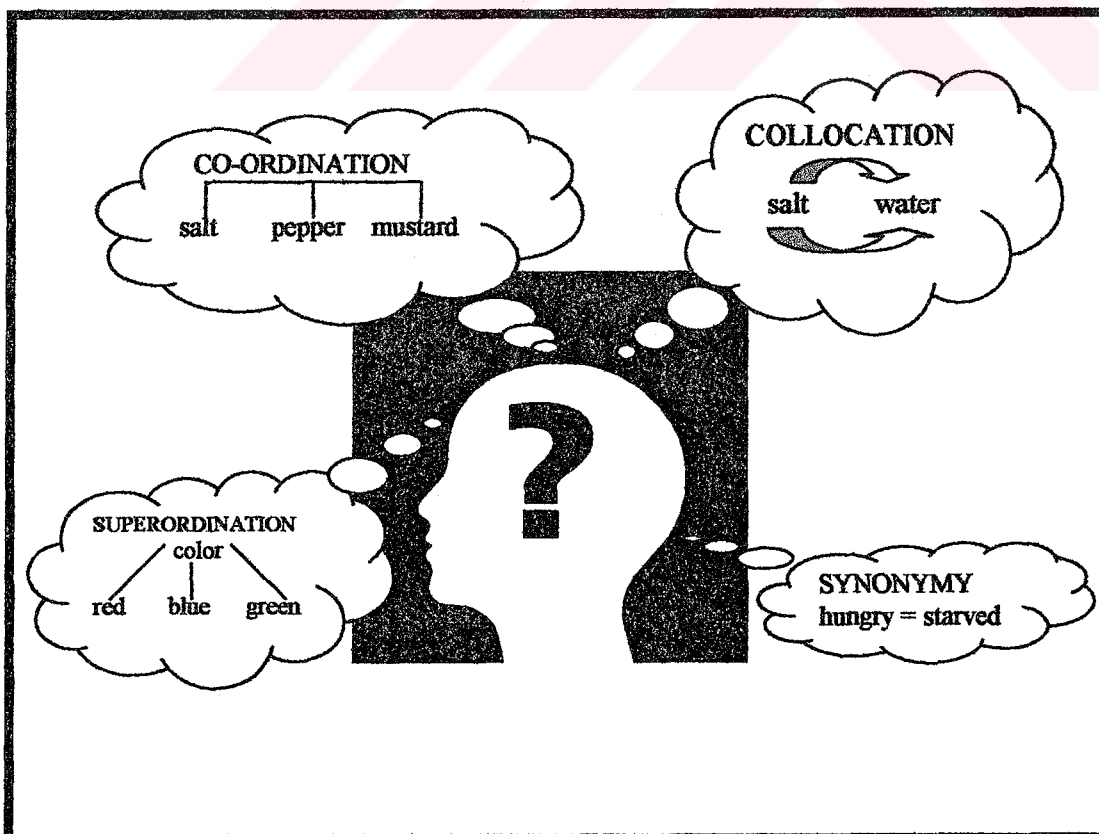
In the late 1960s and early 1970s a number of researchers proposed that the mental lexicon might be organized in a hierarchical way as in Figure 7. Collins and Quillian (1969) were two of them and they suggested that one could test this idea by asking subjects to verify sentences such as ‘A canary is a canary’ or ‘A canary is a bird’ or ‘A canary is an animal’, and timing how long it took to do this. Their idea was that the longer a person had to travel on the tree in order to verify a sentence, the longer it would take – ‘A canary is a canary’ should be verified very fast as there is no need to travel at all – . Although these predictions turned out to be correct, this does not prove the existence of such upside-down trees (Aitchison 1994). According to Aitchison (1994:98): “The general picture of the mental lexicon so far is one in which there are a variety of links between words, some strong, some weak.”

Figure 7: Layers of Superordinates (Based on Aitchison 1994:93)



The most important types of links in these responses are co-ordination, collocation, superordination, and synonymy as can be seen in Figure 8.

Figure 8: Types of links in the word-web (Based on Aitchison 1994:85)



To the question of how the mental lexicon is organized, McCarthy's (1990) metaphors can give an answer to some extent. According to his explanations, the mental lexicon can be seen as a dictionary, a thesaurus, an encyclopedia, a library, and a computer.

To explain each of these briefly, the dictionary metaphor tells that a word and its meanings are written in together; this information is stored as an alphabetical list and thus can be searched quickly. There is a slight difference with this metaphor and the thesaurus metaphor, which implies that meaning is classified into semantic fields that are composed of closely related words.

The encyclopedia approach suggests that there are crucial links between words and other types of knowledge. According to the library metaphor, the mind always tries to capture updated input and limitless storage, all under the control of cataloguers, and quick paths to the word needed. Finally, the computer metaphor gives us the idea of dynamic input, constantly updating itself and re-sorting its data.

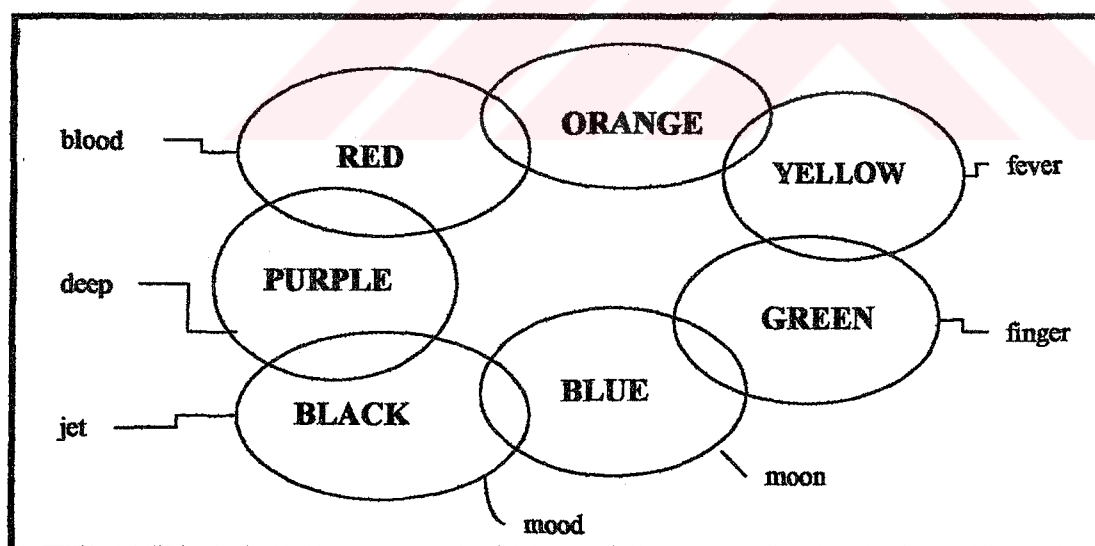
McCarthy (1990), relying on the thesaurus metaphor, suggests that the mind consists of bundles of related words, united into larger bundles, though he himself admits that this view is an oversimplification; because he concludes that the mental lexicon is a complex structure that is never static. It is indeed constantly receiving new input which has to be integrated into the existing store. Therefore, there is a constant renewal and readjustment of webs of meanings and associations. However, as Channel (1988 in McCarthy 1990) states, we should not necessarily assume that the mind organizes the lexicon of a second language in the same way as it does in the first. Another thing we should not automatically claim is that the processes of comprehension and production necessarily operate on the same mental bases.

Aitchison (1994) explains this organization with an analogy of coins. According to her, words are like coins, with sounds on one side and meaning and word class on the other. According to her, the information contained on the two sides are stored and organized differently. Aitchison further suggests that lexical fields can be likened to groups of words which are organized in the form of clumps; and the

words in a given lexical field are closely interlinked to each other with different types of bonds.

Aitchison (1994) also draws attention to the fact that selection errors – selecting an inappropriate word from the mental word-store – can shed light on the organization of the mental lexicon. Besides that, research results of aphasic patients reveal that they often produce a co-ordinate or close relative of the target, as in orange for ‘lemon’ or table for ‘chair’. This suggests that some co-ordinates are so closely linked in the mental lexicon that brain-damaged people may find it difficult to distinguish between them. The strong links are collocational links and connections between co-ordinates; and links between hyponyms and their superordinates are weaker. Aitchison also suggests that these links provide a general framework for further links that can be made as the situation requires. An example of these links in the word-web is given in Figure 9.

Figure 9: Strong links in the word-web (Based on Aitchison 1994:90)



Studies on mentally distorted patients also showed that some of them were able to cope with certain type of topic but not others as if they had a neurotic block about some kinds of words. Aitchison (1994:88) explains this phenomenon as follows:

“These cases suggest that topic areas are stored to some extent independently and that some semantic fields can be damaged without affecting others, even though in normal speakers one would not expect this degree of isolation between areas.”

According to Lewis (1997), the mental lexicon is larger than we previously thought. From what he says, the fact that the mental lexicon is able to hold many semantic webs at the same time can be inferred easily. Although there is no complete agreement, it has generally been estimated that the size of the mental lexicon of any English speaking educated adult is tens of thousands; and the size of L1 and L2 are believed to be different.

The size of the mental lexicon of an L2 learner would vary from several thousands to ten thousands depending on the level of language proficiency and the length and density of the language study (Nation 1990); and such a learner is likely to have much smaller vocabulary. Furthermore, the mental lexicon is not static but in constant change due to the new additions (McCarthy 1990).

Some debate about the organization of the mental lexicon focused on L2 and one claim has been that the operations of the L2 lexicon are phonological rather than semantic, implying that while in the native speaker's mental lexicon, there are strong semantic links between the words, the connections in L2 are primarily phonological (Soudek 1982; Hatch 1983; Laufer 1989 in Singleton 1999).

According to Aitchison (1994), the most serious shortcoming of the experiments on this field is that they cannot tell us about the probable structure of the human word-web. This drawback is partly a result of the obligation to give only one particular word, and it is partly because the links between words are multifarious. Aitchison illustrates her claim by explaining her research results: the most common responses to the word 'butter' were *bread* (the most popular one), then *yellow*, *soft*, *fat*, *food*, *knife*, *eggs*, *cream*, *milk*, *cheese*. These responses represent several types of link: *bread* is eaten alongside *butter*, *yellow* and *soft* describe 'butter', whereas *cream*, *eggs*, *milk* and *cheese* are other kinds of dairy food. "One would expect the mental lexicon to treat these various connections differently from one another." (Aitchison 1994:83-84).

In word association tests, the ten commonest responses given to words butterfly, hungry, red, and salt are listed in Figure 10.

Figure 10: Word association responses (Based on Aitchison 1994:84)

	BUTTERFLY	HUNGRY	RED	SALT
1	moth	food	white	pepper
2	insect	eat	blue	sugar
3	wing(s)	thirsty	black	water
4	bird	full	green	taste
5	fly	starved	color	sea
6	yellow	stomach	blood	bitter
7	net	tired	communist	shaker
8	pretty	dog	yellow	food
9	flower(s)	pain	flag	ocean
10	bug	man	bright	lake

Aitchison (1994) explains that the commonest responses are members of the 'co-ordination' group such as *salt* and *pepper*; *butterfly* and *moth*; *red*, *white*, *blue*, *black*, *green*. Opposites are in this category too, because they are co-ordinates in a group consisting of only two members, as with *left* and *right*. Again according to the findings, the second most common group was the collocation group, in which there were words that were likely to be collocated with the stimulus in connected speech, as with *salt water*, *bright red* etc. The third kind of relationship was superordination, which occurred less often than the two mentioned before. In this group there is usually a cover word which includes the stimulus word such as the word '*insect*' for the stimulus '*butterfly*'. Finally, synonymy is the last type of relationship that appeared occasionally in the study. Some participants preferred to write a rough synonym of the original word such as with *starved* beside '*hungry*'. Depending on numerous research results, Aitchison concludes that links between co-ordinates are strong.

3.7 RESEARCH FINDINGS ON USING SEMANTIC SETS IN THE CLASSROOM

Some evidence was found for the view that words hunt in packs (Thornbury 1998). Research has also shown that individuals tend to recall words on the basis of

the semantic field in which they are conceptually mapped (Abdullah 1993). As Heimlich and Pittelman (1986) report, studies about the effectiveness of semantic mapping and field theory have supported the use of these two techniques as effective teaching strategies. In a study, fourth through sixth grade children who learned target vocabulary words through semantic mapping and semantic feature analysis significantly outperformed students who were taught the words through contextual analysis (Johnson, Tom-Bronowski and Pittelman 1982 in Heimlich and Pittelman 1986). Hagen (1980, in Heimlich and Pittelman 1986) reports about a similar study where the students involved in the semantic mapping process have showed a great level of interest, and thus she suggests that the strategy has a great potential as a motivator.

Aitchison (1994) points out that an experimenter can get useful data about the structure of the mental lexicon by focusing on the slips of tongue of a person. The technique Aitchison suggests for such an experiment is very simple. An experimenter can simply present the subject with a series of words, and from each item ask her to name the first word which comes to mind.

According to Kruse, Pankhurst and Smith (1987), the findings of earlier experiments reveal that the responses in a word association test are in fact a reflection of the learners' lexical store. Similarly, Aitchison (1994) claims that experiments can give interesting insights into the mental lexicon but she adds that they cannot be accepted and trusted blindly because of the fact that the results of some badly designed experiments can be quite misleading.

Karbon, (1984 in Heimlich and Pittelman 1986) who examined the resources and processes used by children coming from different cultural groups, concluded that students do exploit their unique experiences as a means of developing vocabulary. Therefore, she recommends that teachers take into consideration the student's prior knowledge in vocabulary teaching, emphasizing that semantic mapping is an alternative technique to the instruction of vocabulary items that focuses on the relationships between new and already known words. Similarly, Margosein, Pascarella and Pflaum (1982 in Heimlich and Pittelman 1986) discovered the greater

impact of semantic mapping on vocabulary acquisition than the context cue approach for seventh and eighth graders of Hispanic background.

Research results of Channel (1988 in McCarthy 1990) shows that the tip of the tongue phenomenon is similar in L1 and L2 suggesting that 'general shape' is an important feature of the mental lexicon of L1 and L2 in terms of matching input to stored patterns and in retrieving specific items from such stored templates.

The results of several studies have revealed that the knowledge of insufficient vocabulary prevents the learners from communicating appropriately (Sarigül 1999). Crow and Quigley (1985) report the findings of a study in which they compared a semantic field group with a word-by-word group. The findings of this study lent support to the use of the semantic field approach.

Research in several areas reveals that an approach to vocabulary study based on the semantic organization of our universe might be fruitful (Crow and Quigley 1985). Similarly, depending on research results, some psychologists like Sakharnyi (cited in Crow and Quigley 1985) have suggested that an approach based on semantic field relationships would be beneficial.

Aitchison (1994) notes that the experiments about the use of word associations in vocabulary teaching were extremely simple but useful; since they revealed at least three important results: The first one is that the participants almost always selected an item that belonged to the semantic field of the original word. For example, nobody said *nail* or *poker* in response to *needle*, despite the fact that these are thin pointed objects too. Most of them mentioned another thing somewhat connected to sewing such as *thread*, *pin* or *sew*, suggesting that word clusters relating to the same topic are stored together. The second important finding was that people almost always chose the partner if the original item was a part of a pair, as in *husband* and *wife*, or has a clear opposite, as in *big* and *small*. Finally, the third finding is that adult participants tended to pick up a word of the same word class: a noun was responded with a noun, an adjective with another adjective, and so on.

Depending on all these findings, Aitchison (1994) asks the indispensable question: “Can we build up a detailed mental map from these responses?” and rather hopelessly gives the answer that in spite of the enormous amount of information available from word association experiments, there are still a number of problems. First of all, trying to find a single word in response to a given word item is a somewhat unnatural kind of activity. Therefore, the research results may not be reflecting ordinary speech processes. Second, a dramatic change is observed in the results if a word is presented within a group, rather than alone. For instance, participants normally respond to the word *Moon* with such words as *Sun*, *night* and *star*. However, if the same word (*Moon*) is presented alongside words like *elephant*, *hall*, *whale* and *stadium*, people usually reply with the word *big*. This last problem, which reveals that a word’s association can be changed so easily, prevents a perfect and detailed explanation of the mental lexicon and how vocabulary items are represented in it.

To sum up, word association results unearth an important fact that words are organized semantically.

3.8 CHAPTER SUMMARY

This chapter mainly focused on the relations among vocabulary items in English. In order to clarify these relations, some basic theories about the issue were explained in detail. Next, useful information about the organization of the mental lexicon was given. Finally, research findings on the use of these relations in a learning atmosphere were explained by referring to some famous researchers and their studies.

CHAPTER FOUR

THE PROCESS OF VOCABULARY LEARNING, TEACHING & TESTING

4.0 INTRODUCTION

This chapter reviews the process of vocabulary learning, teaching and testing. It reports the literature on some basic issues like retaining vocabulary in the memory, perception of information and the structure of short-term and long-term memories. This chapter also sheds light on using pictures in vocabulary teaching since pictures have been used abundantly at the presentation, practice and testing stages of both the pilot study and the main study. Furthermore, it elaborates on using semantically related words and unrelated words in a language classroom. Finally, this chapter reviews and presents the literature about how to test vocabulary and types of vocabulary tests.

4.1 HOW TO TEACH AND LEARN NEW VOCABULARY

According to Thornbury (1998), vocabulary teaching has come a long way. McCarthy (1990) agrees with this idea and lists a number of difficult questions concerning vocabulary teaching such as: how much vocabulary should be introduced? ; How often does it need to be repeated? ; What are the best ways of committing new words to memory? ; And when can new vocabulary be said to be learnt?

Schmitt (2000) asserts that vocabulary learning is still a mystery although we now know that words are not instantaneously acquired. Rather, they are gradually learned over a period of time from numerous exposures. Similarly, Brown (1994) calls attention to the difficulty of a complete explanation about language learning by saying that learning a second language is a way of life and that we are wholly affected as we struggle to reach beyond the limits of our first language. Erten (1998a), likewise, states that learning vocabulary is often a very difficult challenge for language learners.

Brown (2001:16) claims that “a glance through the past century or so of language teaching will give an interesting picture of how varied the interpretations of the best way to teach a foreign language are.”

Seal (1991) proposes a vocabulary teaching procedure that is composed of three stages. In the first stage, the teacher conveys the meaning through various means such as a mime, a synonym or an anecdote. S/he can use visual aids, word relations, pictorial schemata, definition, explanation, examples, context, word roots, or affixes to make the meaning clear. Second, the teacher checks that the students have understood the meaning properly. In this stage, s/he uses such exercises as fill in the blanks, matching pairs, sorting, and pictorial schemata. Finally, in the third stage, the teacher consolidates and tries to get the students to relate the word to their personal experience by using it in a personally meaningful context. The most common activities of this stage are problem-solving tasks, values clarification, writing a story or a dialog, discussion and role-play. However, according to Seal (1991), even after these three stages, students will still need time for extra vocabulary study, which can well be done outside the classroom.

Sarıgül (1999) points out that vocabulary learning is more than just the use of a dictionary; and it requires learning the semantic and lexical systems of that language. According to Haycraft (1993), massive vocabulary without the structure, idiom and expressiveness to carry it does not bring mastery of a language. He also warns language teachers that it is necessary to limit the vocabulary that is to be introduced.

The role of learners in the process of vocabulary learning is undeniable. According to Sanaoui (1992 in Köksal 1998), the students with a structured approach to vocabulary learning are much more successful in creating self-initiated opportunities, and in learning words both inside and outside the classroom. Flower and Berman (1989) point out that it is useful to make a list of the words that are commonly used while talking about a subject.

Another issue about vocabulary teaching is the role of context. It is a common belief that second language learners can very easily acquire large amounts of vocabulary in context. Haycraft (1993) suggests that teachers should present new words in spoken form first and preferably in a context and that they revise them regularly afterwards.

Seal (1991) believes, however, that this view is largely untested even though it is quite attractive. According to him, learning vocabulary through a reading passage depends on such factors as proportion, density, percentage etc. Similarly, Nation (1982 in McCarthy 1990) argues that the role of context in getting the meaning of a word is rather doubtful. Carter and McCarthy (1988) support this view by claiming that research is frustratingly inconclusive as to whether presenting and learning words in context is superior to learning words by pairs of translation equivalents. Nevertheless, most language teachers believe that contextualized input is vital (McCarthy 1990).

4.2 RETAINING VOCABULARY IN THE MEMORY

Gairns and Redman (1986) note that understanding how we store information in the memory and why some chunks of it are more durable than some others seems to be a matter of concern for anyone who is interested in the issue.

Thornbury explains how we store new words in the memory as follows:

“The way words are stored in the mind resembles less a dictionary than a kind of network or web. This is an apt image: the mind seems to store words neither randomly nor in the form of a list, but in a highly organized and interconnected fashion –in what is often called the mental lexicon.” (2002:16)

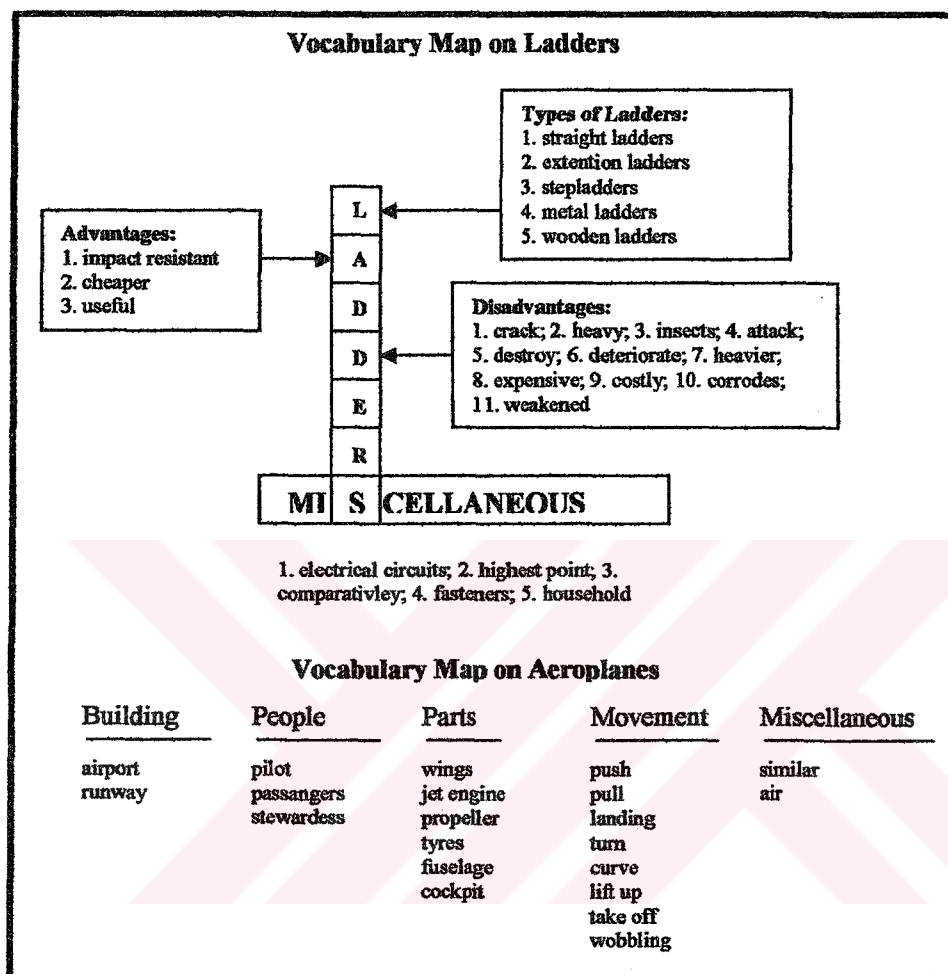
Daneman (1988 in Abdullah 1993) hypothesizes that improving a reader's vocabulary is not sufficient for comprehension; and that the facility with which s/he can access the known word meanings represented in memory is also very important. Another researcher, Lewis (1999), puts forward some factors which, according to her, influence the memory. These factors are: attitude, cultural and personal preferences, time, meaningfulness, amount and quality and depth of processing.

Research results on the structure of human memory have revealed the fact that related events are stored in our memories in a connected way (Abdullah 1993). Abdullah points out that, any event that a person has witnessed is composed of numerous parts, but the memory stores all these different parts together and provides him/her with great help when he/she tries to remember that event later. In other words, we can see the whole of a past event only due to this structure of the memory.

Abdullah (1993) reports some research findings which, according to him, have revealed that just like events, vocabulary items are stored in our memories in semantically related networks; and in such a network, the activation of a word will automatically activate other related words, which will then aid comprehension. Such activated words are also useful in making predictions and anticipations about a reading passage. Therefore, classroom activities should be designed accordingly. According to Abdullah, the emphasis needs to be on the building up and reinforcement of a semantic network of interrelated words and facilitating automatic lexical access. Abdullah also presents some activities which, he says, provides in helping students store words in semantic clusters of interrelated words. One of these activities namely the 'Vocabulary Map' is shown on Figure 11, on page 47. The other activities he suggests are briefly:

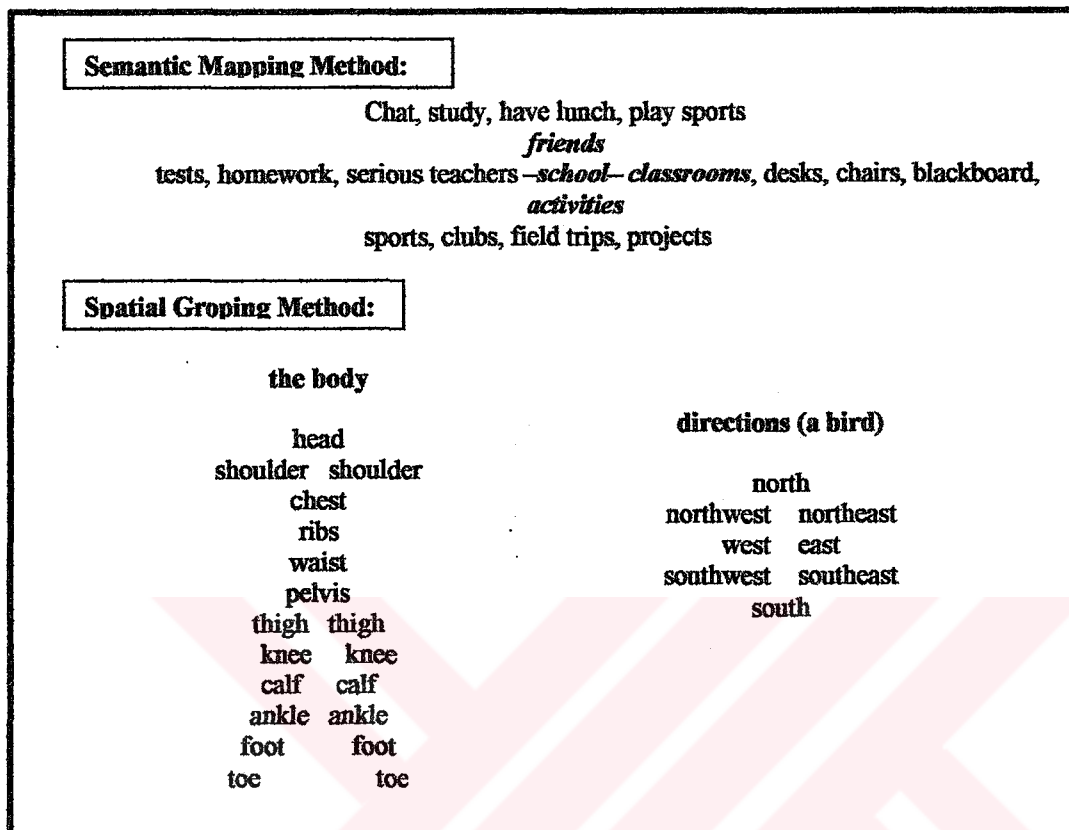
- 1)**Word Prediction:** The teacher writes a topic on the board, and students predict the words that would be associated with the topic. In another version of this activity, the teacher writes down some key words related to a topic and students are asked to predict the topic.
- 2)**The Odd Man Out:** The students have to select the odd word that does not fit into a list, giving reasons for their choice.

Figure 11: Two different vocabulary maps (Based on Abdullah 1993:12)



Holden (1999) presents various vocabulary learning activities; and in what he calls 'Peg Method', he advises new learners that in order to learn related words better, they should create a series of images based on the relationship of the words. In another activity, namely 'Semantic Mapping Method', Holden suggests that the learners try arranging a group of words into a picture which has the main idea or a new word at the center, or the top, and then think of words which they associate with the central word as in Figure 12. Still, in another method namely –Spatial Grouping Method– he suggests writing words in various ways and drawing pictures on a piece of paper as shown in Figure 12 to help learners recall them later more easily.

Figure 12: 'semantic mapping method' and 'spatial grouping method' (Based on Holden 1999:46)



4.2.1 PERCEPTION OF INFORMATION

It is a general assumption that we keep the new information in its unanalyzed forms in the visual and auditory memories for a short period of time before it arrives at the short-term memory (Reed 1992). According to Erten (1998b), the stage of perception of information includes two important notions: attention and sensory stores. In other words, human beings first attend to the information and then store it in memory. Ellis (1994) points out that learning takes place only when a person realizes that there is something to learn. Furthermore, the perception of the new-coming information initiates a new learning process.

According to Phrsson and Denner (1989:3), “valuable learning is rooted in organization” and if learners do not organize what they are taught, they will learn little since well organization with the help of various semantic organizers at the time

of learning facilitates recall –retrieval from memory– greatly. Recently, it has been recognized clearly that the key to learning and memory is organization (Bruner 1960 in Phrsson and Denner 1989)

Phrsson and Denner (1989) explain a ‘semantic organizer’ as a system that helps students assemble information so that it is processed into their schemata. They also add that even learners who have not been successful with traditional approaches have been able to display greater advances with this system. Phrsson and Denner further claim that when educators teach the usage of these organizers, they are in fact teaching the pupils a set of strategies and promoting schemata that they can utilize throughout life. Besides that, these strategies can be adapted to all lessons without any extra time to make teaching more efficient and lessons far more effective.

Human beings are incapable of attending to more than a certain amount of information at a time, not every piece of information arriving at our sensory organs is attended to. As soon as the new information has been attended to and perceived, it is temporarily kept in sensory memories. In the next step, the information is transferred to the short-term memory for further elaboration and processing and finally it is transferred to the long-term memory which is the permanent store of the human memory system (Erten 1998b).

Nattinger (1988 in Altınok 2000) states that comprehension requires understanding the words and storing them and also committing them to memory whereas production requires retrieving them from memory and using them in appropriate situations. Similarly, Read (2000) claims that recognizing a vocabulary item is different from recalling it and that the difference is between being able to recognize the word when it is presented and being able to recall it when prompted to do so. According to Altınok (2000), the instructor’s aim in teaching vocabulary should be to strengthen this memory storage.

Lewis (1999) suggests various techniques for remembering, some of which are: looking for patterns, making associations, using visual imagery, using all the senses, applying information, linking new learning with old.

4.2.2 SHORT TERM MEMORY

According to Schmitt (2000:129), "Memory has a key interface with language learning."

Lewis (1999) discusses the distinction between short- and long-term memories. The main idea of her discussion is briefly that the aim of a language learner is to move information from short- to long-term memory. Lewis claims that one thing that moves the information from short to long-term memory is repetition which, according to her, is likely to lead to better memory if you are thinking of the meaning at the same time.

Erten (1998b) states about this discussion that the short-term memory analyzes and relates the new information to previously gained knowledge. It is a general assumption that the short-term memory has a limited capacity for processing.

Although the duration of the short-term memory is very short (Gairns and Redman 1986), the duration of information and the frequency of rehearsal in the short-term memory play important roles in the quality of its storage in the long-term memory (Atkinson and Schriffin 1968).

Schmitt (2000) points out that forgetting is a natural fact of learning and we had better consider partial vocabulary knowledge as being in a state of flux, with both learning and forgetting occurring until the word is mastered and fixed in the memory. As Lewis (1999) points out, what is really important in language learning is being able to remember something when required.

Finally, Şener (2003) draws attention to the fact that it is a difficult task for learners to get the meanings of vocabulary items and keep them in the memory. Similarly, Gairns and Redman (1986) assert that we need to work much harder to commit information to long-term memory.

4.2.3 LONG TERM MEMORY

The Long-term memory is the permanent store of the human memory system and it has an unlimited storage capacity (Gairns and Redman 1986). Schneider and Shrifin (1997:2) describe the structure of this memory as “a large and permanent collection of nodes that become complexly and increasingly interassociated and interrelated through learning.” Another thing about the long-term memory system is that it can store very different forms of information ranging from smells to pictures.

Laufer and Osimo (1991) put forward the idea that long-term retention is one of the biggest problems in learning new words; and that the difficulty in recalling words is experienced not only in the production of spoken or written discourse, but also in comprehension. Since successful retention of words plays an important role in the expansion of one’s vocabulary size, numerous studies have been concerned with the factors which determine long-term retention of memory (Laufer and Osimo 1991).

Some theorists doing research on memory and recall have pointed out that semantically organized data can be better recalled (Bousfield 1953; Tulving 1962; Bower, Clark, Lesgold Wizenz 1969 in Crow and Quigley 1985). Furthermore, they have pointed out for years that long-term retention of information that has been organized into semantic categories is superior to retention of randomly presented material.

An opposite view about this issue comes from Tinkham (1993) who draws attention to the recent research motivated by interference theory and the distinctiveness hypothesis. He claims that semantically and syntactically similar new words might actually impede rather than facilitate the learning of the new vocabulary items. Tinkham (1993), in two experiments, found that learning words that are grouped in semantic sets interferes with the learning of words. He found that if learners are given words which share a common superordinate concept (such as words for clothes) in list form, they are learned slower than words which do not have a common superordinate concept. This finding suggests that we should not give wordlists to our learners which have words that come from the same semantic set, but rather from a variety of semantic fields.

According to Tinkham, the findings of the most recent studies suggest that students have more difficulty in learning new words presented to them in semantic clusters than they do while learning semantically unrelated words. Depending on his research on the issue, he also claims that learning semantically related words take more time. However, Finkbeiner and Nicol (2003) point out that although learning semantically related words appears to take *longer*, it is possible that words learned under these conditions are learned *better* for the purpose of actual language use.

Tinkham (1993) also hypothesizes that the reason why ESL curriculum writers make use of semantic sets appears to be motivated not by theoretical concerns or empirical support, but rather by the writer's dedication to methodology or syllabus that accompanies their approach to second language development. Furthermore, in such course books, semantic clusters can easily be supported by substitution activities or tables.

4.3 TEACHING VOCABULARY THROUGH PICTURES

The use of pictures, drawings and diagrams in the EFL classroom is not a new concept. It is a general assumption that all teaching can be greatly improved by the use of visual materials because they can help make the learning experience more memorable. Furthermore, pictures and diagrams, when used intelligently, can promote the most effective kind of learning in adults as well as children, in primary school as well as in secondary school; everywhere.

According to McCarthy (1990:115), "pictures are obviously a versatile resource for introducing new words; where real-life objects cannot be brought into the classroom, a picture often does the job and saves much laborious explanation." Seal (1991) discusses the importance of using pictures in vocabulary teaching and notes that ESL professionals frequently have their own personal stock of pictures.

McCarthy (1990), however, draws attention to the fact that pictures have their limitations too; and perhaps the most common ones are that visual stimuli can be misleading and that some words cannot be easily explained by a visual stimulus. For

example, words that denote judgments, opinions and evaluations are perhaps the least suitable ones for visual stimuli.

Kiss (1968) notes that a graph that shows a network of words is only complete if every node pair is connected by an arc in at least one of the two possible directions. According to Seal (1991) such diagrams can easily be created and taught; thus whenever a new word is presented within the schematic frame, it can be readily interpreted. Moreover, Seal claims that the connection between word relations and pictures explaining these relations can be greatly enhanced by the use of some form of visual aid or diagram.

One researcher that does not hold the same idea with Seal is McCarthy (1990), according to whom, these diagrams offer no guarantee that the words will be better remembered and more correctly used. According to him, such diagrams are useful because they offer an alternative to the disorganized word list or the more traditional ways of arranging related words in lists of synonyms, antonyms and so on. It's McCarthy's assertion that the only way to explain words fully is to show their sense relations with other words. McCarthy also reminds us that webs, nets, boxes, and lines are just metaphors for the complex structure of the cross-referencing mechanisms in the mind.

4.3.1 THE RATIONALE FOR USING PICTURES IN VOCABULARY TEACHING

'A picture is worth a thousand words' is a well-known saying in English and there are similar sayings in almost every language of the world. It is obvious that one good picture can tell more than many words; in other words, what words cannot explain, pictures can.

As early as 1897, the educator John Dewey (cited in Wilemann 1993) emphasized the importance of using visual images in the instructional process when he said he believed that the image is the great instrument in instruction. According to him, what a student gets out of any subject presented to him is simply the images,

which he himself forms with regard to it. Card sets illustrating vocabulary have long been available; and their obvious usefulness in eliciting words has always been used by teachers (Kolf 1989).

Visual aids not only help us to understand but also to remember. The memory of a picture lasts much longer than that of a word. Two of the most important reasons for using pictures and diagrams, therefore, are comprehension and retention (Skrzpczynska 1992). Similarly, Wilemann (1993) suggests that visual images increase learning retention, which is one of the primary goals of educators. Stevick (1987) uses the term 'mental imagery' a lot and claims that memory and availability depend on mental imagery.

According to Cundale (1999), the use of pictures and diagrams can be supported by the fact that almost all of the learners, especially young ones find visuals very interesting. Field (1988) points out that the value of drawing for an EFL classroom is undeniable. Shehzad (1994), likewise, claims that in order to teach some vocabulary items, teachers can draw simple pictures for which no artistic skill is required; and they will be valuable aids to both teachers and learners.

Fengying (1996) emphasizes the importance of diagrams in showing the relationships between words by claiming that without a diagram, it is hard to see the relationship between the original meaning of a word and the meaning of it in an idiom; and that with the help of a diagram, we can see its relationship more clearly. Furthermore, according to her, diagramming can also show the history of the culture of a word.

Ellis and Sinclair (1989 in McCarthy 1990) hold the view that an illustrated network of a vocabulary item is useful for the learner to record personal associations of a word. Küçükylmaz (2002) adds that such maps are visual languages and the aim of it is to identify the concepts and the relationships between words and various concepts. Furthermore, these maps are one of the easiest ways to learn content and one of the most popular knowledge representation tools. According to him, these maps are also powerful evaluative utilities.

Some further explanation for the usefulness of pictures and diagrams comes from recent research on how the brain functions and the application of this knowledge to language learning and teaching (Hahn 1981). Furthermore, experience has shown that the more senses are involved in the learning process, the better human memory works (Gerngross 1992). Finally, learning English can really be fun with pictures and diagrams (Dale 1963).

4.3.2 TYPES OF PICTURES AND DIAGRAMS

Different researchers classify visualization and visual stimulus in different ways each focusing on a different perspective. For example, Mollica (1992) states that visual stimulus consists of a series of photographs which may be grouped into following categories: humorous, descriptive, dramatic, tragic and cultural.

Some exclusively visual materials aim to reproduce reality to look as much like the original object as possible (pictures), whereas others tell their story through lines and symbols –diagrams– (Dale 1963). Lindstromberg (1985 in Seal 1991) calls such instruments ‘pictorial schemata’ which include Venn diagrams, grids, tree diagrams, or stepped scales.

Finally, Dale (1963) divides visuals into two main categories: motion pictures and still pictures. Still pictures are further categorized as projected still pictures and non-projected still pictures, which include photographs, diagrams, cartoons, classroom visual aids and commercial artwork, advertisements, posters, postcards, clipart, illustrated flashcards and charts.

4.3.3 KEYS TO EFFECTIVE USE OF PICTURES IN THE CLASSROOM

Visual materials, like any other teaching tool, can be used well or poorly. According to Nielsen (1984), they are more likely to be used well if the following

criteria are observed: establishing an ample categorized file; using pictures that present a single, clear activity or object; holding the picture so that it is most visible; avoiding changing the semantics of a picture; giving clear directions. Jakes (1989) adds to these criteria the role of encouraging students to interpret, criticize and create a situation rather than simply describing what they can see.

In 1954, the educator Edgar Dole (cited in Wilemann 1993), one of the early advocates of the audiovisual techniques, summarized the communicator's role in relation to visual communication as making visual symbols rich and strong with meaning for the student. Today, teachers are charged with the task of helping students learn through the visual images available in a learning environment.

4.4 TEACHING SEMANTICALLY RELATED WORDS VERSUS SEMANTICALLY UNRELATED WORDS

Although many SLA theorists and practitioners endorse (implicitly or explicitly) the seemingly sensible position that teaching new L2 vocabulary in semantically grouped sets is an effective method of teaching, there is actually very little empirical evidence to support this position (Finkbiner and Nicol 2003). This empirical evidence is explained in part 3.7 on page 39.

According to Carter and McCarthy (1988:18), one of the most important issues which need to be taken into consideration about the process of vocabulary teaching and learning is: "are the vocabularies of languages structured or organized internally or are they random, unordered lists of words?" Carter and McCarthy claim that this question does not have a clear-cut and straightforward answer. Although there may be some principles for some vocabulary items, it is very doubtful if they can be extended to the whole of the vast word store.

Teaching words in related sets has been neglected for many years, and only recently has it gained importance (Hill 2000 in Altmok 2000). Carter and McCarthy have a critical point of view about the meaning relations among the words. They firstly ask the question 'Does meaning organize the vocabulary?' and put forward

that if we give a positive answer to this question, then the best way to give organized access to the mental lexicon should be by teaching vocabulary through meaning and meaning relations. Carter and McCarthy (1988:12) further note that “the more words are analyzed or are enriched by imagistic or other associations, the more likely it is that they will be retained”.

According to Richards (1976 in Altınok 2000), speakers of a language not only recognize the general probability of occurrence of a word, but also, at the same time, they recognize the probability of words being associated with other words. However, since students generally learn words through definitions or in isolation, they have little chance of remembering them. Hedge (2000) clearly states that the questions about the organization of the mental lexicon and the relationships among words can only be answered by means of linguistic studies.

Haycraft (1993) argues that it is easier to teach the vocabulary items that belong to the same topic area, because the learner will be able to form a pattern of interrelated words in his mind. McCarthy (1990) emphasizes that if topics are carefully chosen, they can give a structure to vocabulary teaching which learners are able to perceive and understand. McCarthy also discusses what a ‘topic’ is and concludes that it cannot easily be defined. For example, what does the topic of ‘air travel’ include? According to him, another problem arises in deciding on the topic to be taught in class. Still another problem is to predict exactly what words are the most frequent or useful within any given topic.

In a similar way, Seal (1991) draws attention to the importance of choosing the vocabulary items to be taught from the same lexical domain such as words relating to marriage, words of size and shape, adjectives about mood etc. He claims that such an approach would have several advantages. According to him, by learning items in sets, the learning of one item can be reinforced by the learning of another. Besides that, items that are similar in meaning can be differentiated easily. Furthermore, vocabulary teaching becomes a more secure and tangible process. Finally, follow-up activities can be more easily designed.

Wharton and Race (1999) suggest a number of activities for vocabulary teaching and add that language teachers should consider teaching new vocabulary items in related sets. According to them, a language teacher can either choose sets of hyponyms (e.g. names of family relations), or sets that are linked to the same context (e.g. subjects studied at school. It is their claim that most people find it easier to learn lots of new words if these words are presented as related sets.

Haycraft (1993) supports teaching vocabulary items in a semantically related way by likening teaching a large number of words in an unrelated way to trying to imagine a tree with no trunk and branches, but only leaves. Similarly, Kelly (1986 in McCarthy 1990) underlines the claim that making semantic links between words is superior to rote learning.

McCarthy (1990) states that lexical relations describe words in terms of one another within systematic sets of related words; and that using word associations in vocabulary teaching has gained currency over the last decade and has found its way into materials. Similarly, DeCarrico (2001) states that it would be wrong to consider vocabulary only in terms of single words and word families, since vocabulary learning involves more than just knowing the meaning of a given word –it also involves the knowledge of words that usually co-occur, namely collocations–.

Al-Kufaishi (1988) puts an extra emphasis on teaching how the words of the English language are constructed of smaller elements and how they can be taken apart into their component units. According to him, the advantages of such an approach are shortly as follows: learners can master and more easily retain words whose relationships can be clearly seen and understood; in this way, each word reinforces and is reinforced by others; learners gather a better insight into familiar words and a clearer and sharper picture of their meaning; and finally knowledge of how the language is built provides learners with a feeling of security, which is in itself an important factor in language learning.

Tinkham (1993) claims that semantically and syntactically similar new words might actually impede rather than facilitate the learning of the new vocabulary items.

According to Tinkham, the findings of the most recent studies suggest that students have more difficulty in learning the new words presented to them in semantic clusters than they do while learning semantically unrelated words. Tinkham, in two experiments, found that learning words that are grouped in semantic sets interferes with the learning of words. Tinkham also found that if learners are given words which share a common superordinate concept (such as words for clothes) in list form, they are learned slower than words which do not have a common superordinate concept. Therefore, we should not give wordlists to our learners which have words that come from the same semantic set, but rather from a variety of semantic fields.

Tinkham also claims that learning semantically related words take more time. However, Finkbeiner and Nicol (2003) point out that although learning semantically related words appears to take *longer*, it is possible that words learned under these conditions are learned *better* for the purpose of actual language use.

4.5 TESTING VOCABULARY

Schmitt (2000) questions the reasons for vocabulary testing and says that one of the most important reasons is to measure how well target words and word families are known by the learners. According to Schmitt, another important purpose is to measure how many words or word families learners know. Madsen (1983) claims that the main purpose for vocabulary tests is to measure the comprehension and production of words used in speaking and writing; and advises that there should be a direct relation between how to test vocabulary and how we teach it. Madsen also adds that a test writer should avoid presenting words in isolation.

Read (1997:303) clearly summarizes the purpose of vocabulary testing with the following sentence:

“If vocabulary knowledge is accepted as a fundamental component of second language proficiency, it is natural to expect that one of the primary goals of language testing will be to assess whether learners know the meanings of the words they need to communicate successfully in the second language.”

According to Nation (2001), testing vocabulary is not different from testing other areas of language knowledge and use. Therefore, the same criteria of reliability, validity, practicality and washback should be taken into consideration while preparing and evaluating vocabulary tests. According to Goulden, Nation and Read (1990), the teacher should necessarily indicate simply and clearly to the respondents how they should decide whether they know a word or not.

Heaton (1988:51) states that “a careful selection, or sampling, of lexical items for inclusion in a test is generally a most exacting task.” He complains that many of the traditional tests include items that are rarely used in ordinary speech in spite of the fact that they are frequently found in many English textbooks. According to him, the test writer should first make a decision about focusing on active or passive vocabulary. Second, s/he should decide whether the lexical items in a test should be taken from the spoken or the written language.

Madsen (1983) holds the same view as Heaton in that simply choosing difficult words or random lists of words does not make much sense. He asserts that somehow we need to find out which words our students need to know first. Furthermore, as Heaton (1988) suggests, tests of vocabulary should avoid grammatical structures which the students may find difficult to comprehend. Heaton actually finds it appropriate that in vocabulary tests of elementary stages, the stem should be replaced by a picture. Madsen (1983) claims that teachers can use pictures in vocabulary tests of children to avoid language skills that have not been mastered yet.

Heaton also draws attention to the fact that most of the difficulties arising from the testing of collocations can easily be avoided by the testing of word sets, because according to him, in such tests the students’ familiarity with a range of associations is measured. He also adds that it is much more efficient to test words from the same word class.

Finally, Weir (1990) discusses testing discrete linguistic points and puts forward that this approach has some advantages. Firstly, such tests yield data which

are easily quantifiable, as well as allowing a wide coverage of items. Then, they are more efficient and have higher reliability.

4.5.1 TYPES OF VOCABULARY TESTS


According to Thornbury (2002), there are two main groups of vocabulary tests, namely tests of recognition and tests of production. Context can be a determining factor in grouping the vocabulary tests as well. Like in testing other language skills, vocabulary tests can be qualitative or quantitative. As an example to qualitative testing, assessment scales can be given; and tests of lexical density are examples of the quantitative language testing.

According to Read (2000) there are four main categories of language tests. These are: the Vocabulary Levels Tests, the Eurocentres Vocabulary Test (EVTS), the Vocabulary Knowledge Scale (VKS), and the Test of English as a Foreign Language (TOEFL). Furthermore, Read (2000) states that the most commonly used test formats in vocabulary testing are: multiple-choice items of various kinds; matching of words with synonyms or definitions; supplying an L1 equivalent for each L2 word; and the checklist (or yes-no) test, in which test takers simply indicate whether they know the word or not.

4.5.2 USING PICTURES IN VOCABULARY TESTING

In testing, pictures and simple diagrams can be very useful as in Figure 13.

Figure 13: Two different examples of vocabulary tests (Based on Masterson 1986)

<p>A:  I was late so I _____ to work.</p> <p>B: (run) I was late, so I _____ to work.</p>
--

In Figure 13, both A and B elicit the answer 'ran'. However, 'A' requires the student to write the missing word without the infinitive verb clue. This, according to Masterson (1986), is more realistic in terms of a student's experience when s/he is actually using a second language. If s/he cannot think of a verb, no one is going to supply the infinitive. What is more, question 'A' allows the students to use their lexical resources and reply in a variety of ways such as 'I was late, so I dashed/ hurried/ sped/ jogged/ raced/ to work'. All of them are perfectly good answers.

The question types in this study are different from the one given above, which has been prepared for a grammar test; because in this study, not grammar but the vocabulary knowledge of the participants is tested. However, we can easily convert them into a vocabulary testing items as in the following:

A: What is the English word for the action shown in the picture below!



▶ _____.

B: What is the Turkish equivalent of the word given below!

Run ▶ _____.

As a final word, the items that are used in this study are similar to the first one of these two different vocabulary test types.

4.6 CHAPTER SUMMARY

This chapter was a discussion of the issues related to the process of vocabulary learning, teaching and testing. Having given a description of vocabulary and discussed some basic issues related to it in the previous chapters, the next chapter will be devoted to the methodology of this study.

CHAPTER FIVE

METHODOLOGY

5.0 INTRODUCTION

In this chapter, the methodology pursued in the study will be described in detail. Firstly, the research questions of this study will be introduced together with a summary of how these questions are to be addressed. Second, there will be a discussion of the differences between qualitative and quantitative research methodologies in order to clarify their advantages and disadvantages. Next, the pilot study and its contributions to the main study will be discussed. Finally, the methodology used in the main study will be described.

5.1 RESEARCH QUESTIONS & SUMMARY OF THE METHODOLOGY

This study is composed of one pilot study and one main study. The aim of this study is to investigate: 1) the effectiveness of using semantically related sets in vocabulary teaching 2) the effect of the length of any vocabulary item on its retention in the memory.

In order to undertake the pilot study, two separate groups were formed for a true-experimental study according to the mean of the students' past five English exam results. In the pilot study, students in the experimental group were presented twenty-seven words in three semantically related sets of vocabulary items in a three-week period. In other words, each week one set which contained nine related words was taught to this group. In the first week, animal vocabulary was presented; in the second week, a set composed of nine food items and in the third week, names of nine occupations were presented as a related set. On the other hand, the students of the

control group were presented these same twenty-seven words not in related sets but separately. In other words, each week three words from each set were chosen making a total of nine words. However, in both groups, everything other than the sets of words was the same. For example, the new words were taught and tested in the same atmosphere with completely the same techniques within the same duration.

Before the beginning of the study, the students in both groups were given a pretest that contained fifty items to make sure that none of them knew the words to be taught beforehand. If a word was known even by one student in this test, it was omitted. Depending on the results of this test, nineteen words were omitted. Four of the remaining thirty-one were also omitted before the study.

Then at the beginning of each lesson, the students were again tested with a pre-test to be completely sure that they did not somehow learn the words before the instruction.

At the end of each lesson, students were tested with the vocabulary presented in that lesson. Furthermore, from the second week on, different versions of post-tests of the previous week(s) were given for a second time in order to measure the rate of recall and forgetting at regular intervals.

Finally, a comprehensive vocabulary test containing all the vocabulary items presented during the experiment was given one week after the experiment ended.

The data collected were then analyzed to find answers to the following research questions of the pilot study:

RQ 1: How much of the new vocabulary that is presented through two different techniques will actually be learned by the participants; and depending on the results, which technique will appear more successful?

RQ 2: What is the relationship between the classroom success of the students and their success in the experiment?

5.2 QUALITATIVE & QUANTITATIVE RESEARCH METHODOLOGIES

Bell (1993) claims that different methods of data collecting use different styles, traditions or approaches; and that no approach can be automatically accepted or rejected. Furthermore, there are even occasions when qualitative researchers use quantitative techniques, and vice versa. Therefore, the methodology of a study should be dependent on the nature of the inquiry and the type of information required.

Bell further (1993:5) makes a distinction between Qualitative and quantitative research methodologies, and explains that:

“Quantitative researchers collect facts and study the relationship of one set of facts to another. They measure, using scientific techniques that are likely to produce quantified and, if possible, generalizable conclusions.”

On the other hand, she further claims that:

“Researchers adopting a qualitative perspective are more concerned to understand individuals’ perceptions of the world. They seek insight rather than statistical analysis. They doubt whether social ‘facts’ exist and question whether a ‘scientific’ approach can be used when dealing with human beings.” (Bell 1993:6)

Erten (1998b) considers educational research as a systematic investigation endeavoring to broaden our understanding of phenomena and adds that the different methodologies chosen by researchers in order to realize their research objectives represent different research paradigms.

Erten (1998b:151) elaborates on the qualitative-quantitative distinction that quantitative research methods are based on the scientific/positivist paradigm whereas qualitative methods depend on the naturalistic/interpretative research paradigm. Erten further claims that quantitative research methodologies assume a stable reality and try to find casual relationships between different constructions by means of controlled and objective instruments without taking into consideration the mind of subjects. In this kind of research, ‘objectivity’ is the key word and it is of crucial significance in order to verify and falsify hypotheses through collecting reliable and replicable numerical data.

Qualitative research, on the other hand, denies a stable reality and instead accepts a dynamic and subjective reality. Therefore, Denzin and Lincoln (1994:2) assert that “objective reality can never be captured”. In addition to this, the qualitative research paradigm makes use of naturalistic uncontrolled data collection procedures in order to broaden the scope of understanding of phenomena. Qualitative research also takes full account of an individual in order to explore and describe constructs by collecting rich and in-depth data.

Bell (1993) draws attention to the fact that each approach has its strengths and weaknesses and each one can be suitable or unsuitable for a particular context. According to Erten (1998b:152), “the strength of one paradigm seems to be the weakness of the other”. For example, a quantitative research design produces generalizable results; and depending on these results, different groups of students can be compared in order to test hypotheses. On the other hand, by means of a qualitative research design, one can make an in-depth exploration of different factors in a particular context.

According to Thornbury (2002), vocabulary knowledge can be assessed both qualitatively – by using assessment scales, for example – and quantitatively – by doing word counts to test for lexical density, for example.

McDonough and McDonough (1997) give a detailed description of a concept called the ‘action research’ and claim that a great deal of the discussion of teachers as researchers has always been in connection with the concept of action research. According to them, the term itself is a rather broad and complex field. However, it can be described as a research methodology based on people’s real-world experience, which cannot always be rightly addressed by experimental methods. McDonough and McDonough report that the most popular definition of action research is that of Carr and Cermis. It is as follows:

“a form of *self-reflective* enquiry undertaken by *participants* in social situations in order to *improve* the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out”. (Carr and Cermis 1986:162 in McDonough and McDonough 1997)

Depending on this definition, McDonough and McDonough (1997) list the characteristics of action research as follows: it is participant-driven, reflective, collaborative and context-specific; and it leads to change and the improvement of practice, not just knowledge in itself. They, however, state that these characteristics are not usually very strict.

As far as this study is concerned, both qualitative and quantitative research methodologies were used in the research for a balanced data collection procedure. The pilot study is mainly based on a true-experimental research design; and a quasi-experimental design was chosen for the main study, the aim of which was to get generalizable numerical data for more objective results using the natural groups of students.

In addition to the tests, the main study included a short questionnaire based on self-report, which was qualitative in nature. The aim of this questionnaire was basically to have an idea about the retention process of the newly-introduced vocabulary items. In other words, it aimed at finding out about the activities or strategies that the students might have used to learn the new words outside the classroom. Thus, qualitative research design was incorporated into the main study, which highly depended on quantitative data such as pre- and post-test results in order to measure the retention of vocabulary items. By means of these test results, the effectiveness of the two techniques could statistically be interpreted.

In connection with the data collecting process, the data analysis process entailed both qualitative and quantitative analyses too. The quantitative analysis shed light on whether there were any consistent patterns of relationship between presenting words in semantically related sets or mixed sets and the success of students in vocabulary learning. On the other hand, the qualitative analysis provided information about the whole learning process of new words introduced during the study.

5.3 PILOT STUDY

The main reason why the pilot study was carried out before the main study was to see the possible problems, find solutions to them and make the necessary changes. A pilot study also seemed to be reasonable in order to try out the materials and the lesson plans before the main study, since similar materials and lesson plans would be used in both studies. Finally, it could help the researcher see the reaction of the subjects and design the main study according to these reactions.

In the following section, a brief account of this study will be given together with a description of the subjects and the materials.

5.3.1 SUBJECTS AND SETTING

Subjects:

The subjects of the pilot study were the fifth year students of İstiklal Primary School in Çanakkale with the beginner level of English Language proficiency. All of the students were native speakers of Turkish.

A total of 34 students participated in this study. The students were divided into two equal groups according to their marks of the past English exams. There were 17 students in each group. Furthermore, in both groups there were 9 male and 8 female students as shown in Table 2.

Table 2: Distribution of the students in each group of the pilot study.

	Gender	Number	Percentage (%)
Experimental Group	Male	9	26.47
	Female	8	23.52
Control Group	Male	9	26.47
	Female	8	23.52
Total		34	100

The research was carried out with students of age eleven, in two groups designed according to the rules of a true experimental study. In Turkey, primary school students start to learn English when they are in the fourth year. Although a

few students knew some English words before the fourth year, most of them did not know any English at all before the formal instruction at school.

As mentioned before, the subjects were placed in the groups according to the mean scores of the past five English exams they took from the beginning of the English course at their fourth year. Firstly, the mean of these exams was calculated and then they were placed in two groups starting from the students who got the highest scores.

The means of grades of these groups were also tested for any significant differences through an 'Independent Samples T-test' on SPSS (Statistical Package for the Social Sciences) Program. The T-test results are shown in Table 3 below.

Table 3: T-test results showing the equality of the two pilot study groups

GROUP	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>experimental</i>	74,05	1,17	22,34	,164	32	,562
<i>control</i>	72,88		19,30			

As can be seen in Table 3, the experimental group had a mean grade of 74,05 out of 100 while the control group students earned a mean grade of 72,88 with a mean difference of 1,17 between the two groups. Such a difference was not statistically significant which indicated minimal differences ($p > .05$). Therefore, such a minimal difference was considered to be acceptable to pursue with the study.

Setting:

Istiklal Primary School, where the study was carried out, gives education both in the mornings and in the afternoons; and therefore there are two groups of students, namely the morning group and the afternoon group. The main reason why the fifth year students were chosen for the pilot study was that this was the only class which had not been divided into two groups as the morning group and the afternoon group but there was the morning group only. This fact made it easier to carry out a true experimental study because the students could come to school again in the afternoons only for the purpose of the experiment.

Another reason was that it did not seem to be a good idea to mix two different classes rather than dividing up one big class; because it might create an unnatural atmosphere for the students and this might affect the results of the study in a negative way. In other words, the fact that the participants knew each other and the atmosphere beforehand was considered important for the reliability of the results.

5.3.2 MATERIALS AND PROCEDURES

Individual vocabulary items were introduced by means of flashcards in this study (See Appendix 3 for an example flashcard). Therefore, a flashcard was prepared for each vocabulary item used in the study.

First of all, three different word sets were chosen, namely 'animals', 'food' and 'occupations'. Then, seventeen words were found for each group. Then, a pretest composed of fifty-one vocabulary items were given in order to decide on the words to be used in the study. The words already known by the students and four others were discarded (a total of twenty-three words) while the remaining words were chosen to be used in the study. Finally, nine semantically related words were chosen for each semantic group. In other words, nine vocabulary items about animals, nine about food and nine words about occupations were chosen for the pilot study. Table 4 shows the words used in the pilot study.

Table 4: The words used in the Pilot Study

Semantic Sets (<i>Experimental Group</i>)			Mixed Sets (<i>Control Group</i>)		
1st Lesson (Animals)	2nd Lesson (Food)	3rd Lesson (Occupations)	1st Lesson	2nd Lesson	3rd Lesson
Cow	Pear	Plumber	Goat	Pear	Plumber
Hen	Lettuce	Cook	Garlic	Ape	Lobster
Seal	Onion	Scientist	Tailor	Scientist	Bread
Owl	Leek	Farmer	Cock	Leek	Accountant
Goat	Melon	Accountant	Lettuce	Owl	Cow
Cock	Olive	Tailor	Cook	Dentist	Olive
Eagle	Garlic	Dentist	Onion	Hen	Eagle
Lobster	Bread	Architect	Farmer	Architect	Melon
Ape	Peanut	Engineer	Seal	Peanut	Engineer

Some further criteria for selecting words for the task were the length of the words and their similarity to Turkish words (cognates). Whereas the vocabulary related to food and animals were usually short (one syllable, at most two syllables), the words in the 'occupations group' were generally long (two or three syllables). However, as the words had to be chosen from the words that the subjects did not know before, it was almost impossible to choose words that included exact numbers of syllables and letters. Therefore, the length of the words had to be approximated.

Another criterion in selecting vocabulary was not to choose any word similar to its Turkish equivalent. Because, using such cognates as 'doctor - doktor' seemed to be illogical since it was certainly easier to learn them than learning any other word. Furthermore, using cognates would create question marks and doubts about the reliability of the results. Therefore, such similar words were not included in the study in order to avoid these doubts.

After the vocabulary selection procedure, in the experimental group (Group A), these words were presented in semantic sets (each week one set was presented) while in the control group (Group B), each set was divided into three words; and each week a mixture of vocabulary items was presented (each week three animal vocabulary, three food vocabulary and three occupations; still a total of nine words).

In the presentation stage, everything other than the grouping of words was the same. In other words, the same words were presented and tested in the same way, the same atmosphere and within the same duration in three weeks. The time allocated for the presentation of each word, the follow-up activities, pre- and post-tests, and even the number of repetitions were approximately the same. Furthermore, the students were not allowed to write down the words for further study outside the classroom. In other words, it can be said that the test results reflected their performance in the classroom.

In the pilot study, each vocabulary item was presented with flashcards. The flashcards were displayed in front of the class and the new words were introduced by means of them. Then came the repetition drills. The flashcards were then attached to

the board and new words were reinforced by some more repetition. Next, a matching type of exercise was given to the students. Finally, the students were tested with a post test that included the words presented in that session.

Another important thing about the pilot study was that in all stages of instruction, pictures were actively used. In the presentation stage, flashcards were used to present the new vocabulary items; in the practice stage, the same pictures were again used in the exercises (see Appendix 1) that included very simple sentences such as

- 'What is this?'
- 'This is a...';

Finally in the testing stages (both pre-tests and post-tests) pictures were used in the matching type of tests (see Appendix 2 for examples of these tests). The reason for using the same pictures in all stages of instruction was to avoid the difficulty and confusion that identifying different pictures might cause.

5.3.3 ANALYSIS

The data collected from the tests were firstly analyzed to find an answer to the following research question of the pilot study:

RQ 1: How much of the new vocabulary that is presented through two different techniques will actually be learned by the participants; and depending on the results, which technique will appear more successful?

The scoring of the immediate and delayed tests was done by assigning one point to each correct answer. Since there were nine questions in each of the immediate post-tests, the highest score for each was nine. On the other hand, the number of items in the delayed post-tests changed from week to week.

There were nine items in the test given one week after the presentation of the first group of words; eighteen items in the second delayed test given one week after the first delayed test and finally twenty-seven items in the last delayed test given one week after the presentation of the last group of words.

For all these tests, the means and the standard deviations of each group were calculated. Furthermore, Independent Samples T-test was conducted in order to evaluate the results better and to see if there were any significant differences between the two groups of students.

The results of these analyses are presented in the tables below. Table 5 contains the means and standard deviations of the Immediate Post-test 1.

Table 5: T-test results for the Immediate Post-test 1

GROUP	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>experimental</i>	6,52	,88	2,15	-1,220	32	,964
<i>control</i>	7,41		2,06			

An examination of Table 5 shows that in the first immediate post-test, the mean for the related sets (experimental) group was 6,52 and the standard deviation was 2,15. On the other hand, the mean for the control group was 7,41 and the standard definition was 2,06. As can be seen on this table, the control group gained a higher mean than the experimental group, which may be interpreted as that presenting the new vocabulary items in related sets had a negative effect on learning. Otherwise, the mean of the experimental group would be higher. However, when we look at the significance, we see that the difference is not a significant one ($p > ,05$). Because this significance implies that the difference may be a result of chance factors, and therefore it is not important.

Below, Table 6 shows the T-test results for the first delayed post-tests given one week after the presentation of the first set of words in order to test the long term retention and the rate of forgetting of the new vocabulary items.

Table 6: T-test results for the Delayed Post-test 1

GROUP	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>experimental</i>	5,94	-5,8824E-02	2,81	-,059	32	,398
<i>control</i>	6,00		3,02			

As shown in Table 6, the experimental (related set) group gained a mean score of 5,94 with a standard deviation of 2,81 while the control group gained 6,00 with a standard deviation of 3,02. When compared with Table 5, this might indicate that in one week, the students in the control group forgot more with a mean difference of 1,41 out of 9 than the students in the experimental group (0,58 out of nine). Another result that may be drawn according to this table is that after one week, the discrepancy between the means of the two groups became less significant. However, there are still no statistically significant differences between the two groups ($p > ,05$).

The experiment of the second week did not produce any statistically significant results either. Below, Table 7 shows the T-test results for the immediate post tests of the second week.

Table 7: T-test results for the Immediate Post-test 2

GROUP	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>experimental</i>	6,52	,58	1,97	,784	32	,921
<i>control</i>	5,94		2,38			

According to Table 7, the experimental group, who received a vocabulary instruction with related set of words, gained a higher score than the control group. An examination of this table shows that the mean for the experimental group was 6,52 with a standard deviation of 1,97 whereas the control group gained a mean score of 5,94 with a standard deviation of 2,38.

However, the significance implies that the difference between the two groups is not statistically significant ($p > ,05$). In spite of the fact that the related sets group got a higher mean score, the significance revealed that there were no statistically significant differences between the two groups.

This tells us that using related sets of words in vocabulary instruction is not statistically more effective than presenting these words in semantically unrelated groups.

Below is given Table 8, which shows the t-test results for the delayed post tests of the second week given one week after the presentation of the words and in the second week of the experiment. This test included a total of eighteen words.

Table 8: T-test results for the Delayed Post-test 2

GROUP	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>experimental</i>	9,94	,82	5,35	,415	32	,105
<i>control</i>	9,11		6,18			

As seen in Table 8, the mean scores of the two groups are very close to each other producing no significant difference again. The experimental group gained a mean score of 9,94 while the mean score of the control group is 9,11. A significance of 0,105 ($p > ,05$) indicates that the difference between the two groups can easily be attributed to some chance factors rather than having a significant meaning for vocabulary instruction. The T-test results for the Immediate Post Tests 3 given just after the third application are presented in the following Table 9.

Table 9: T-test results for the Immediate Post-test 3

GROUP	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>experimental</i>	5,52	-,23	1,97	-,285	32	,105
<i>control</i>	5,76		2,77			

As this table demonstrates, the mean for the experimental group was 5,52 out of 9 whereas the mean for the control group was 5,76. Furthermore, the standard deviation for the experimental group was 1,97 and the standard deviation for the control group was 2,77. A mean difference of 0,23 ($p > ,05$) indicated that there was a slight difference between the two groups of students although it was not statistically significant. In other words, these results are not significant enough to prove anything about the role of semantically related sets in vocabulary instruction. Therefore, depending on these results, we cannot talk in favor of or against using related sets of vocabulary items in vocabulary instruction.

The delayed post tests of the third week whose t-test results are given in Table 10 below did not produce any significant results either. A reading of this table suggests that the means of the two groups are very close to each other: the students in the experimental (related set) group got a mean score of 12,70 out of 27 with a standard deviation of 7,12. On the other hand, the students in the control (mixed set) group gained a mean of 12,41 with a standard deviation of 12,41.

When the t-test results of the third delayed post tests are interpreted, a significance of 0,126 with such a small mean difference as 0,29 out of 27 indicates that there is no statistically significant difference ($p > ,05$) between the experimental group and the control group in terms of long term retention either.

Table 10: T-test results for the Delayed Post-test 3

GROUP	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>experimental</i>	12,70	,29	7,12	,109	32	,126
<i>control</i>	12,41		8,58			

RQ 2: What is the relationship between the classroom success of the students and their success in the experiment?

Another important point in this study was the relationship between the classroom achievement of the students and their achievement in the tests of this experiment. It is obvious in Table 11 that there is a high correlation between the students' English marks and their test results in the experiment. For example, a correlation value of 0,642 shows a very significant relationship ($p < ,001$) between the marks of the students and their immediate test results in the experiment. Similarly, a correlation value of 0,646 indicates that most of the students who are successful in the classroom are also successful in the delayed tests of this study.

Table 11: Correlation results showing the relationship between the marks and test results

		Marks	Im. Post T.	Del. Post. T.
Mean of the past five English exams of the students	Pearson Correlation	1,000	,642**	,646**
	Sig. (2-tailed)	,	,000	,000
	N	34	34	34
Mean of the Immediate Post Tests	Pearson Correlation	,642**	1,000	,898**
	Sig. (2-tailed)	,000	,	,000
	N	34	34	34
Mean of the delayed Post tests	Pearson Correlation	,646**	,898**	1,000
	Sig. (2-tailed)	,000	,000	,
	N	34	34	34

* p<. 05

** p<. 01

Finally, there is even a higher correlation between the immediate post test results and the delayed post test results. A correlation value of 0,898 reveals a very strong relationship between the results of the immediate tests and delayed tests; that means most of the students who were successful in the immediate tests were also successful in the delayed tests; and most of those who were unsuccessful in the immediate post tests were also unsuccessful in the delayed post tests.

In short, the results of this data analysis revealed that even though there were slight differences between the experimental group and the control group when the test results were taken into consideration, these differences were not statistically significant ($p > .05$).

In other words, these test results indicated that teaching words in semantically related sets did not result in better learning for the related sets (experimental) group since there were no statistically significant differences between the mean scores of the students who learned the new words in related sets and those who learned these words in unrelated groups. However, it appeared that there was a high correlation between the students' achievement in the classroom and their achievement in the tests of this study.

5.3.4 IMPLICATIONS FOR THE MAIN STUDY

The analysis of the data from the pilot study suggested that presenting nine words to a group of 17 students would not yield fruitful results. First of all, the number of students caused problems with the significance of the results in the study. Then, the number of vocabulary items for each session seemed not to be enough to create a real distinction among the students of the two groups.

Next, a true experimental design as used in the pilot study caused numerous problems in the application stage. For example, the presentation had to be postponed twice because some students could not attend. Furthermore, it took much time to make two different groups and assign the students to these groups. Also, it was not always possible to find an empty classroom in the school; therefore everything had to be arranged in detail before each lesson.

Finally, the fairly long duration of the study most probably affected the results because of some interfering factors. For example, some students studied the words outside the classroom. Even though they were not allowed to write down the words during the presentation stage, some of the students said they revised these words with their parents at home.

By taking into consideration all these negative sides of the pilot study, a better main study is to be planned to get statistically significant results. In order to eliminate the negative factors in the main study, the duration of the study will be shorter; the number of the subjects and vocabulary items will be increased to make a better distinction between the two groups. Also, for more significant results a quasi-experimental research design rather than a true experimental one will be chosen; because a study designed as a quasi-experiment seems to be much more practical for the researcher; and since natural groups of students are not distorted, more significant results can be obtained through such a study.

5.4 MAIN STUDY

5.4.1 SUBJECTS AND SETTING

Subjects:

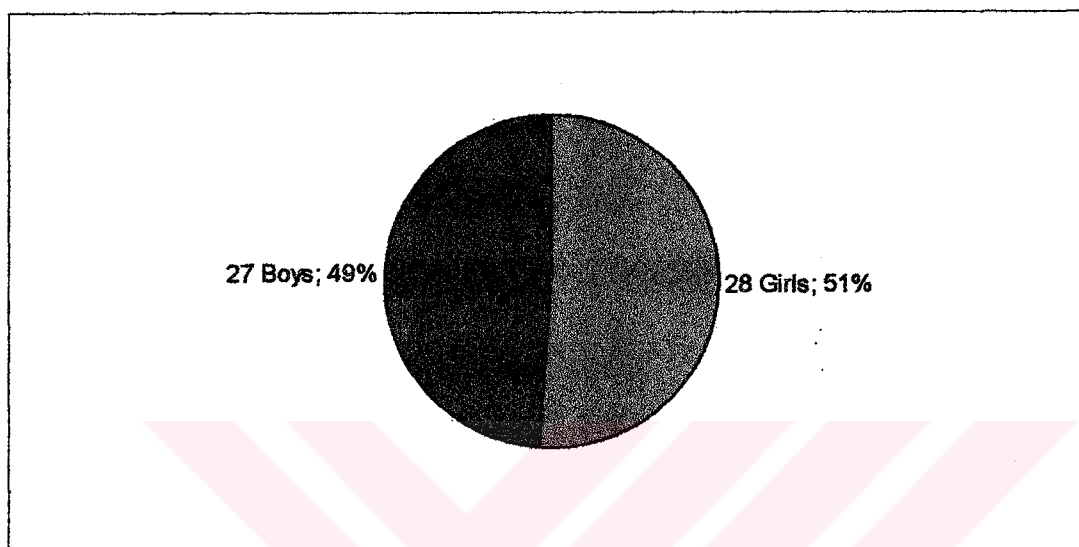
The study was done on two groups of participants who were all the fourth year students of a state primary school (İstiklal Primary School in Çanakkale) in two different classes namely Class 4/A and Class 4/B. In other words, the researcher did not make any changes to the natural groups, but considered the two different classes as two different groups ready for the research. Each group was used as an experimental and control group alternatively. It was important in order to prevent the same group from taking the same treatment conditions every time. It was also important to eliminate the group factor which might become an important problem while dealing with different groups of participants. Furthermore, all of the new words were presented to all of the students in each group. In other words, all of the participants of this study were presented with all of the 80 words selected for the study. Therefore, the aim of this study is not to compare two different groups of students but to make a comparison between two different groups of words; namely, the semantically related sets of words and semantically unrelated sets of words.

The main reason why the fourth year students were chosen for the main study was that their vocabulary knowledge was small and this fact facilitated the selection of vocabulary items. In other words, the researcher did not have much difficulty in finding words that the students had not met before, because at the beginning of the study, there were relatively few vocabulary items in the students' mental dictionaries. Otherwise, finding the sets of words that contained the same number of syllables and letters would be really hard if not impossible.

Initially, there were a total of 60 students in the study. Out of these 60 students, 29 were female students and 31 were male students. However, five of them were discarded later since they could not attend to all sessions. Therefore, the data collected from the remaining 55 were used at the analysis stage of the study.

Figure 14, below, shows the percentage and number of the students who participated in the main study.

Figure 14: Percentage and number of the students who participated in the main study.



The following Table 12 shows the final distribution of the students that participated in the main study. An examination of this table reveals that Class 4/A had an equal number of male and female participants (14 male and 14 female) whereas there were 13 male and 14 female participants in Class 4/B. In other words, 28 of the 55 students were female and 27 of them were male.

Table 12: Distribution of the participants in the main study

	Gender	Number	Percentage (%)
Class 1 (4/A)	Male	14	25.45
	Female	14	25.45
Class 2 (4/B)	Male	13	23.63
	Female	14	25.45
Total		55	100

Finally, all of the participants of the study were new and young learners of English who did not even have a beginner's level of English proficiency. In fact, they were all native speakers of Turkish and it was their first year with English. Therefore, they knew only a few words and very few simple expressions.

Setting:

The main study was conducted in a state primary school in Çanakkale. The reason why this particular school was chosen for the main study was that the researcher worked as a teacher in this school at the time of the research. Therefore, it was considered that this fact would facilitate the application of the study. Next, the classrooms offered a quite natural atmosphere both for the researcher and the participants because they knew the school very well and they did not have to spend any time in order to get accustomed to the atmosphere.

The study was conducted as a part of the normal English course and therefore the presentation and testing stages were applied during the normal class hours, which made the participation compulsory for all of the students.

5.4.2 MATERIALS AND PROCEDURES

Materials:

Four sets of vocabulary items were used in this study. Two of these sets were composed of semantically related words; and the other two contained semantically unrelated words that had equal number of letters and syllables with the words in the semantic sets. Table 14 on the next page shows these groups and the words in each group. The first semantic group had twenty animal words and the other semantic group contained twenty food vocabulary items. The first semantically unrelated group of words (mixed 1) had the same number of letters and syllables with the ones in the first semantically related set (animal vocabulary); and the second semantically unrelated group of words had the same number of letters and syllables with the ones in the second semantically related set (food vocabulary) (see Table 13 below).

Table 13: Mean numbers for letters and syllables of the words used in each lesson of the main study

LESSONS	Mean Number of Letters	Mean Number of Syllables
Lesson 1 (related set) Lesson 3 (mixed set)	3.8	1.25
Lesson 2 (mixed set) Lesson 4 (related set)	4.75	1.65

The target vocabulary items were selected by circulating an initial list of 100 words to the students. The words included in this list were chosen with great care according to their length, semantic relations among them and whether they were abstract or concrete words. First of all, the number of letters in each word was calculated together with the number of syllables.

Table 14: Sets of words used in the main study

1 st WEEK		2 nd WEEK	
1 st Lesson (animals)	2 nd Lesson (mixed 2)	1 st Lesson (mixed 1)	2 nd Lesson (Foods)
Bat	Peg	Pan	Egg
Bee	Saw	Key	Fig
Pig	Cook	Rat	Leek
Fox	Plug	Axe	Plum
Hen	Soap	Sun	Bean
Ape	Rain	Eye	Pear
Ant	Walk	Pin	Salt
Cow	Swim	Mug	Okra
Owl	Bell	Hat	Corn
Cock	Stool	Fork	Onion
Crab	Scale	Drum	Olive
Wolf	Skull	Ring	Melon
Seal	Happy	Nail	Honey
Bear	Sleep	Comb	Grape
Goat	Circle	Kite	Garlic
Sheep	Hammer	Tooth	Pepper
Eagle	Puppet	Drill	Carrot
Snake	Button	Plane	Radish
Shark	Cookie	Chest	Cherry
Snail	Needle	Wheel	Peanut

Next, only concrete words were chosen for this study since abstract words were considered to be inappropriate for the target age group. Furthermore, abstract words would cause numerous difficulties in terms of presentation and testing. Especially, in this study which aimed at making use of pictures at every stage of teaching and testing, abstract words had no place, because it would hardly be possible to introduce and test the new words without giving their Turkish equivalents.

In addition to this, while designing the study materials and tests, suggestions made by Masterson (1986) were followed closely. Especially, the studies about the usage of pictures in ELT which are explained in Chapter 3 in detail were taken into consideration. As Wilemann (1993) suggests, visual images increase learning retention, which is one of primary goals of educators. According to Cundale (1999) the use of pictures and diagrams can be supported by the fact that almost all of the learners, especially young ones find visuals very interesting.

Another criterion in vocabulary selection was about cognates. No English word that sounded the same with or similar to a Turkish word was chosen for the study since it is a well-known fact that cognates have a facilitating effect on the language learning process. Therefore, using cognates might have bad effects on the results.

The initial word list was given to the students as the first pre-test and it was in the format of a matching type activity. The students were told to match the pictures with the vocabulary items given as a list. One or more students correctly matched eleven of the words. Therefore, these words were discarded; and out of the remaining 89 words, eighty were chosen and grouped according to the criteria explained in the previous paragraphs.

After selecting the right vocabulary, flashcards were prepared in order to be used in the presentation and practice stages of the study. Each flashcard had a big picture of the target word together with its written form under it (see Appendix 3). Then, activity sheets were prepared to be used at the practice stage. Each sheet contained matching type exercises that required the participants to match the written forms of new words at one side with their pictures at the other side (see Appendix 4). The same pictures were used at all stages of the study to avoid some possible problems related to picture identification. These activities were also designed in a similar way to the tests to facilitate the participant's job while doing the matching exercises.

Tests contained questions very similar to the matching exercises. The same test was given as a pre-test just before the presentation stage and as a post-test just after the presentation and practice stages. Pre-tests were given before each presentation to be completely sure that none of the participants knew the target words beforehand. Despite the comprehensive pre-test given before the beginning of the study, some students might have wondered about some of the target words and learned them before each presentation. Luckily, none of the participants gave correct answers in the tests given just before the presentations. Some very small changes were made on the delayed post-tests given one week after each presentation thinking that the students might remember the sequence of words.

Procedures for collecting data:

The study was done within a period of three weeks. During the first week of the study, two groups of vocabulary items were introduced to the participants in two different class hours on two different days. The first set of words was a group of semantically-related words (animal words) and this group was presented on Tuesday. The second set, which was presented on Thursday, contained various words from different semantic fields. The following week, it was vice versa and the mixed set was introduced before on Tuesday and the related set (food vocabulary) was introduced on Thursday.

Each presentation began with a pre-test of the target words to be introduced on that day; and was followed by an immediate post-test to measure the level of learning them. If a participant could remember the words rightly in order to do the matching type of questions correctly, he was considered to have learned that vocabulary item.

The new words were mostly presented by means of flashcards and reinforced through repetition. In fact, repetition drills were utilized as an important part of the whole learning process in this study. The procedure of data collecting is shown on Table 15:

Table 15: Procedures for collecting data

CLASSES 4 A/B	1 st WEEK				2 nd WEEK				3 rd WEEK
	1st Lesson <u>Animals</u> (Presentation, Pre-tests and immediate post tests)	<i>The following day: Revision of the 1st lesson</i>	2nd Lesson (two days after the 1 st lesson) <u>Mixed Set 2</u> (Presentation, Pre-tests and immediate post tests)	<i>The following day: Revision of the 2nd lesson</i>	3rd Lesson <u>Mixed Set 1</u> (Presentation, Pre- and immediate post tests)	<i>The following day: Revision of the 3rd lesson & Delayed test of the 1st lesson</i>	4th Lesson (two days after the 3 rd lesson) <u>Foods</u> (Presentation, Pre- and immediate post tests)	<i>The following day: Revision of the 3rd lesson & Delayed test of the 2nd lesson</i>	<i>No presentation of new words or revisions but only delayed tests of the third lesson and the fourth lesson.</i>

As a further explanation of Table 15, the procedures for collecting data during each lesson can be described as follows:

First of all, a pre-test was given before the presentation stage of each lesson. Then, the flashcards were shown one by one and the students repeated after the teacher five times. Then, they were asked to repeat extra three times by looking at the flashcards. The flashcards were then attached to the board. The participants repeated each word three times again while the teacher was attaching each flashcard to the board. They repeated another three times when the teacher pointed to each card one by one just after having attached all of the flashcards on the board.

The next stage was handing out the activity sheets; and the students were given eight minutes to do all of the activities on these sheets. Each activity on the activity sheet was done aloud by the students afterwards and the researcher wrote the right answers on the board. The activity sheets were then collected and the students were told to make a final repetition while the teacher was taking the flashcards from the board. The board was cleaned and finally the students were given the post-test to be completed in ten minutes.

The whole process as described above took forty minutes and the researcher paid extra attention to the time allocated for each stage and activity.

The next day, that is the day after the application, the flashcards were displayed once more and the participants were asked to repeat after the teacher five times again. Exactly one week after this final repetition, the delayed post-test of that presentation was given with again a time limit of ten minutes.

During all these procedures, everything was controlled at the maximum level. The researcher paid extra attention in order to present each word equally in terms of time and actions. For this purpose, he used a chronometer to continually check the time. Therefore, it would not be wrong to claim that in each group and in each presentation, the number of repetitions, gestures, mimics, the time allocated for each word and activity were almost the same (± 1 minute in total time). The fact that everything was very controlled was considered to be important in terms of producing confident and generalizable results, which is an important aim of this study.

5.4.3 PROCEDURES FOR DATA ANALYSIS

The data collected from the immediate and delayed tests were analyzed quantitatively. On the other hand, the data collected by means of the questionnaire were analyzed qualitatively in order to interpret the quantitative data and learn more about the learning process.

The independent variable in this study was the student success in vocabulary learning while the dependent variable was the use of semantically related sets versus unrelated sets in teaching new vocabulary items. The participants' test results and their completion time of each test as well as their answers to the questionnaire questions were used as the main criteria for evaluating student success in this study.

The data were analyzed by using descriptive statistics and t-test procedures on SPSS (Statistical Package for the Social Sciences for Windows) program in order to find answers to the following research questions:

RQ 1: How much of the new vocabulary that is presented through two different techniques will actually be learned by the participants; and depending on the results, which technique will appear more successful?

RQ 2: Does the length of a vocabulary item have an effect on the test results of the two groups?

RQ 3: Which sets of words will take more time to remember, the related sets or the mixed sets?

RQ 4: What do the participants think about the difficulty of learning words in semantic sets and in mixed sets?

The research questions given above were analyzed one by one.

First of all, the answer to the **RQ1** was given by evaluating the immediate and delayed post-test results. Furthermore, the interpretation of all the data collected in this study yielded the answer for this question. Depending on this interpretation, two different techniques were compared with each other in terms of effectiveness to find the more effective one.

Then, the analysis of each vocabulary item gave us an idea about the relationship between the length of a word and its effect on learning (**RQ2**).

Next, every participant's completion time of each test was calculated and interpreted in order to find an answer to the **RQ3**.

The whole learning process was also investigated from the perspectives of the participants by means of the questionnaire given at the end of the study to find an answer to **RQ4**.

The results of this questionnaire will be given and explained in the next chapter.

5.4.4 LIMITATIONS OF THE STUDY

The observed limitations of this study can be grouped under the headings of sampling, data collection and analysis. These limitations will briefly be explained one by one below:

Sampling: Although more students participated in this study when compared with the pilot study, there were still some sampling problems. First of all, the selection of the students was not done randomly. Second, all of the fourth year students had to participate since the study was carried out as a part of the normal English course. Therefore, some of the students may have participated unwillingly, which may have affected the results to some extent. Furthermore, since the normal class environment was chosen for the experiment, the social classes of the participants could not be controlled. Possible social class related differences might have also biased the data. Finally, the fact that the participants were only students of one primary school in Çanakkale makes it very hard to generalize the results beyond the scope of this study. Thus, conclusions drawn can be considered to be specific to the students who participated in this study.

Data Collection: The main limitation related to the data collection procedure was that the researcher presented only a few sets of different vocabulary items, which may not reflect real time vocabulary learning. In other words, presenting such a limited number of words in a limited time and in such a controlled way may possibly produce different results than in real life practice.

Data Analysis: Although the data of this study were collected through various means, part of it was collected by means of qualitative research methodologies according to which the students had to self-report their learning process within a time scope of three weeks. Since young children may not be very aware of the ongoing processes in themselves, the things they reported should be approached accordingly with this in mind.

Despite all these limitations, the study is considered to be important in terms of reflecting an exemplary atmosphere where the participants sincerely made an effort

to learn new foreign language vocabulary. Furthermore, the study was done in a real classroom setting.

5.5 CHAPTER SUMMARY

This chapter presented the methodology pursued in this study. The research questions were presented and explained one by one. Furthermore, the differences between qualitative and quantitative research methodologies were discussed in terms of their advantages and shortcomings. Following this discussion, the pilot study and its findings were presented together with its contributions to the main study. Finally, the main study was presented and explained in detail in terms of participants, settings, materials, data collection and analysis procedures and their limitations.

CHAPTER SIX

FINDINGS AND DISCUSSION

6.0 INTRODUCTION

This chapter presents and interprets the results from the data collected by means of qualitative and quantitative research techniques. These findings will be reported in three parts. In the first part, the data obtained from the immediate and delayed tests will be presented. In the second part, interpretation of the timekeeping results for each participant and test will be written. Finally, the third part will be allocated to the questionnaire results. The effectiveness of the main study will also be discussed in this chapter.

6.1 FINDINGS OF THE MAIN STUDY

The aim of the main study was to find the relationship between presenting the new vocabulary items in semantically related sets versus unrelated sets and the student success in learning them.

All the theoretical information about the study and the research questions to be answered were explained in detail in the Methodology part. Therefore, this chapter will be allocated to the research findings related to the data obtained by the help of the mentioned instruments.

The data will be analyzed by means of descriptive statistics and an independent t-test procedure on SPSS (Statistical Package for the Social Sciences for Windows) program.

6.1.1 RESULTS FROM THE IMMEDIATE AND DELAYED TESTS

The first and most important source of data in this study was the immediate and delayed post tests. The immediate tests were given within the same lesson just after the presentation and practice stages of vocabulary instruction; and the delayed tests were given one week after the last repetition which was done on the next day of each lesson. The data collected from these tests were then analyzed to find answers to the following research questions:

RQ 1: How much of the new vocabulary that is presented through two different techniques will actually be learned by the participants; and depending on the results, which technique will appear more successful?

RQ 2: Does the length of a vocabulary item have an effect on the test results of the two groups?

6.1.1.1 RQ 1- How much of the new vocabulary that is presented through two different techniques will actually be learned by the participants; and depending on the results, which technique will appear more successful?

Test Results of Related versus Mixed Sets of Words:

When the immediate test results of the two separate related sets are considered together and compared with the two mixed sets as in Table 16, the difference between the two techniques becomes quite visible. Table 16 gives us the total immediate test results for the two pairs of sets. Firstly, the immediate test results of the two mixed set of words and then the immediate test results of the two related sets are given.

Table 16: T-Test results for immediate tests of two related sets of words versus two mixed sets in total

TESTS (total)	Mean	Mean Difference	Std. Deviation	Correlation	t	df	Sig.
Immediate 2 & 3 (Mixed Sets)	21,9	4,27	4,4366	,902	7,142	54	,000
Immediate 1 & 4 (Related Sets)	17,63						

A mean difference of 4,27 ($p < ,001$) indicates a very significant difference between the total results of the mixed sets of words versus the related sets. This difference also suggests that when the tests given just after the presentation are taken into consideration, the mixed sets of words were learned much better than the ones in the related sets. When the total of delayed test results are taken into account this time as in Table 17, it appears that there is still a significant difference ($P < ,05$) in favor of the mixed set groups with a mean difference of 1,81.

Table 17: T-Test results for delayed tests of two related sets of words and two mixed sets in total

TESTS (total)	Mean	Mean Difference	Std. Deviation	Correlation	t	df	Sig.
Delayed 2 & 3 (Mixed Sets)	18,2	1,81	5,2461	,888	2,570	54	,013
Delayed 1 & 4 (Related Sets)	16,38						

A comparison of Table 16 with Table 17 shows very critical differences between the tests given at regular intervals. We see in these tables that the big mean difference (4,27) that appeared in the results of the immediate tests decreased after one week and became 1,81; making the difference less significant. Although the gap between the two sets becomes smaller in the later delayed tests, it is still very significant.

Rates of Forgetting in a Period of One Week:

Tables 18 and 19, below, show the rates of forgetting in a period of one week and facilitate our job in comparing the test pairs given with an interval of one week. By looking at these tables, we can talk about how much of the new vocabulary was forgotten in one week.

Table 18: Mean differences between immediate and delayed pairs of tests showing the rate of forgetting for related sets of words

PAIRS of TESTS	N	Mean
Immediate 1 - Delayed 1 (Related set)	55	,47
Immediate 4 - Delayed 4 (Related Set)	55	,78

The mean differences between the immediate and delayed tests of two different related sets are very close to each other: the first one of them is 0,47 and the other one is 0,78. When the pairs of tests presented in Table 18 are taken into account and compared with each other, it appears that there is not much difference between the forgetting rates of these tests conducted within an interval of one week. In other words, very similar amount of vocabulary was forgotten in a period of one week. However, the following Table 19 presents a big difference between the immediate and delayed tests of the mixed sets of words:

Table 19: Mean differences between immediate and delayed pairs of tests showing the rate of forgetting for mixed sets of words

PAIRS of TESTS	N	Mean
Immediate 2 - Delayed 2 (<i>Mixed Set</i>)	55	,87
Immediate 3 - Delayed 3 (<i>Mixed Set</i>)	55	2,83

An examination of Table 19 suggests that the most striking result appeared in the test results of lesson 3, when a mixed set of twenty words was presented. A mean difference of 2,83 between immediate and delayed tests of this lesson given at an interval of one week indicates that much more forgetting occurred with this set when compared with the other set presented in Lesson 2.

We can say about the possible reasons for this difference that the words in this mixed set were very similar to the ones in its related set counterpart (set 1). In other words, such words as 'bee-key' and 'fox-axe' may have caused confusion and this may have played a major role in forgetting the new words in the long-term. Furthermore, most of the words in these two sets were very similar in terms of their pronunciation, intonation and stress patterns too, like the words 'mug-hat-pin'. Another explanation for this high rate of forgetting can be that the students may have had some problems in encoding these words into their long-term memories since there did not exist any semantic relations among the words in this set.

In short, the results displayed in Table 19 indicate that the rate of forgetting in the mixed set tests in one week is higher than the rate of forgetting in the related set

tests as presented in Table 18. In other words, words presented in mixed sets were forgotten faster within a period of one week.

Total Results of Related versus Mixed Tests:

The difference between the results yielded by the two techniques becomes much more visible when the total of all related set tests (immediate & delayed) versus tests of the mixed sets (immediate & delayed) is calculated as in Table 20 below.

Table 20: T-Test results for all tests of related versus mixed sets of words (immediate minus delayed)

TESTS (total)	Mean	Mean Difference	Std. Deviation	Correlation	t	df	Sig.
<i>Related set tests (immediate - delayed)</i>	1,25	2,45	5,0436	,545	3,609	54	,001
<i>Mixed set tests (immediate - delayed)</i>	3,7						

An investigation of Table 20 shows that there is a very significant difference between the test results of the related sets of words and the mixed sets. In fact, a mean difference of 2,45 ($P < ,01$) in favor of the mixed sets of words indicates that the vocabulary items in the mixed sets were learned much better than the ones in the related sets.

Comparison of Similar Related and Mixed Sets:

Table 21, on page 95, compares the Immediate Test 1 (a related set test) with the Immediate Test 3 (a mixed set test). Immediate Test 1 contained twenty semantically related vocabulary items whereas Immediate Test 3 contained twenty semantically unrelated words. Both of them were given just after the instruction.

The reason why these two tests are compared on this table is that the words presented in lesson 1 and lesson 3 had an equal number of syllables and letters. In other words, although the words were different from each other, they were the same in terms of number of letters and syllables. Most of them even sounded very similar like 'axe' and 'fox'. (For the complete list of words, see Table 13)

Table 21: T-Test results for Immediate Test 1 and Immediate Test 3

TEST	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>Immediate 1 (Related Set)</i>	10,03	1,38	3,5407	2,894	54	,005
<i>Immediate 3 (Mixed Set)</i>	11,41					

An examination of Table 21 suggests that there is a significant difference between the Immediate Test 1 and Immediate Test 3 ($p < ,01$) and that the mixed set of words were remembered better than the related set just after the instruction with a mean difference of 1,38.

The following Table 22 shows the results obtained from the same tests when they were given one week after the presentation as delayed tests.

Table 22: T-test results for Delayed Test 1 and Delayed Test 3

TEST	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>Delayed 1 (Related Set)</i>	9,56	,98	4,0802	1,785	54	,08
<i>Delayed 3 (Mixed Set)</i>	8,58					

Although these results do not seem to be statistically significant ($p > ,05$), they still indicate that when the same tests were given one week later, some forgetting occurred. It is seen that the words in both groups were forgotten to some extent after a time-span of one week.

It is also seen that the words in the delayed test of the mixed set were forgotten much more than the ones in the delayed test of the related set, suggesting that although the vocabulary items in the mixed set were remembered better in the test given just after the application, they were more prone to being forgotten and a higher level of forgetting appeared in the delayed test given exactly one week after the last revision.

By looking at the results in the tables on the previous page, we can say that there is a smaller mean difference between the two groups in comparison with the immediate tests and the words in the related set group did not have much loss even after one week while the situation is vice versa for the mixed set group, because the words in this group were forgotten a lot.

When the Immediate Test 4 is compared with Immediate Test 2, the results in Table 23 appear.

Table 23: T-Test results for Immediate Test 4 and Immediate Test 2

TEST	Mean	Mean Difference	Std. Deviation	T	Df	Sig.
<i>Immediate 4 (Related Set)</i>	7,6	2,89	3,4996	6,126	54	,000
<i>Immediate 2 (Mixed Set)</i>	10,49					

A mean difference of 2,89 indicates that there is a significant difference between the two tests ($p < ,001$); and that the words in the mixed set (with a mean of 10,49) were learned much better than the ones in the related set (with a mean of 7,6). This table shows that there is a big difference between the Immediate Test 4, which tested a related set and Immediate Test 2, which tested a mixed set of words. The reason why these two tests are compared with one another is again the same: Each word in one set has a counterpart in the other set and most of these counterparts even sound very similar like 'plum' and 'plug'. This is in keeping with the results of the previous two sets of tests namely the Immediate Test 1 and Immediate Test 3

Below is given Table 24, which compares the same groups after one week:

Table 24: T-Test results for Delayed Test 4 and Delayed Test 2

TEST	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>Delayed 4 (Related Set)</i>	6,81	2,8	3,4178	6,076	54	,000
<i>Delayed 2 (Mixed Set)</i>	9,61					

The significance ($p < ,001$) suggests that the difference between the learning levels of the two different sets is statistically significant and this implies big differences between the two sets. A reading of the Table 24 also indicates that the mean difference between the two sets did not change much after one week. In other words, this table shows us that the mean difference between the two tests was kept even one week later and that almost the same amount of forgetting occurred for both groups within this time-span.

Comparison of the Two Different Related Sets of Words:

Some other interesting results appear when the two immediate tests of the related sets are compared with each other as in Table 25 below.

Table 25: T-Test results for the immediate tests of both related sets of words

TEST	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>Immediate 1 (Related Set)</i>	10,03	2,43	3,6350	4,971	54	,000
<i>Immediate 4 (Related Set)</i>	7,6					

What is really interesting with these results is that there is a big difference between the two related set tests; and the significance ($p < ,001$) indicates that this difference is a significant one, which is worth considering seriously.

Table 26, below, indicates that according to the results of the delayed tests given one week after the immediate tests, there is still a significant difference between the two related set of words; and the mean difference between the two sets did not change much although almost the same amount of vocabulary items was lost in one week.

Table 26: T-Test results for the delayed tests of both related sets of words

TEST	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>Delayed 1 (Related Set)</i>	9,56	2,74	3,8501	5,288	54	,000
<i>Delayed 4 (Related Set)</i>	6,81					

There may be several explanations for the differences shown on Tables 25 and 26 but one of the most logical ones is that the vocabulary items in the fourth test were longer in terms of the number of letters and syllables they contained. This difference can also be explained in connection with the structure of the short-term memory. The shorter a word is, the better it is retained.

Another explanation may be that food vocabulary in the test were very similar, which might have caused confusion. Still another explanation of this discrepancy between the results of two similar applications could be that it is related to the difference of conditions, which might have changed from the one week to the other. This difference might have caused some learning and retention difficulties for the students. Finally, the animal vocabulary in related set 1 may have attracted more attention than the names of the foods in related set 4; and thus animal vocabulary may have been learned better.

To sum up, both the length of the vocabulary items and their similarity to each other may have played important roles in the retention and recall by affecting the accommodation and assimilation processes to some extent.

Comparison of Two Different Mixed Sets of Words:

The following Table 27 compares the Immediate Test 2 with the Immediate Test 3, both of which are the tests of the mixed sets of words. In this table, there does not appear to be a statistically significant difference if $P < .05$ is considered as the limit, because the mean difference is as low as 0,92 and the significance is 0,065. However, there is still a difference in the favor of the Immediate Test 3.

Table 27: T-Test results for the immediate tests of both mixed sets of words

TEST	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>Immediate 2 (Mixed Set)</i>	10,49	,92	3,6558	1,881	54	,065
<i>Immediate 3 (Mixed Set)</i>	11,41					

In order to give an explanation for the mean difference in Table 27, it can be said that when compared with immediate test 2, the words in immediate test 3 were shorter both in terms of letters and syllables. Therefore, shorter vocabulary items may have been learned and remembered better in the short term. This can be better understood if the limited capacity of the short-term memory is taken into consideration.

Table 28, below, shows what happened nearly one week after the immediate tests of related set 2 and related set 3.

Table 28: T-Test results for the delayed tests of both mixed sets of words

TEST	Mean	Mean Difference	Std. Deviation	t	df	Sig.
<i>Delayed 2 (Mixed Set)</i>	9,61	1,03	3,4692	2,215	54	,031
<i>Delayed 3 (Mixed Set)</i>	8,58					

Some forgetting is observed in both of the mixed sets but the rate of forgetting in the third group is much higher. Furthermore, the difference between the two sets became more significant in one week. This significance ($p < ,05$) with a mean difference of 1,03 in favor of the delayed test 2 indicates that most of the words in the Mixed set 2 were still remembered one week later whereas many words were forgotten in Mixed Set 3. An explanation of this loss may be that the words in Set 1 (a related set) and Set 3 (a mixed set) were very similar in terms of pronunciation as well as the number of syllables and letters. This similarity may have caused some confusion in the long term too.

By looking at all these statistically significant results of the tests, it can be claimed that presenting new vocabulary items in mixed sets rather than in related sets have produced more successful test results both in the short-term and the long-term in this study. Since the conclusions that can be drawn depending on these results will be explained and discussed in the following chapters in detail, the explanations given here are sufficient for the present.

6.1.1.2 RQ 2- Does the length of a vocabulary item have an effect on the test results of the two groups?

The aim of this research question is to investigate a possible relationship between the length of a vocabulary item and its retention in the memory. In order to find a logical answer to this question, the researcher made an analysis of each word presented in the study in terms of the number of letters and syllables it contained. Furthermore, the percentage of the participants who could know each word in the tests was calculated. Finally, numbers of letters and syllables were correlated with the correct answers in the tests by taking into consideration each vocabulary length category (three-lettered, four-lettered, five-lettered, six-lettered words, one-syllable and two-syllable words). The following five tables will present these data. For a more detailed analysis of each vocabulary item, see Appendix 6.

Table 29, below, presents the numbers of letters and syllables and percentages of right answers for each vocabulary length category (three-lettered, four-lettered, five-lettered, six-lettered words, one-syllable and two-syllable words):

Table 29: Numbers of letters and syllables in words of the first lesson (a related set lesson) and percentage of correct answers

Number of letters	Immediate 1 (percentage of correct answers)	Delayed 1 (percentage of correct answers)
3	59,66	51,22
4	40,66	47,83
5	49	48,8
Number of Syllables		
1	53,26	49,73
2	45,4	49,2
Total	51,3	49,6

As can be seen in the above table, relying on both immediate and delayed test results, it can be claimed that the three-lettered words were learned best followed by the five-lettered ones; and the four-lettered words were not learned as much as the other two. Furthermore, the one-syllable words were learned better than the two-syllable ones especially when the results of the immediate test are taken into consideration.

The following Table 30 gives the same analysis for the Lesson Two (a mixed set lesson):

Table 30: Numbers of letters and syllables in words of the second lesson (a mixed set lesson) and percentage of correct answers

Number of letters	Immediate 2 (percentage of correct answers)	Delayed 2 (percentage of correct answers)
3	49,5	41,5
4	57,14	51,14
5	61,75	60
6	53,57	49,85
Number of Syllables		
1	57,85	48,71
2	55,07	53
Total	56,05	51,5

An examination of Table 30 indicates that this time the five-lettered words were remembered best and that the three-lettered words were not remembered as well as the other categories. Furthermore, the one-syllable words were learned better than the two-syllable ones when the results of the immediate test are taken into consideration. However, it appears that one-syllable words were forgotten faster in a period of one week, because the two-syllable words were remembered better in the delayed test given one week after the immediate test.

Another related table is Table 31, below, which gives an analysis of Lesson 3 (a mixed set lesson).

Table 31: Numbers of letters and syllables in words of the third lesson (a mixed set lesson) and percentage of correct answers

Number of letters	Immediate 3 (percentage of correct answers)	Delayed 3 (percentage of correct answers)
3	61,55	45,33
4	44,16	33,83
5	58,8	43,6
Number of Syllables		
1	56,6	42,46
2	52,8	38,4
Total	55,65	41,45

Table 31 shows that like in the first lesson, the three-lettered words were learned better than the other categories and that the five lettered words followed them. Again, the four lettered words were not remembered as well as the three- and five-lettered ones. Besides that, the one-syllable words were learned better than the two-syllable ones when the results of both the immediate and delayed tests are taken into account.

Lesson 4 was analyzed in the same way too. The analysis of Lesson 4 is given in Table 32 below:

Table 32: Numbers of letters and syllables in words of the fourth lesson (a related set lesson) and percentage of correct answers

Number of letters	Immediate 4 (percentage of correct answers)	Delayed 4 (percentage of correct answers)
3	53	40
4	38,71	34,14
5	47,2	42,8
6	29,66	29,16
Number of Syllables		
1	42,28	32,57
2	38,07	36,92
Total	39,55	35,4

When we look at Table 32, we see that the three-lettered words of this lesson were learned better than the other vocabulary length categories. Similarly, the words that followed this category were the five-lettered ones. This time, the six-lettered words were the least remembered ones. When we take the number of syllables into consideration, we see that the one-syllable words were learned better than the two-syllable ones in the short-term. However, in the long term, the two-syllable words were remembered better.

Finally, numbers of syllables and letters in the vocabulary items were correlated with the percentage of the correct answers to look for a possible relationship between the lengths of all the words and their retention in the memory. The following Table 33 presents the correlation results.

Table 33: Correlation results between numbers of letters and syllables in all of the tests and percentage of correct answers

	<i>Delayed Tests</i>	<i>Immediate Tests</i>
<i>Number of letters</i>	-,072	-,234
<i>Sig. (2 tailed)</i>	,790	,321
<i>Number of Syllables</i>	,009	-,178
<i>Sig. (2 tailed)</i>	,986	,525
<i>N</i>	80	80

According to this table, the correlation value between the numbers of letters in the words and correct answers of the students in the delayed tests is -0,072, which is not statistically significant ($p > ,05$). Furthermore, the correlation values of other variables are not statistically significant either. Therefore, an examination of this table and the test results show that there is not a significant relationship between the lengths of the words used in this study and their retention in the memory.

Depending on these results, it would not be wrong to say that the length of a word does not have a statistically significant effect on its retention in the memory. However, depending on the tables given above, it can also be concluded that the three-lettered words of this study were generally learned better in the short-term and forgotten faster in the long-term. Furthermore, the four-lettered words were not learned as well as the three- and five-lettered ones. Also, when we look at the relationship between the numbers of syllables and percentage of correct answers, we see that one syllable words have generally been learned better than the two-syllable ones but forgotten faster at the same time. This is also in keeping with the answers to a related question in the questionnaire. According to the answers given to this question, the students found it easier to learn shorter words.

To sum up, depending on these tables, it can be concluded that a short word does not always mean a better learning while a longer word a worse one. For instance, almost in all of the above mentioned lessons the five-lettered words were learned better than the four-lettered ones. Therefore, according to these results, the number of letters in a word is not very effective on learning. However, it seems that the number of syllables in a vocabulary item affects learning to some extent but not significantly.

6.1.2 RESULTS FROM THE TIMEKEEPING PROCEDURE

The data obtained from the timekeeping procedure were analyzed to find an answer to the following research question:

RQ 3: Which sets of words will take more time to remember, the related sets or the mixed sets?

6.1.2.1 RQ 3- Which sets of words will take more time to remember, the related sets or the mixed sets?

The data needed for this procedure was obtained by using a chronometer. The chronometer which was able to record the exact finishing time of up to twenty students started as soon as the students began their tests and stopped when each student gave his/her paper; and then the mean score for each test was calculated approximately to be compared with the mean scores of the other tests as in Tables 34, 35 and 36.

The reasons why these data are given in separate tables are to give a better view of the results yielded by the time-keeping procedure and to facilitate the possible comments about the issue.

The first of the three related tables is Table 34, which presents the mean score for each immediate test.

Table 34: Arithmetic means for the students' completion time of each immediate test (approximately)

Immediate tests	N	Mean (in seconds)	Mean (in minutes)
<i>Related 1 (test1)</i>	20	349,8	5 min. 50 sec.
<i>Related 2 (test4)</i>	20	361,8	6 min. 2 sec.
<i>Mixed 1 (test2)</i>	20	260,4	4 min. 20 sec.
<i>Mixed 2 (test3)</i>	20	206,75	3 min. 27 sec.

Table 34 shows that the students finished the first related set test in a mean time of 349,8 seconds (5 min. 50 sec.) whereas they finished the test of mixed set 2 (its counterpart) in 206,75 seconds (3 min. 27 sec.). The difference between the mean scores of the two different tests is 143 seconds (2 min. 23 sec.).

Table 35, which is given below, is directly connected with Table 34. Therefore, these two tables must be considered together in order to see and interpret the results better.

Table 35: Arithmetic means for the students' completion time of each delayed test (approximately)

Delayed Tests	N	Mean (in seconds)	Mean (in minutes)
Related 1 (test1)	20	353,4	5 min. 53 sec.
Related 2 (test4)	20	329,35	5 min. 29 sec.
Mixed 1 (test2)	20	258,05	4 min. 28 sec.
Mixed 2 (test3)	20	204,7	3 min. 25 sec.

The above table shows the mean score for the students' completion time of each delayed test. An investigation of Table 32 yields similar results as well. It took longer for the students to complete the tests of related sets of words than the tests of mixed sets.

Finally, Table 36 presents us the total mean scores for the tests of the related sets of words and the mixed sets. This table is very useful for drawing conclusions from this timekeeping procedure.

Table 36: Arithmetic means for the students' total completion time of related set vs. mixed set tests

Total	Mean (in seconds)	Mean (in minutes)
Tests of related sets	348,58	5 min. 49 sec.
Tests of mixed sets	232,47	3 min. 53 sec.

An examination of Table 36 suggests that there is an apparent difference between the means of the related set tests and mixed set tests. In fact, the difference in the total time shown in this table is worth considering seriously, because it is nearly 2 minutes (1 minute 56 seconds) and this makes approximately 65 %. In other words, it took approximately 65 % more time for the students to answer the questions in related set tests.

The fact that there is a difference of 33 % between the tests of related sets of words and the mixed sets is very important, since it is in keeping with Tinkham (1993). Because, he similarly found that it took more time for the participants to give

the equivalents of semantically related words presented to his subjects. In his study, the subjects gave the equivalents of semantically unrelated words in a shorter time than the semantically related words.

6.1.3 RESULTS FROM THE QUESTIONNAIRE

The answers that the students gave to the questions in the questionnaire were evaluated and interpreted in order to find an answer to the following research question:

6.1.3.1 RQ4- What do the participants think about the difficulty of learning words in semantic sets and in mixed sets?

The students were asked a total of three questions at the end of the study and told to give the best answer that described them. It was made clear that there was not one correct answer valid for everybody; but it changed from one student to the other; so they were asked to answer these questions as sincerely as possible.

The questions were in Turkish and every student had to put only a tick next to the answer that described him/her best. The full Turkish original questionnaire text and its English translation are given in Appendix 7, therefore only the questions and the percentage of each answer will be given in the results. Here are the results:

1. Did you study the new words out of the lesson?

Yes	18.18 % (10 students)
No	81.82 % (45 students)

As seen above, the first question actually asked whether they made an extra effort outside the classroom to learn the new words by asking them 'Did you study these words out of the lesson?'. 10 students (18.18 %) gave a positive answer to this question whereas 45 of them (81.82 %) said 'no'. Depending on these results, it can be concluded that the great majority of the participants did not make an extra effort to learn the new vocabulary items but mainly depended on what they had learned inside the classroom.

2. If your answer to question 1 is 'yes', how did you study?

Mostly with a dictionary	30 % (3 out of 10 students)
Mostly with my parents	60 % (6 out of 10 students)
Other	10 % (1 out of 10 students)

The second question was only answered by the 10 students who had said 'yes' to the first question. Out of these ten students, 6 stated that they studied with their parents, and three of them said they used a dictionary. Only one student put a tick next to 'other' implying that he found some other ways of studying. Depending on these results, we can say that 60 % of these ten students were supported by their parents in learning the new words, 30 % of them applied to a dictionary while 10 % (one student) found another way of revising the new words.

3. Which lesson was easier for you?

Lesson 1 (animals)	41,81 % (23 students)
Lesson 2 (mixed)	22,81 % (12 students)
Lesson 3 (mixed)	29,09 % (16 students)
Lesson 4 (food)	7,27 % (4 students)

The aim of the third question 'which lesson was easier for you?' was to learn what the students thought about the difficulty level of each lesson and thus find out the most difficult and easiest sets of words for the learners.

To this question, 23 of the students (41,81 %) gave the answer 'Lesson 1' (a related set lesson); 16 students (29,09 %) gave the answer 'Lesson 3' (a mixed set lesson); 12 students (22,81 %) said that they found Lesson 2 (a mixed set lesson) easier than the other lessons. Finally, 4 students (7,27 %) thought that Lesson 4 (a related set lesson) was the easiest of all.

By looking at these results, we can conclude that almost half of the students found the related set lessons easier than the mixed set lessons whereas the other half thought just the opposite. However, the results can be evaluated from a different perspective too. If we consider the lesson 1 (a related set lesson) together with lesson 3 (its mixed set counterpart), we see that 70,9 % of the participants found these two lessons easier than the other two. The reason for this choice can be explained in connection with the length of the words presented in these two lessons. They were shorter words when compared with the ones in Lesson 2 and 3 (see Table 37 below).

Table 37: Mean numbers for letters and syllables of the words used in each lesson of the study.

LESSONS	Mean Number of Letters	Mean Number of Syllables
Lesson 1 (related set)	3.8	1.25
Lesson 3 (mixed set)	3.8	1.25
Lesson 2 (mixed set)	4.75	1.65
Lesson 4 (related set)	4.75	1.65

In addition to the participants' answers explained above, if the immediate test results are also taken into consideration, it is more clearly seen that the participants of this study learned the words in Lesson 1 and 3 much better than the other two lessons. However, they also forgot the words of these two lessons much faster when compared with the words in Lessons 2 and 4 in a period of one week.

6.2 DISCUSSION OF THE FINDINGS

It is a common belief that the vocabulary items presented in semantic sets are learned better because there are interconnected webs in the human mind and what a learner should do is to activate these webs by means of words presented in chunks. That's why Abdullah (1993) claims that the emphasis needs to be on the building up and reinforcement of a semantic network of interrelated words; and on facilitating automatic lexical access to these networks. However, as Finkbeiner and Nicol (2003) assert, there is not enough evidence to support the effectiveness of using semantically related words in vocabulary teaching.

Many other theorists doing research on memory and recall have claimed like Abdullah (1993) that semantically organized data can be better recalled (Bousfield 1953; Tulving 1962; Bower, Clark, Lesgold Wizenz 1969 in Crow and Quigley 1985). Besides, they have pointed out for years that long-term retention of information that has been organized into semantic categories is superior to retention of randomly presented material. Furthermore, depending on the research results of such researchers, and for some other practical reasons like the ease of preparing activities, the great majority of the textbooks introduce new vocabulary items in semantically related sets. For example, in most books, one unit is allocated to kitchen utensils, another chapter is allocated to food vocabulary and still another one to animals. The teachers believing that this is the best way of dealing with new vocabulary present these semantically related words altogether; and not surprisingly, the students study these words in chunks.

Recently, however, the common view about the superiority of related set of words over the mixed sets changed to some extent in the light of the findings of current researchers like Tinkham (1993). According to Tinkham, learners have more difficulty in learning new words presented to them in semantic clusters than they do while learning semantically unrelated words. He also claims that remembering semantically related words takes more time; and that presenting new words in semantic clusters is not a good way of teaching new vocabulary items and it appears to be a technique that should be questioned by the new researchers.

The present study was based on the relationship between presenting the new vocabulary items in semantically related sets versus unrelated sets and the participants' success in learning them. The results are in conflict with the general view about the superiority of semantic sets but quite in accordance with the findings of researchers like Tinkham (2003) and Finkbeiner & Nicol (2003).

When we consider Finkbeiner & Nicol's (2003) claim that there is little empirical evidence to support the effectiveness of using semantically related sets in vocabulary teaching, the value of the findings of this study can be understood better.

Discussion of Research Question 1:

The question of how much of the new vocabulary presented through these two different techniques was actually learned by the learners was answered by analyzing the immediate and delayed test results. According to the immediate test results, 54.75 % of the vocabulary items presented in mixed sets were learned whereas only 44.07 % of the words presented in semantically related sets were learned by the participants. The difference is more than 10 %, which means that in the short term, words presented in mixed sets were learned better than the words presented in semantic sets by 10 %. On the other hand, one week later, 45.5 % of the words presented in mixed sets and 40.95 % of the words presented in related sets could be remembered, which means that the difference decreased to 4 % in one week.

First of all, contrary to the claims of such researchers as Seal (1991), Abdullah (1993), and Haycraft (1993), the results of this study have revealed that semantically unrelated sets of words rather than the semantically related ones can produce better results. In fact, the participants of this study became more successful in memorizing the words presented in semantically unrelated sets rather than related sets.

Another fact that the test results unearthed was about the forgetting rates of the participants in a period of one week. According to the delayed test results, the words presented in mixed sets were forgotten faster than the ones presented in semantic sets although both the immediate and delayed test results were still in favor of the mixed vocabulary sets. In other words, the big gap that appeared between the results obtained through the immediate tests of these two different techniques closed visibly in one week. The results also showed that although in all tests (immediate, delayed and total) the mixed sets of words were ahead of the semantically related sets in terms of retention, this difference became less significant as time passed and the mean differences between these two different techniques got closer to each other.

The words presented in mixed sets were learned better than the ones presented in semantic sets although they were forgotten faster than the words in related sets too. In other words, the vocabulary items presented in mixed sets were learned better but

also forgotten faster than the ones presented in semantically related sets. This last fact is in fact in contrast with many researchers like Seal (1991), Abdullah (1993), and Haycraft (1993), because these researchers strongly believe that presenting new words in semantically related sets yield much better results than presenting them in semantically unrelated sets.

A thorough investigation of the results also suggests that once the semantically related words are encoded in the memory in some way –whether through assimilation, accommodation or semantic webbing – (McCarthy 1990), they become more durable in the memory than the ones presented in mixed sets. This explains why the difference that was very significant in the immediate tests became less significant in the delayed tests. In other words, although the mixed sets of words were learned much better than the related sets according to the tests given immediately after the lessons, they were not remembered as well as the words in the related sets after one week.

Discussion of Research Question 2:

Another topic that this study investigated was the relationship between the length of a word and its retention in the memory. The present study could not find any significant relationship between these two factors. Especially, the relationship between the number of letters in a word and its retention in the memory was not very clear. However, it appeared that the number of syllables affected learning to some extent, but not in a statistically significant way. Therefore, depending on the results of this study, it cannot be claimed that there is a significant relationship between the length of a word and its retention in the memory.

Discussion of Research Question 3:

The study also investigated the relationship between these two different techniques and the completion time of the students for each test; and found significant results too. The evaluation of the data obtained through the timekeeping procedure revealed a big difference between the related set tests and mixed set tests. During a related set test, the students kept their papers longer but became less

successful. On the other hand, they kept their papers shorter during a mixed set test and became more successful at the same time. These results were in keeping with what Tinkham (1993) had found in a study which investigated the relationship between semantic relations and remembering time for each word. He similarly found that remembering the words presented in semantic sets took more time.

When we also take into consideration the test results and evaluate them with the data yielded by the time-keeping procedure again, we can conclude that the students were more successful in the mixed set tests although they finished them in a relatively shorter time; and that it took more time to remember the semantically related words and in the end they became less successful in these tests. In other words, thinking more on the questions during a test of semantically related words did not yield better results for the students.

An explanation of why it took more time to learn semantically related words can be explained in connection with the fact that students learn new words by making up new semantic webs or changing the existing webs as well; and all this accommodation and assimilation processes may be taking time (McCarthy 1990). This is similar to what Finkbeiner and Nicol (2003) say about the learning of semantically related words; namely that although learning semantically related words appears to take *longer*, words learned under these conditions are learned *better* for the purpose of actual language use.

Another explanation can be that as Tinkham (1993) suggests, semantically related words may be causing some confusion for the learners. According to him, discrete rather than related words facilitate learning and retention. If we think in the light of Tinkham's ideas, and believe that semantically related words cause confusion, we can easily claim that since the students became confused in the tests of related words, they had to think much more to remember the new words than they did during the tests of semantically unrelated words. Therefore, the reason why they kept their papers longer may be that they wanted to overcome their confusion and find the right answer for each question.

Discussion of Research Question 4:

Finally, this study investigated the students' opinions about the difficulty of learning the words in semantically related sets and mixed sets. In order to find answers to this question, a mini questionnaire was given to the participants at the end of the study. According to the answers given to the three connected questions in this questionnaire, it became apparent that most of the participants found it easier to learn the relatively shorter words in the lessons.

To sum up, this study revealed significant results in terms of vocabulary learning and teaching process. All the data collected through various means were evaluated in order to find answers to the four research questions of this study. Therefore, the answers given to each research question contain important implications for vocabulary instruction and further research. These implications will be explained in the next chapter.

6.3 CHAPTER SUMMARY

This chapter was allocated to a detailed explanation of the results from the data collection procedure. The data collected by means of qualitative and quantitative research methodologies were reported in three parts. In the first part, the data obtained from the immediate and delayed tests were presented. In the second part, the results of the timekeeping procedure were interpreted. Finally, the third part was allocated to the questionnaire results. The effectiveness of the main study was also discussed in this chapter.

CHAPTER SEVEN

CONCLUSIONS AND IMPLICATIONS

7.0 INTRODUCTION

This chapter will begin with a brief summary of the study. Then, the implications of this study for vocabulary instruction and further research will be discussed in separate parts. Especially, detailed information will be given about its implications for the learners and teachers who are the indispensable actors of vocabulary instruction.

7.1 SUMMARY OF THE STUDY

The four research questions of this study were answered in the light of the data collected through both qualitative and quantitative research methodologies. In order to remind these research questions again, they are listed below:

RQ 1: How much of the new vocabulary that is presented through two different techniques will actually be learned by the participants; and depending on the results, which technique will appear more successful?

RQ 2: Does the length of a vocabulary item have an effect on the test results of the two groups?

RQ 3: Which sets of words will take more time to remember, the related sets or the mixed sets?

RQ 4: What do the participants think about the difficulty of learning words in semantic sets and in mixed sets?

First of all, the data obtained from the immediate and delayed tests were evaluated in order to find an answer to the first research question. According to the results of the tests given just after the lessons, 54.75 % of the new vocabulary items presented in mixed sets were learned whereas only 44.07 % of the words presented in semantically related sets were learned by the participants. The difference is more than approximately 10 %, which means that words presented in a mixed set were learned better than the words presented in semantic sets by 10 %. On the other hand, one week later, 45.5 % of the words presented in a mixed set could be remembered while this percentage appeared as 40.95 % with the related set of words, which means that the difference decreased to 4 % in one week. However, in both immediate and delayed tests, the words presented in mixed sets were remembered better than the ones presented in semantic sets although they were forgotten faster than the ones in related sets too.

Depending on the data obtained from these tests, we can also assert that when compared with presenting new words in semantically mixed sets, presenting them in semantically related sets is not a very effective way of teaching them. However, in the long-term, semantically related words seem to be more durable in the memory. Furthermore, presenting new words in mixed sets produced better results both in the short-term and in the long-term in terms of the percentage of the words remembered during immediate and delayed tests. Thus, this technique seems to be more effective than the other one. However, according to the results of the tests, once the words were learned in a semantic set, they were forgotten less slowly too. Therefore, if more durable results are preferred, presenting words in semantic sets seems to be more effective than presenting them in mixed sets.

The relationship between the length of a word and its retention in the memory (asked in the research question 2) was investigated through an analysis of how many students remembered each vocabulary item in these tests. This analysis revealed that there is not a direct and statistically significant relationship between the length of a word and its retention in the memory. However, it appeared that the number of syllables affected learning to some extent, but not significantly. Therefore,

depending on the results of this study, it cannot be claimed that there is a significant relationship between the length of a word and its retention in the memory.

In order to find an answer to the third research question, the researcher made use of a good chronometer which recorded each student's completion time of each test. This timekeeping procedure also revealed some important results. The most important result obtained through this procedure was the obvious time difference between the tests of the mixed sets of words and those of the related sets. While the students thought more during a related set test, they thought less during a mixed set test. When compared with the test results, it appears that the participants became more successful with mixed set tests although they finished them in a shorter time; and they became less successful in related set tests during which they thought for a longer time.

Finally, a mini questionnaire was given to the participants to seek an answer to the fourth research question that asked how difficult they found the whole learning process and whether they had any difficulties in learning the semantically related sets of words. According to the students' answers, the difficulty they had during the tests of the related sets and mixed sets are almost the same. However, they found the shorter words easier to remember, because 71 % said that Lessons 1 and 3 (lesson 1 and lesson 3 contained shorter words) were easier than the other two lessons. This was in keeping with the test results which showed that the students were more successful in learning the words in Lesson 1 and Lesson 2.

7.2 CONCLUSIONS & IMPLICATIONS FOR VOCABULARY INSTRUCTION

The results of the present study suggested that students became more successful in remembering the words presented to them in mixed sets rather than semantically related sets both in the short-term and in the long-term. However, the words learned in semantic sets were forgotten less slowly in the long-term. Furthermore, it took more time for the students to remember the words in a test of semantically related words implying that it was more difficult to learn them.

Finally, there appeared to be no difference between the learning of long words and short words according to the test results, but the majority of the students said that they found it easier to keep in mind the relatively shorter words rather than the long words. These important findings have some implications for both learners and teachers who are two indispensable actors of language learning and teaching. These results also have some implications for those who want to make further research on this issue; but first of all, the conclusions of this study will be presented and discussed.

7.2.1 CONCLUSIONS

The aim of the main study was to investigate the relationship between presenting the new vocabulary items in semantically related sets versus unrelated sets and the participants' success in learning them.

The main conclusions of this study can be summarized as follows:

Firstly, contrary to the assertions of such theoreticians as Seal (1991), Abdullah (1993), and Haycraft (1993), the findings of this study revealed that the participants became more successful in remembering the words presented in semantically unrelated sets rather than related sets. The results also revealed that although in all tests (immediate, delayed and total) the mixed sets of words were ahead of the semantically related sets in terms of retention, this difference became less significant as time passed and the mean differences obtained through these two different techniques got closer to each other.

Another fact that the test results unearthed was about the forgetting rates of the participants in one week. According to the delayed test results, the words presented in mixed sets were forgotten faster than the ones presented in semantic sets although both the immediate and delayed test results were still in favor of the mixed vocabulary sets. Furthermore, a thorough investigation of the results suggests that once the semantically related words are encoded into memory in some way, they become more durable in the memory than the ones presented in mixed sets.

The study also investigated the relationship between these two different techniques and the completion time of the students for each test; and found significant results too. The evaluation of the data obtained through the timekeeping procedure revealed a big difference between the related set tests and mixed set tests. During a related set test, the students kept their papers longer but became less successful. On the other hand, they kept their papers shorter during a mixed set test and became more successful at the same time. These results were in keeping with what Tinkham (1993) had found in a study which investigated the relationship between semantic relations and remembering time for each word. He had similarly found that remembering the words presented in semantic sets took more time.

When we also evaluate the test results with the data yielded by the timekeeping procedure again, we can conclude that the students were more successful in the mixed set tests although they finished them in a relatively shorter time. This is in keeping with what Finkbeiner and Nicol (2003) say about the learning of semantically related words; namely that although learning semantically related words appears to take *longer*, words learned under these conditions are learned *better* for the purpose of actual language use.

Another topic that this study investigated was the relationship between the length of a word and its retention in the memory. The present study could not find any statistically significant relationship between these two variables although it appeared that the number of syllables in a word has a statistically insignificant effect on the retention of that word.

Finally, the present study investigated the students' opinions about the difficulty of learning the words in semantically related sets and mixed sets by means of a mini questionnaire. According to the answers given to the three connected questions in this questionnaire, it appeared that the participants found it easier to learn the relatively short words.

To sum up, this study revealed significant results in terms of vocabulary learning and teaching process. The implications of this study for learners, teachers and further research will be discussed in the following parts.

7.2.2 IMPLICATIONS FOR LEARNERS

The implications of the findings of this study for language learners can be summed up as follows:

If they learn the words in semantic sets, it will take more time to learn them and remember them later. However, they will forget these words far less slowly and the words learned in this way will be more durable in their minds.

If they learn the words in mixed groups rather than in semantic clusters, they will learn them significantly better in the short-term, but in the long-term, they will forget these words more quickly. Furthermore, they will be able to remember these words more easily in tests.

According to the findings of this study, there will not be much difference between long and short words in terms of remembering them later on, but the learners will find it easier to learn shorter words.

As can be seen in the above, each technique has its advantages and disadvantages. The learners should decide on what they want and thus choose the best technique for their needs and goals. In other words, if they want better results especially in the short-term, they should learn new vocabulary items in mixed groups rather than in semantic clusters. On the other hand, if they want more durable results, especially in the long-term, they should do just the opposite.

According to Zimmerman (1998), vocabulary teaching is at the center of language instruction, and is therefore critically important for every person that tries to learn a language. It is a well-known fact that for every learner who tries to learn a foreign language, learning new vocabulary items is a very necessary but at the same time a difficult task. It is also clear that some learners become more successful at this

task than some others. Obviously, many factors play different roles in the success of a student trying to learn new vocabulary items, but one thing is certain that different techniques yield different results. For this reason, the techniques we use while presenting and learning the new words are very important. Therefore, we should search for the best techniques to facilitate the difficult task of learning new words.

7.2.3 IMPLICATIONS FOR TEACHERS

All the findings presented in this thesis suggest to teachers that instead of spending much class time on teaching new words through one technique which they believe, is the best, they should try some other techniques because this study reveals that it is more efficient to present new words in mixed sets, especially in the short-term and that the words presented in this way are learned better and more quickly.

Remembering the importance of vocabulary learning and teaching, English teachers should familiarize themselves with a variety of vocabulary learning techniques that they can use in the classroom. If they use the best and most efficient techniques, they will certainly get better results.

The implications of these findings for language teachers can be summed up as follows:

If they teach new vocabulary items in semantic sets, they should be ready to allocate more time since it takes more time for the students to internalize the new words, but resending the new words in semantic clusters will produce more durable results.

If they prefer to teach the words in mixed groups rather than in semantic clusters, their students will learn them significantly better and faster in the short-term, but in the long-term, they will forget these words more quickly. Therefore, the teachers should support their students with regular revisions to slow the high speed of forgetting following the presentation. Furthermore, they will be able to remember these words more easily in tests.

According to the findings of this study, there will not be much difference between teaching long and short words, because their students' retention of these words will not be influenced significantly by the length of a word, though they may say that they find it easier to remember shorter words.

Since each technique has its advantages and disadvantages, the teachers should decide on what they want to teach and how to teach it; and thus try to choose the best technique by taking into consideration their students' needs and goals. In other words, if they want good results especially in the short-term, they can present new vocabulary items in mixed sets rather than in semantically-related sets but they should know that their students will forget the words more quickly. Therefore, they should make regular revisions to prevent this. On the other hand, if they want to get more durable results, especially in the long-term, they should present the new vocabulary in semantic clusters but they should be aware of the fact that it takes more time for the students to internalize them. Therefore, if they choose this technique, the best thing they can do is to give the time that the students need both during the class hours and the tests.

7.3 IMPLICATIONS FOR FURTHER RESEARCH

New researchers can further investigate the semantic clusters and their effect in vocabulary teaching in order to find out the relationship between presenting new words in semantic sets versus in mixed sets and the rate of learning achieved through each technique.

Future studies can use introspection in order to learn more about what is going on in learners' minds while learning new words in semantic sets and mixed sets.

Finally, similar studies can be conducted with made-up words and in more professional atmospheres to get better and clearer results. It is likely that the results obtained in better conditions will be more trustworthy.

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APPENDICES:

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Appendix 3: An Example of the Flashcards used in the Study	<i>Page 13</i>
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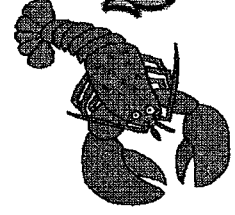
Appendix I: Activity sheets of the Pilot Study

Her resmin yanındaki parantezin içine doğru sözcüğü yazınız!



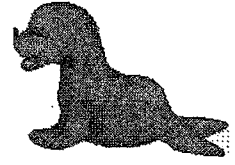
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1. seal



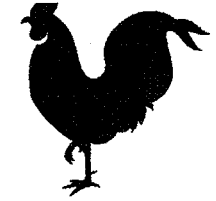
► This is a/an

2. hen



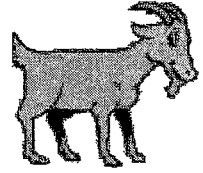
► This is a/an

3. cow



► This is a/an

4. owl



► This is a/an

5. goat



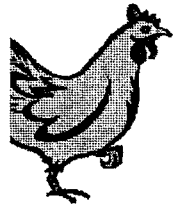
► This is a/an

6. cock



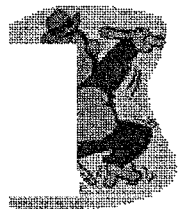
► This is a/an

7. eagle



► This is a/an

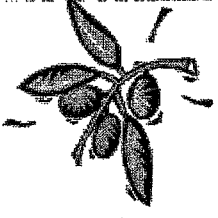
8. lobster



► This is a/an

9. ape

Her resmin yanındaki parantezin içine doğru sözcüğü yazınız!



► This is a/an

1. lettuce



► This is a/an

2. pear



► This is a/an

3. peanut



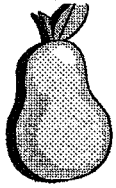
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4. melon



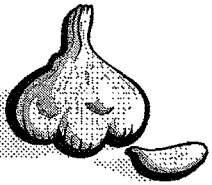
► This is a/an

5. olive



► This is a/an

6. bread



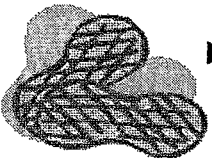
► This is a/an

7. garlic



► This is a/an

8. leek



► This is a/an

9. onion

Her resmin yanındaki parantezin içine doğru sözcüğü yazınız!!



► This is a/an

1. tailor



► This is a/an

2. farmer



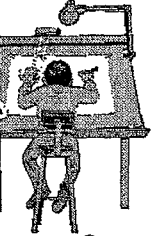
► This is a/an

3. accountant



► This is a/an

4. dentist



► This is a/an

5. cook



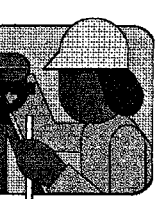
► This is a/an

6. plumber



► This is a/an

7. engineer



► This is a/an

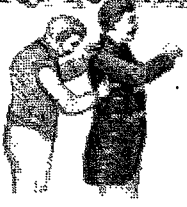
8. architect



► This is a/an

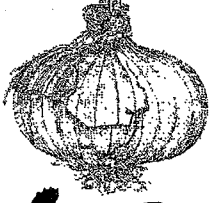
9. scientist

Her resmin yanındaki parantezin içine doğru sözcüğü yazınız!



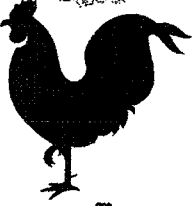
► This is a/an

1. goat



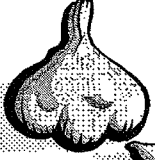
► This is a/an

2. tailor



► This is a/an

3. seal



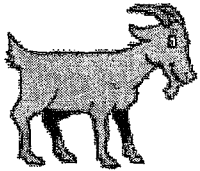
► This is a/an

4. farmer



► This is a/an

5. cook



► This is a/an

6. lettuce



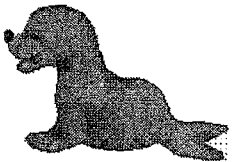
► This is a/an

7. garlic



► This is a/an

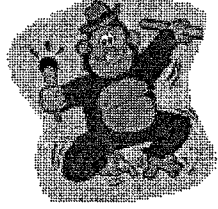
8. cock



► This is a/an

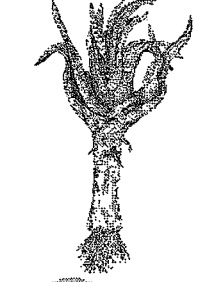
9. onion

Her resmin yanındaki parantezin içine doğru sözcüğü yazınız!



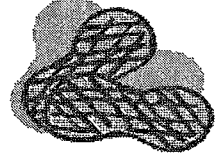
► This is a/an

1. leek



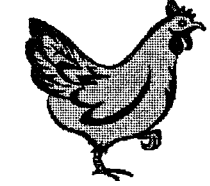
► This is a/an

2. hen



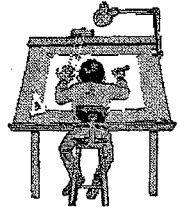
► This is a/an

3. architect



► This is a/an

4. owl



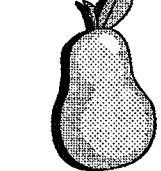
► This is a/an

5. ape



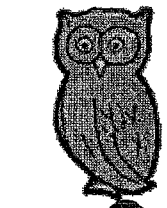
► This is a/an

6. dentist



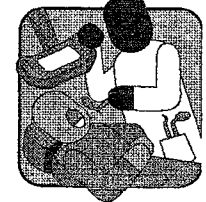
► This is a/an

7. peanut



► This is a/an

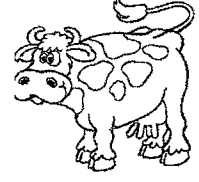
8. pear



► This is a/an

9. scientist

Her resmin yanındaki parantezin içine doğru sözcüğü yazınız!



► This is a/an

1. bread



► This is a/an

2. eagle



► This is a/an

3. olive



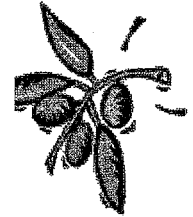
► This is a/an

4. cow



► This is a/an

5. lobster



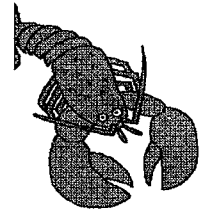
► This is a/an

6. plumber



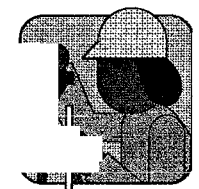
► This is a/an

7. engineer



► This is a/an

8. olive



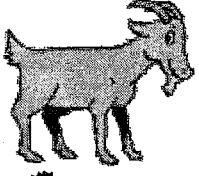
► This is a/an

9. melon

pendix 2: Post-tests of the Pilot Study

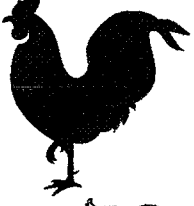
AD: SOYAD:

Her resmin yanındaki parantezin içine doğru sözcüğün harfini yazınız!!



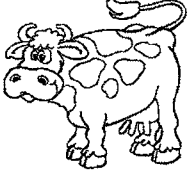
(.....)

a. cow



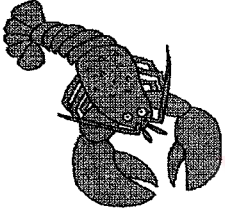
(.....)

b. hen



(.....)

c. seal



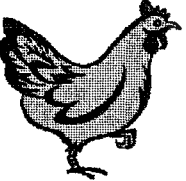
(.....)

e. goat



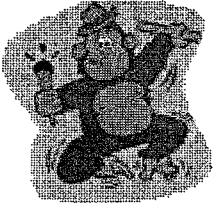
(.....)

f. cock



(.....)

h. wolf



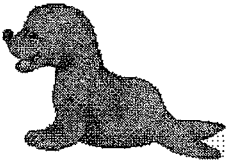
(.....)

i. ape



(.....)

j. worm

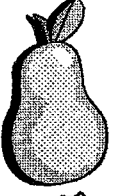


(.....)

l. pole

k. lobster

AD: SOYAD: Her resmin yanındaki parantezin içine doğru sözcüğün harfini yazınız!!



(.....)

a. bread



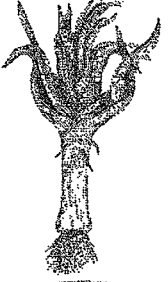
(.....)

b. date



(.....)

c. melon



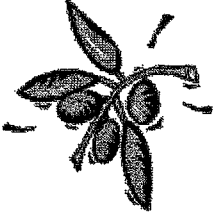
(.....)

d. olive



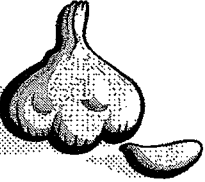
(.....)

e. pear



(.....)

f. peanut



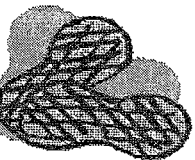
(.....)

g. garlic



(.....)

h. lettuce



(.....)

i. mushroom

j. leek

k. onion

l. sotro

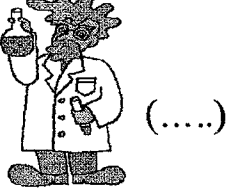
AD: SOYAD:
Her resmin yanındaki parantezin içine doğru sözcüğün harfini yazınız!



a. farmer



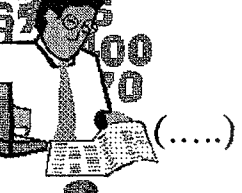
b. dentist



c. driver



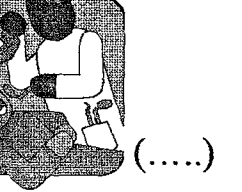
d. engineer



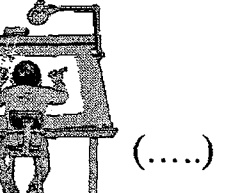
e. plumber



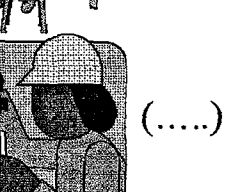
f. cook



g. tailor



h. collector



i. scientist



j. accountant

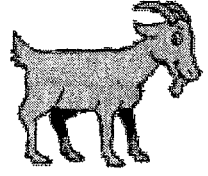


k. architect

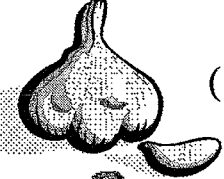
l. thinner

AD:..... SOYAD:.....

Her resmin yanındaki parantezin içine doğru sözcüğün harfini yazınız!!



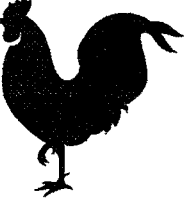
(.....)



(.....)



(.....)



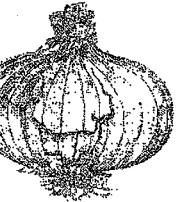
(.....)



(.....)



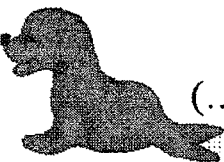
(.....)



(.....)



(.....)



(.....)

a. farmer

b. cock

c. onion

d. goat

e. seal

f. wolf

g. garlic

h. driver

i. cook

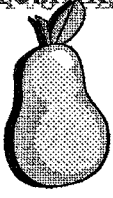
j. sotro

k. lettuce

l. tailor

AD:..... SOYAD:.....

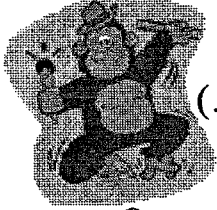
Her resmin yanındaki parantezin içine doğru sözcüğün harfini yazınız!!



(.....)

a. owl

b. date



(.....)

c. architect



(.....)

d. pear



(.....)

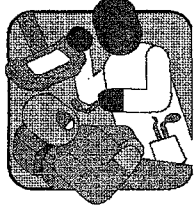
e. hen



(.....)

f. ape

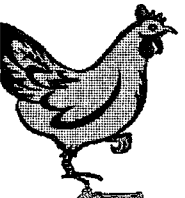
g. pole



(.....)

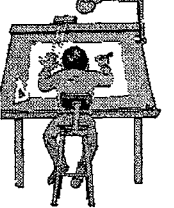
h. scientist

i. leek



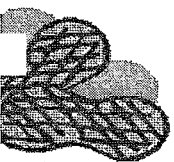
(.....)

j. peanut



(.....)

k. worm

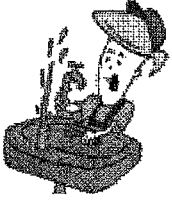


(.....)

l. dentist

AD:..... SOYAD:.....

Her resmin yanındaki parantezin içine doğru sözcüğün harfini yazınız!!



(.....)

a. melon

b. olive



(.....)

c. engineer



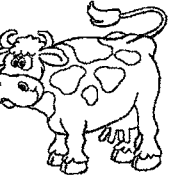
(.....)

d. eagle



(.....)

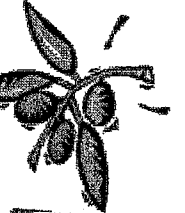
e. plumber



(.....)

f. mushroom

g. lobster



(.....)

h. bread



(.....)

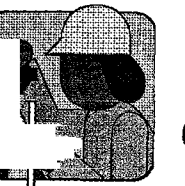
i. accountant

j. collector



(.....)

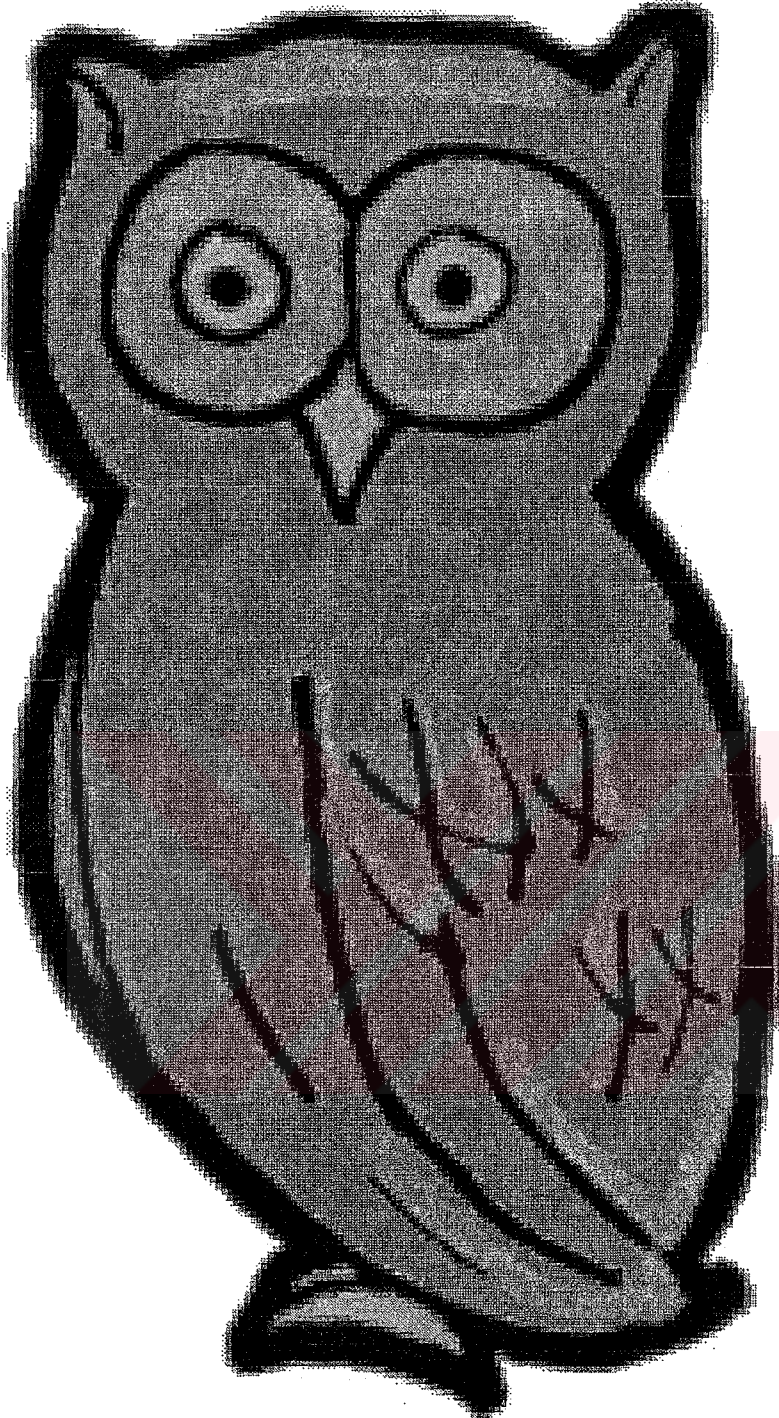
k. cow



(.....)

l. thinner

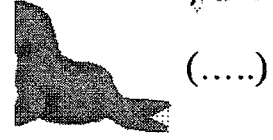
Appendix 3: An Example of the Flashcards used in the Study



OWL

Appendix 4: Activity Sheets of the Main Study

Her resmin yanındaki parantezin içine doğru sözcüğün RAKAMINI yazınız!



1. snail



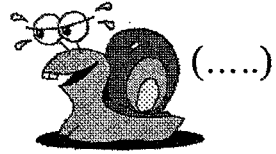
2. crab



3. hen

4. cock

5. sheep



6. bee

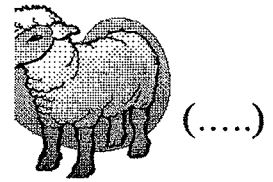
7. ant

8. snake



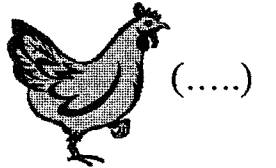
9. seal

10. goat



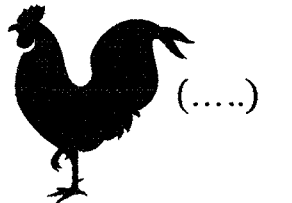
11. owl

12. pig



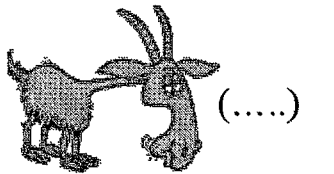
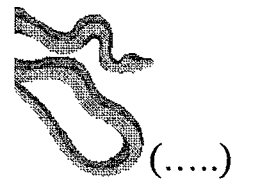
13. eagle

14. ape



15. fox

16. bat



17. cow

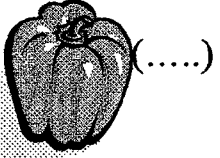
18. bear



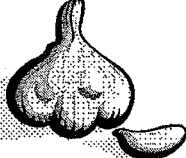
19. shark

20. wolf

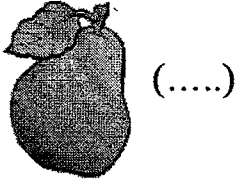
Her resmin yanındaki parantezin içine doğru sözcüğün RAKAMINI yazınız!



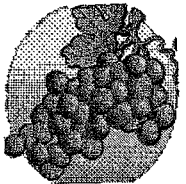
(.....)



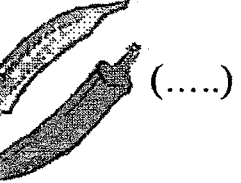
(.....)



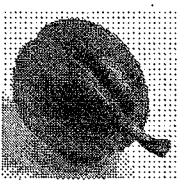
(.....)



(.....)



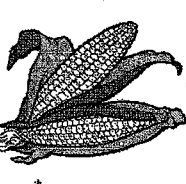
(.....)



(.....)



(.....)



(.....)



(.....)



(.....)



(.....)



(.....)



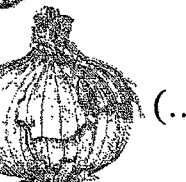
(.....)



(.....)



(.....)



(.....)



(.....)



(.....)



(.....)



(.....)

1. bean

2. carrot

3. cherry

4. corn

5. egg

6. fig

7. garlic

8. grape

9. honey

10. leek

11. melon

12. okra

13. olive

14. onion

15. peanut

16. pear

17. pepper

18. plum

19. radish

20. salt

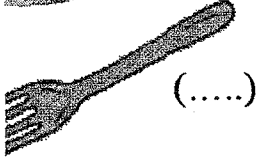
Her resmin yanındaki parantezin içine doğru sözcüğün RAKAMINI yazınız!



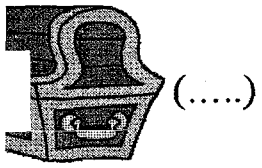
(.....)



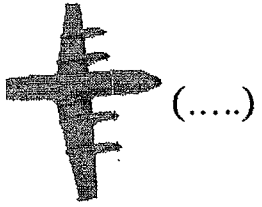
(.....)



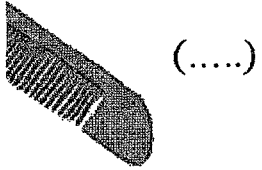
(.....)



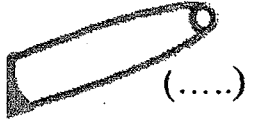
(.....)



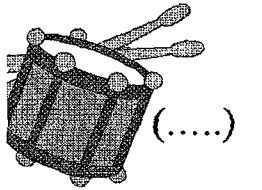
(.....)



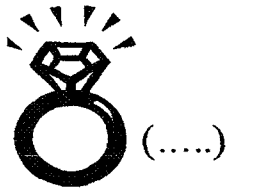
(.....)



(.....)



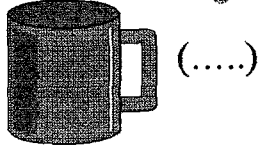
(.....)



(.....)



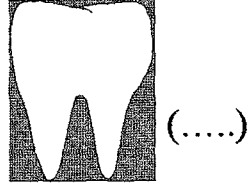
(.....)



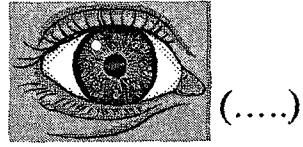
(.....)



(.....)



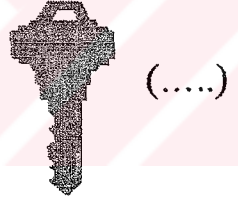
(.....)



(.....)



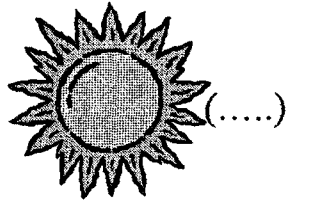
(.....)



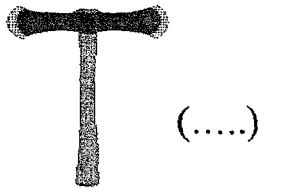
(.....)



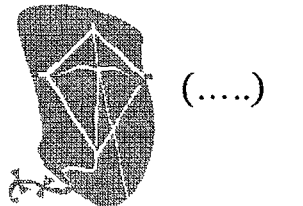
(.....)



(.....)



(.....)



(.....)

1. axe

2. rat

3. chest

4. drill

5. drum

6. eye

7. sun

8. fork

9. hat

10. key

11. kite

12. mug

13. nail

14. pan

15. comb

16. pin

17. plane

18. ring

19. tooth

20. wheel

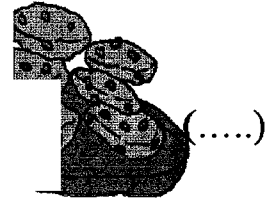
Her resmin yanındaki parantezin içine doğru sözcüğün RAKAMINI yazınız!



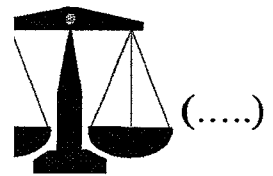
(.....)



(.....)



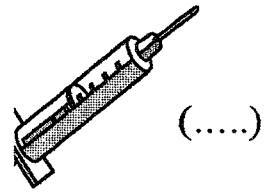
(.....)



(.....)



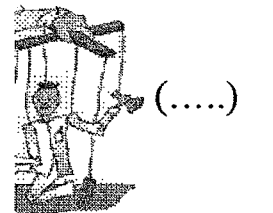
(.....)



(.....)



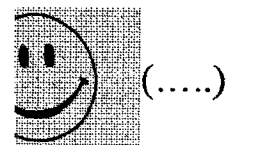
(.....)



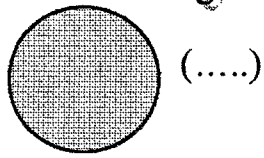
(.....)



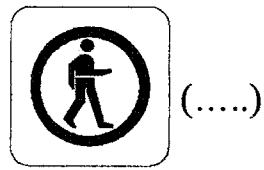
(.....)



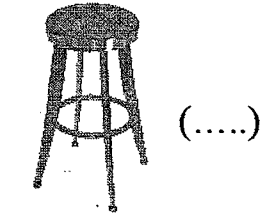
(.....)



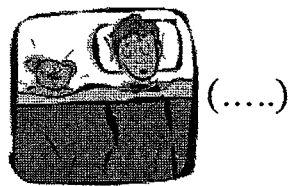
(.....)



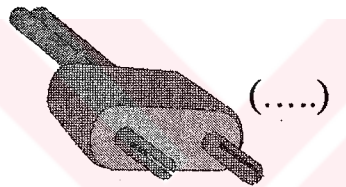
(.....)



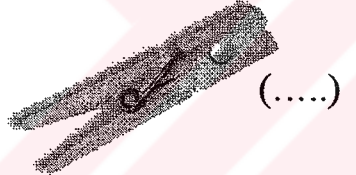
(.....)



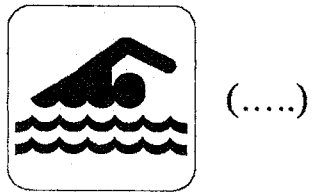
(.....)



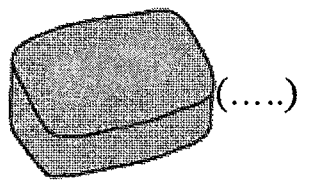
(.....)



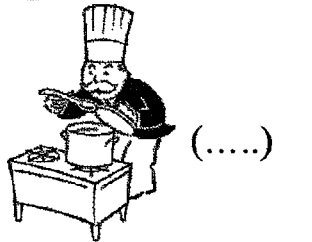
(.....)



(.....)



(.....)



(.....)



(.....)

1. bell

2. button

3. circle

4. cook

5. hammer

6. happy

7. cookie

8. needle

9. peg

10. plug

11. puppet

12. rain

13. saw

14. scale

15. skull

16. sleep

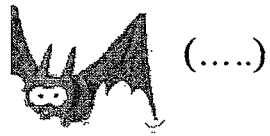
17. soap

18. stool

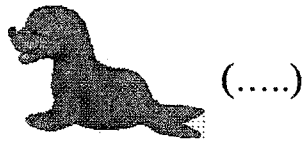
19. swim

20. walk

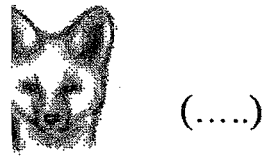
SOYAD: _____
 r resmin yanındaki parantezin içine doğru sözcüğün HARFİNİ yazınız!



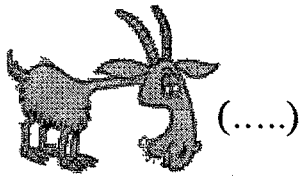
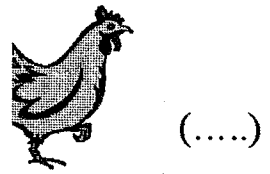
a. goat



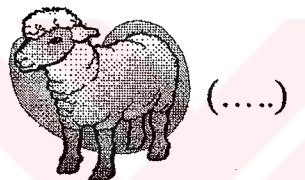
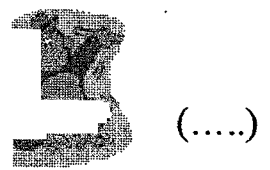
b. owl



c. hen



d. shark



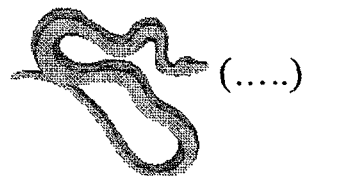
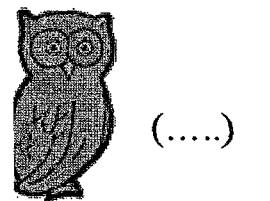
e. snail



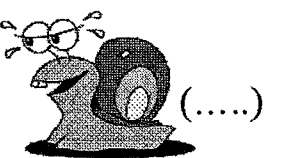
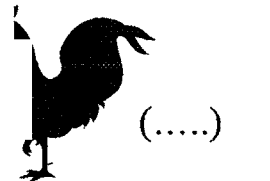
f. preak



g. ant



h. snake



i. crab



j. seal

k. iron

l. bee

m. eagle

n. ape

o. fox

p. wolf

r. pig

s. cow

t. fang

u. bat

v. bear

y. sheep

z. cock

AD SOYAD
Her resmin yanındaki parantezin içine doğru sözcüğün HARFİNİ yazınız!

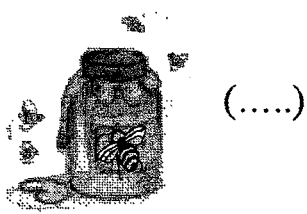
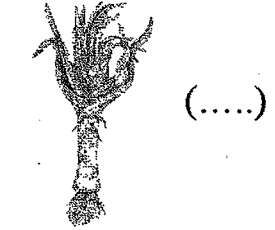


a. pepper



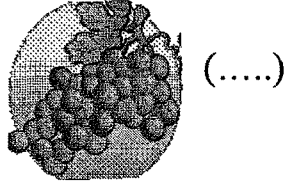
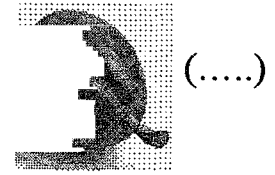
b. corn

c. pear



d. egg

e. cherry

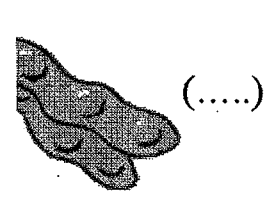


f. pocket

g. onion

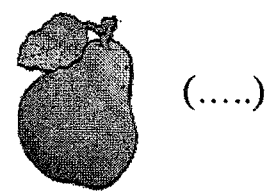
h. fig

i. salt



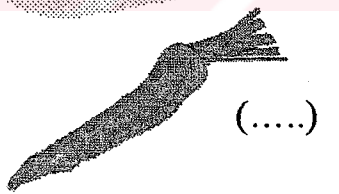
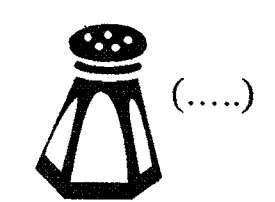
j. melon

k. olive



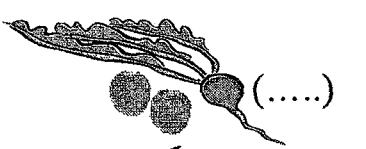
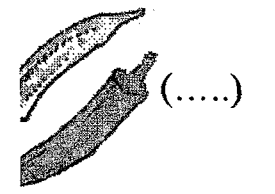
l. okra

m. coin



n. peanut

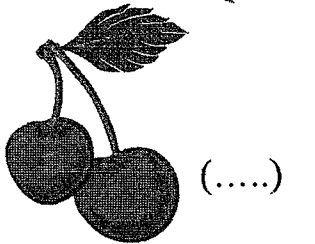
o. radish



p. honey

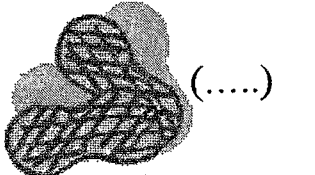
r. bean

s. carrot



t. garlic

u. foam



v. grape

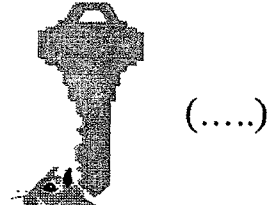
y. plum

z. leek

AD SOYAD
Her resmin yanındaki parantezin içine doğru sözcüğün HARFINİ yazınız!



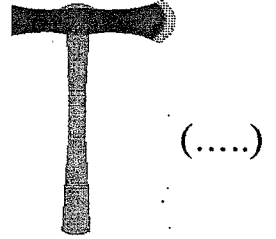
(.....)



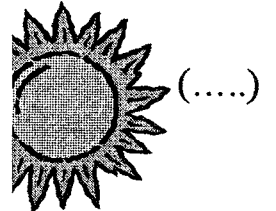
(.....)



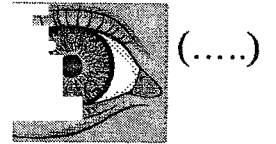
(.....)



(.....)



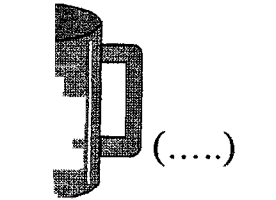
(.....)



(.....)



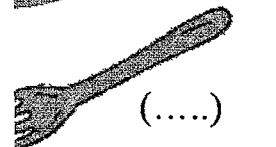
(.....)



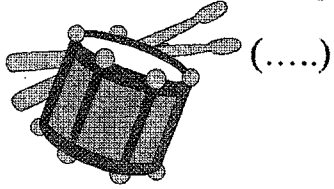
(.....)



(.....)



(.....)



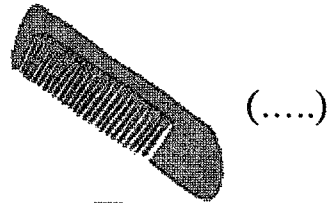
(.....)



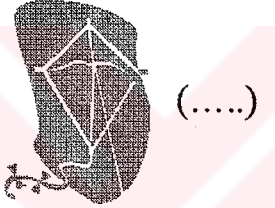
(.....)



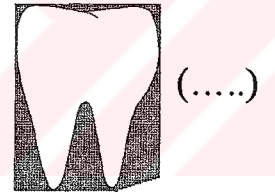
(.....)



(.....)



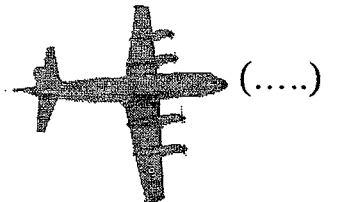
(.....)



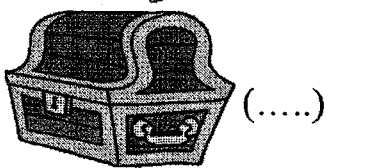
(.....)



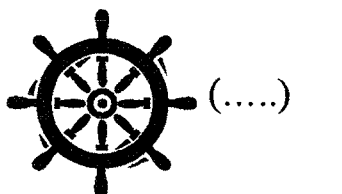
(.....)



(.....)



(.....)



(.....)

a. pot

b. axe

c. plane

d. fork

e. sun

f. key

g. drum

h. trap

i. pan

j. drill

k. chest

l. rat

m. nail

n. eye

o. ring

p. hat

r. wheel

s. pin

t. kite

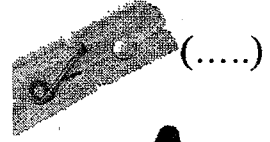
u. lake

v. comb

y. mug

z. tooth

AD: _____ SOYAD: _____
 Her resmin yanındaki parantezin içine doğru sözcüğün HARFİNİ yazınız!



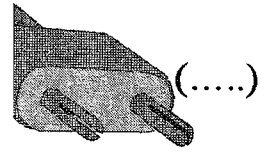
(.....)



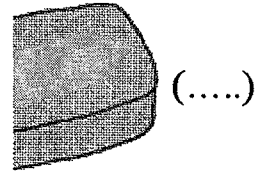
(.....)



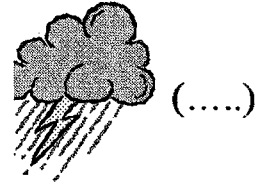
(.....)



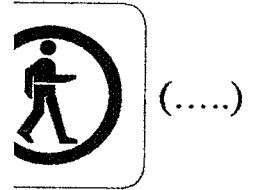
(.....)



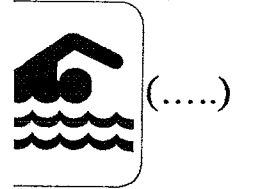
(.....)



(.....)



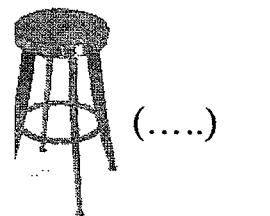
(.....)



(.....)



(.....)



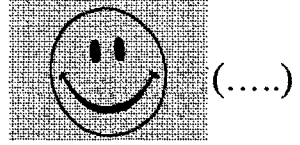
(.....)



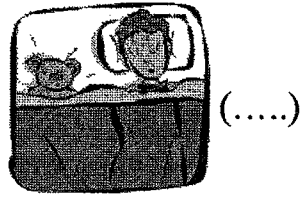
(.....)



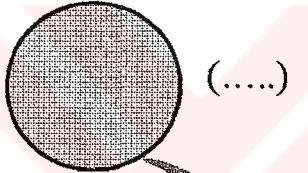
(.....)



(.....)



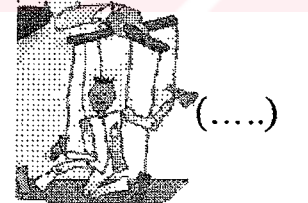
(.....)



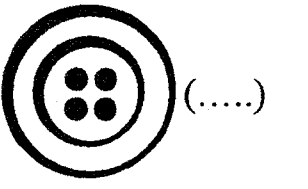
(.....)



(.....)



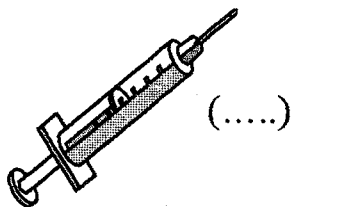
(.....)



(.....)



(.....)



(.....)

a. cook

b. sleep

c. stool

d. river

e. soap

f. bell

g. walk

h. swim

i. scale

j. saw

k. rain

l. needle

m. skull

n. circle

o. peach

p. peg

r. happy

s. plug

t. teen

u. puppet

v. hammer

y. button

z. cookie

Appendix 6: Analysis of Each Word Used in the Main Study Appendix Page 22

Percentage of the students who knew each word in the tests of the first related set

RELATED SET 1 (ANIMALS)	Immediate Test %	Delayed Test %	Change	
			Direction	Rate %
<i>Fox</i>	76	80	↑	4
<i>Bat</i>	80	70	↓	10
<i>Pig</i>	78	62	↓	16
<i>Snake</i>	64	62	↓	2
<i>Wolf</i>	38	58	↑	20
<i>Hen</i>	78	53	↓	25
<i>Shark</i>	58	53	↓	5
<i>Snail</i>	38	53	↑	15
<i>Bear</i>	32	53	↑	21
<i>Ape</i>	56	49	↓	7
<i>Cock</i>	56	49	↓	7
<i>Crab</i>	41	47	↑	6
<i>Ant</i>	58	45	↓	13
<i>Bee</i>	56	45	↓	11
<i>Seal</i>	46	44	↓	2
<i>Eagle</i>	38	40	↓	12
<i>Sheep</i>	47	36	↓	11
<i>Goat</i>	31	36	↑	5
<i>Owl</i>	29	33	↑	4
<i>Cow</i>	26	24	↓	2
AVERAGE	51.3	49.6	↓	1.7

Percentage of the students who knew each word in the tests of second related set

RELATED SET 2 (FOOD)	Immediate Test %	Delayed Test %	Change	
			Direction	Rate %
<i>Melon</i>	60	64	↑	4
<i>Olive</i>	60	56	↓	4
<i>Salt</i>	73	51	↓	22
<i>Honey</i>	67	51	↓	16
<i>Okra</i>	45	49	↑	4
<i>Cherry</i>	44	46	↑	2
<i>Egg</i>	62	44	↓	18
<i>Plum</i>	36	42	↑	6
<i>Fig</i>	44	36	↑	8
<i>Leek</i>	40	33	↓	7
<i>Radish</i>	35	31	↓	4
<i>Pepper</i>	36	27	↓	9
<i>Onion</i>	24	27	↑	3
<i>Peanut</i>	20	27	↑	7
<i>Corn</i>	27	25	↓	2
<i>Carrot</i>	27	24	↓	3
<i>Bean</i>	26	24	↓	2
<i>Garlic</i>	16	20	↑	4
<i>Grape</i>	25	16	↓	9
<i>Pear</i>	24	15	↓	9
AVERAGE	39.5	35.4	↓	4.1

Percentage of the students who knew each word in the tests of the first mixed set

MIXED SET 1	Immediate Test %	Delayed Test %	Change	
			Direction	Rate %
Sun	76	73	↓	3
Hat	62	71	↑	9
Eye	80	67	↓	13
Tooth	74	53	↓	21
Drum	64	53	↓	11
Chest	62	53	↓	9
Axe	80	47	↓	33
Drill	60	44	↓	16
Plane	49	44	↓	5
Ring	45	42	↓	3
Rat	56	40	↓	16
Mug	58	35	↓	23
Pin	56	33	↓	23
Comb	38	33	↓	5
Nail	42	27	↓	15
Wheel	49	24	↓	25
Fork	38	24	↓	14
Kite	38	24	↓	14
Key	31	22	↓	9
Pan	55	20	↓	35
AVERAGE	55.6	41.4	↓	14.2

Percentage of the students who knew each word in the tests of the second mixed set

MIXED SET 2	Immediate Test %	Delayed Test %	Change	
			Direction	Rate %
Happy	85	75	↓	10
Cookie	82	71	↓	11
Rain	71	67	↓	4
Puppet	65	67	↑	2
Skull	58	65	↑	7
Stool	62	62	↓	0
Needle	60	55	↓	5
Cook	76	53	↓	23
Plug	45	51	↑	6
Button	45	51	↑	6
Swim	49	49	↓	0
Walk	35	49	↑	14
Bell	71	47	↓	24
Peg	55	45	↓	10
Hammer	53	45	↓	8
Soap	53	42	↓	11
Saw	44	38	↓	6
Sleep	42	38	↓	4
Circle	34	31	↓	3
Scale	36	29	↓	7
AVERAGE	56.05	51.5	↓	4.5

Appendix 7: The Questionnaire Used in the Main Study

THE QUESTIONNAIRE

Please circle the alternative that describes you best!

1. Did you study the new words out of the lesson?
a) YES b) NO
2. If your answer to question 1 is 'yes', how did you study?
a) Mostly with a dictionary
b) Mostly with my parents
c) Other
3. Which lesson was easier for you?
a) Lesson 1
b) Lesson 2
c) Lesson 3
d) Lesson 4

ANKET

Lütfen kendinize en uygun seçeneği işaretleyin!

1. Yeni öğrendiğiniz kelimelere ders dışında da çalıştınız mı?
a) Evet b) Hayır
2. Eğer 1. soruya yanıtınız 'Evet' ise, nasıl çalıştınız ?
a) Genellikle bir sözlük ile
b) Genellikle anne veya babam ile
c) Diğer bir şekilde
3. Sizin için hangi ders daha kolaydı?
a) 1. ders
b) 2. ders
c) 3. ders
d) 4. ders