

T.C.
ABANT İZZET BAYSAL UNIVERSITY
INSTITUTE OF EDUCATIONAL SCIENCES

**AN EXPERIMENTAL STUDY ON THE EFFECTS OF
MEMORY STRATEGIES ON VOCABULARY RETENTION**

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INSTITUTE OF EDUCATIONAL SCIENCES
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DEPARTMENT OF ENGLISH LANGUAGE TEACHING

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**In Partial Fulfillment of the Requirements for the Degree of
MASTER OF ARTS IN ENGLISH LANGUAGE TEACHING**

by
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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all materials and results that are not original to this work. / / 2011

Gülay Karabulut

ABSTRACT

An Experimental Study on the Effects of Memory Strategies on Vocabulary Learning

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This study was conducted in order to investigate the effects of the use of memory strategies in vocabulary instruction on students' success. To this end, the study was carried out with students at the beginning level at the English Preparatory School at

Abant İzzet Baysal University. In the research, an experiment group and a control group, which consisted of a total of 51 students, were used. The study lasted for five weeks. During this period, one of the five memory strategies was focused on each week. The selected strategies were using keywords, using imagery, grouping, semantic mapping, and placing new words into a context.

The researcher scanned the words in the coursebook in the three word lists which are mostly referred to and identified their frequencies. During the study, not only was information on the strategies given but also they were used in instruction. In order to determine the effects of the method used, experiment and control group were given pre- and post- tests every week. These tests aimed to assess the effects of the strategies not only on reception of the words but also on the production of them. In addition, the researcher collected information about the students' opinions on the strategies .

For the statistical analysis of data, paired-samples t- test method was used. As a result of the analyses, significant increases were found in the scores of both the experiment group and control group. However, when the two groups were compared, it was seen that the increase in the scores of the experiment group was much higher. When it comes to identifying learners' opinions about the strategies, it was found out that participants had positive opinions about them.

Key Words: Learning Strategies, Memory Strategies, Receptive Learning, Productive Learning, Retention

ÖZET

BELLEK STRATEJİLERİNİN KELİME ÖĞRENİMİNDE ETKİLERİ ÜZERİNE DENEYSEL BİR ÇALIŞMA

KARABULUT, Gülay
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Bu çalışma, bellek stratejilerinin kelime öğretiminde kullanımının öğrencilerin başarısı üzerindeki etkisini araştırma amacıyla yapılmıştır. Bu nedenle, çalışma Abant İzzet Baysal Üniversitesi bünyesindeki İngilizce Hazırlık Okulu'nda öğrenim gören başlangıç seviyesindeki öğrencilerle yapılmıştır. Çalışmada toplam 51 öğrenciden oluşan bir deney ve bir kontrol grubu kullanılmıştır. Çalışma beş hafta sürmüştür. Bu süre boyunca, her hafta bir strateji olmak üzere beş bellek stratejisi üzerinde durulmuştur. Seçilen stratejiler anahtar kelime kullanma, imgeler kullanma, gruplandırma, kavram haritaları ve sözcüğü bir metin içinde kullanmadır.

Araştırmacı, kullanılan ders kitabındaki yeni kelimeleri en çok başvuru alan üç kelime listesinde taramış ve kullanım sıklıklarını belirlemiştir. Araştırma süresince, hem stratejiler hakkında bilgi verilmiş hem de ders anlatımında bu stratejiler kullanılmıştır.

Kullanılan yöntemlerin etkisini belirlemek için deney ve kontrol grubuna her hafta ön ve son testler uygulanmıştır. Bu testler, stratejilerin sadece kelimeleri tanıma değil aynı zamanda kelimeleri üretebilme becerisi üzerindeki etkisini ölçmeyi

amaçlamıştır. Ayrıca araştırmacı, öğrencilerin stratejiler hakkındaki görüşleriyle de ilgili bilgi toplamıştır.

İstatistiksel analizler için paired- samples t-test yöntemi kullanılmıştır. Analizler sonucu, deney ve kontrol gruplarının puanlarında anlamlı artışlar olduğu saptanmıştır. Fakat, her iki grup kıyaslandığında deney grubu puanlarında görülen artışın kontrol grubuna oranla çok daha yüksek olduğu görülmüştür. Çalışmanın bir diğer amacı olan öğrencilerin stratejilerle ilgili görüşlerini belirlemeye gelindiğinde ise, katılımcıların stratejiler hakkında pozitif düşüncelere sahip oldukları saptanmıştır.

Anahtar Kelimeler: Öğrenme Stratejileri, Bellek Stratejileri, Algısal Öğrenme, Üretimsel Öğrenme, Hatırlama

CHAPTER I

1. Introduction

1.1. Background to the Study

Vocabulary instruction is a fundamental issue in foreign language learning; nevertheless, much of foreign language education seems to be devoted to the development of learners' grammatical competence. According to Segler (2001:1), 'lexis has traditionally been the Cinderella of the field of Second Language

Acquisition (SLA) research,' which means that it is common for teachers and researchers to assume that vocabulary learning occurs without much interference in time. Hence, learners are usually left alone, and they are expected to cope with the large number of words they have to learn while teaching focuses mainly on grammar and the development of their overall communicative competence.

To emphasize the role of vocabulary in language learning, Cook (1996: 49) declares that 'grammar provides the overall patterns, vocabulary the material to put in the patterns.' In this respect, building learners' understanding of word meanings is essential for the development of many other language- learning areas. As Read (2000: 1) puts it, 'words are the basic building blocks of language, the units of meaning from which larger structures such as sentences, paragraphs, and whole texts are formed.' Accordingly, the role of vocabulary in language teaching is more fundamental than the common assumption made about it.

Meara (1980) points out that once learners pass the initial stages of acquiring

their second language, they identify the acquisition of vocabulary as their greatest single source of problems. Therefore, learners who are incapable of supplying the right words to be used in the grammar patterns they have been taught cannot be expected to make much progress in the target language. At this point, learning strategies can be a beneficial tool with which students can foster their mastery over new vocabulary. Recently, there has been a growing interest in learning strategies, including vocabulary learning strategies, used by language learners. As O'Malley and Chamot (1990: 3) mention 'the literature on learning strategies in second language acquisition emerged from a concern for identifying the characteristics of effective learners.' Hence, the identification of the effective strategies employed by successful learners would pave the way to the improvement of learning experience of less successful students.

1.2. Statement of the Problem

Lack of mastery in the use of lexical items leads to both frustration and failure on the part of the learners. In order to overcome this problem, or at least minimize it, one major goal of teachers should be to equip the learners with the most effective strategies to help them store the essential vocabulary and be able to remember and retrieve it in the long term. Memory is the relevant concept here as it is crucial for learning. In the long-term, vocabulary items are most likely to be remembered if they are processed at a deeper level in a meaningful way. From this perspective, learning strategies, particularly memory strategies, which require elaborative or deeper- level processing are helpful to improve the memory of students. Oxford (1990: 8) defines learning strategies as 'specific actions taken by the learner to make learning easier, faster, more enjoyable, more self- directed, more effective and more transferrable to new situations.' However, it is surprising that in spite of the potential benefits of learning strategies for language students, strategy- based instruction is not a common practice in language classrooms, which usually results from time constraints and teachers' lack of knowledge or desire. In such a case, students themselves usually try to learn new words by their individual efforts. However, most of them do not go far. The limit does not go beyond keeping written records of the new words. In order to

overcome this conventionally troubling situation, which leads to the Cinderella effect mentioned before, it is viable to familiarize students with strategies that will empower and motivate them. Thompson (1987: 43) points out that ‘memory strategies, or mnemonics, help individuals learn faster and recall better because they aid the integration of new material into existing cognitive units and because they provide retrieval cues.’ Hence, teachers should begin with modelling their use while teaching in the classroom. This way, learners will become familiar with the strategies and their use, and they will begin to use these strategies whenever they need them.

1.3. Purpose of the Study

This study seeks to investigate the development of learners’ vocabulary by using five memory strategies, which belong to a subcategory of language learning strategies. These five strategies are using keywords, visuals, grouping, semantic mapping, and placing new words into a context.

Although memory strategies help learners learn and remember vocabulary items more effectively, research shows that students rarely report using them (Oxford, 1990). The researcher aims to expose learners of English as a foreign language to five of the memory strategies while teaching vocabulary at the preparatory school at Abant İzzet Baysal University in Turkey. The main purpose of this study is to investigate whether and to what extent the use of memory strategies in vocabulary teaching has a role to play in students’ overall vocabulary learning. In addition to showing the impact of the use of the selected strategies on students’ vocabulary knowledge in general, statistical analysis of the data collected throughout the study will be done to determine how the use of the selected memory strategies influences students’ success at recognition (reception) and recall (production) levels. Students’ attitudes to the use of strategies will also be investigated.

1.4. Research Questions

This study aims to answer the following research questions:

1. To what extent does instruction in the selected five memory strategies in vocabulary teaching affect students' achievement in vocabulary learning?
2. To what extent does the use of memory strategies in vocabulary teaching influence students' knowledge at the receptive and productive levels?
 - a) Is there a difference between the scores of the experiment group at the receptive level in the pre- and post -tests?
 - b) Is there a difference between the scores of the experiment group at the productive level in the pre- and post-tests?
 - c) Is there a difference between the total scores of the experiment group in the pre- and post-tests?
 - d) Is there a difference between the scores of the control group at the receptive level in the pre- and post-tests?
 - e) Is there a difference between the scores of the control group at the productive level in the pre- and post-tests?
 - f) Is there a difference between the total scores of the control group in the pre- and post-tests?
 - g) Is there a difference between the post-test scores of the experiment and control group?
3. What are the students' attitudes toward the use of memory strategies?

1.5. Significance of the Study

Considerable research has been done to investigate the learning strategies that are consciously or unconsciously employed by foreign language learners. However, most of the studies in the literature focus on identifying the existing strategy use by language learners by using questionnaires in which students who are mostly unaware of the concept of 'vocabulary learning strategies' are asked to report what techniques they prefer while studying vocabulary. In this study, vocabulary teaching is going to be

complemented by teaching five memory strategies. Hence, learners will be familiar with how these techniques can be utilized. The results of the tests, therefore, will illustrate what effects the selected strategies have on students' retention of vocabulary. The setting for this study is a higher education context; it is going to take place in a preparatory school, which aims to equip the students with the academic skills to follow the courses in their departments. All four skills- reading, writing, listening, and speaking- are given importance during one year, and the significance of vocabulary is better understood by teachers when students encounter difficulties due to their limited repertoire of vocabulary. Thus, memory strategies may enable students to deal with a handicap that prevents their academic development.

1.6. Data Collection

To assess the influence of the selected memory strategies on learners' success in vocabulary learning, an experimental study will be carried out. To this end, there will be an experiment group and a control group in the study. The former group will be taught vocabulary using the five memory strategies, but in the latter group there will be no strategy-based teaching. During the study, data will be collected through pre- and post-tests to determine the effects of instruction in memory strategies in vocabulary teaching. The vocabulary items used in these tests will be selected from among the lexical items taught in classes. The selection of those items will also be based on their frequency and usefulness. The criteria used for this purpose are the General Service List (GSL), Academic Word List (AWL), and University Word List (UWL). In order to discover students' attitudes to the selected memory strategies, students will also be asked to write self-reports to reveal their opinions.

1.7. Definition of Terms

Learning strategies: 'Learning strategies are steps taken by students to enhance their own learning. Strategies are especially important for language learning because

they are tools for active, self-directed involvement, which is essential for developing communicative competence' (Oxford, 1990: 1).

Memory strategies: 'Memory strategies help learners store in memory the important things they hear or read in the new language, thus enlarging their knowledge base ' (Oxford, 1990: 58). These strategies also enable learners to retrieve information from memory when they need to use it for comprehension or production.

Receptive learning: Receptive learning involves being able to recognize a word and recall its meaning when it is met. 'Receptive carries the idea that we receive language input from others through listening or reading and try to comprehend it' (Nation, 2001: 24).

Productive learning: Productive learning involves what is needed for receptive learning plus the ability to speak or write needed vocabulary at the appropriate time. 'Productive vocabulary use involves wanting to express a meaning through speaking or writing and retrieving and producing the appropriate spoken or written word form' (Nation, 2001: 25).

CHAPTER II

2. Literature Review

2.1. Presentation

This chapter will review the literature relevant to the study. First, literature concerning vocabulary learning will be presented. Then, the role of memory in learning will be explored. Finally, language learning strategies and vocabulary learning strategies will be explained.

2.2. A Brief Look at the Historical Trends in Second Language Vocabulary Instruction

That vocabulary is an essential component of language teaching is obvious; therefore, it has been significantly influenced by the changing trends in second language instruction.

Schmitt (2000) reports that there are records of vocabulary learning in foreign language learning extending back to the second century B.C., when Roman children studied Greek. Since the art of rhetoric was of high importance at that time, the task of learning vocabulary was emphasized. In the medieval era, however, the study of grammar was prioritized over vocabulary as students studied Latin. Despite the criticisms of some reforming educators, the popularity of teaching grammar continued in the Renaissance period, too. There were a few attempts to draw attention to teaching vocabulary. In 1611, William of Bath wrote a text presenting vocabulary in context. It contained 1200 proverbs that exemplified common Latin vocabulary. In general,

though, the focus of language instruction was on rule-oriented treatments of Latin grammar. This tendency influenced English as well. In the eighteenth and nineteenth centuries, it was believed that everything was governed by laws, and that language was no exception. Inevitably, prescriptive grammar came to be appreciated, which overshadowed vocabulary.

Schmitt (2000) points out that the Grammar Translation method was the most important language teaching methodology from the beginning of the nineteenth century. In that method, the content was organized around reading literary materials; hence, the focus was on the literary vocabulary of the classics.

Towards the end of the nineteenth century, the Direct Method came to the scene. As Zimmerman (1997) mentions, the proponents of this method believed in the necessity of using the target language as the medium of instruction without making use of the L1. Concrete vocabulary was taught with pictures and demonstrations. Also, objects were made use of while demonstrating meaning; hence, the term *realia* seems to have been adopted at that time.

Like many other language methods, the Direct Method had its critics, too. Thus, the 1920s and 1930s saw the birth of a new method, the Reading Method. It was proposed that the time language learners had to be exposed to the target language was so limited; hence, developing overall language proficiency was beyond the reach of the L2 learners. Therefore, a more limited goal was recommended: teaching learners how to read in a foreign language. In Britain, Michael West emphasized the need to improve reading skill by increasing vocabulary knowledge. To this end, West published *A General Service List of English Words* in 1953. It was perhaps the first time that vocabulary was accepted as one of the most significant components of second language learning (Zimmerman, 1997).

With the decline of the Direct Method, the ‘Army Method’, which was later referred to as the Audiolingual Method, gained popularity. Since the focus was on teaching structural patterns in this method, vocabulary items needed to be easy and

familiar. The followers of the audiolingualism believed that language learners usually overrated vocabulary knowledge. As a result, the role of grammar came to be overemphasized in language classrooms once again (Zimmerman, 1997).

Schmitt (2000) states that Chomsky's attack on the behaviorist theory underlying the Audiolingual Method was effective in the late 1950s. It came to be realized that language was governed by cognitive factors. In 1972, Hymes introduced the concept of 'communicative competence'; therefore, sociolinguistic and pragmatic factors were emphasized. Instead of accuracy, appropriateness to the context was given importance. This shift was represented by a new development, Communicative Language Teaching (CLT). In this method, the focus was not on grammatical accuracy, but on fluency and the message. In such an approach, vocabulary is expected to be of high importance; however, functional language (e.g. how to make a request) came to be more significant. Thus, CLT is of little help about how to handle new vocabulary.

Another significant trend in language teaching, the Natural Approach, was developed by Krashen and Terrell in late 1970s. The Natural Approach is known to be based on five hypotheses: 1) the distinction between acquisition and learning; 2) the natural order hypothesis; 3) the monitor hypothesis; 4) the comprehensible input hypothesis; and 5) the affective filter hypothesis. As Zimmerman points out (1997), what is emphasized in the Natural Approach is the meaningfulness and comprehensibility of the input rather than the grammatically correct production. Thus, vocabulary is given importance.

It is clear that each method brought its own principles to vocabulary instruction. As Sökmen (1997: 239) observes 'the pendulum has swung from direct teaching of vocabulary (the grammar translation method) to incidental (the communicative approach).' In general, however, vocabulary was seen to be inferior to the grammatical aspect of the language. Zimmerman (1997: 17) evaluates the shifts in language teaching methodologies by emphasizing that vocabulary instruction has not gained priority in second language acquisition research:

Theoretical priorities have changed throughout language teaching history,

as reflected in the relative importance placed on pronunciation, grammar, reading, or conversing. Likewise, there have been contrasts in attitudes towards the use of formal versus colloquial language. Until recently, however, there has been little emphasis placed on the acquisition of vocabulary; although the lexicon is arguably central to language acquisition and use, vocabulary instruction has not been a priority in second language acquisition research or methodology. It is hoped that the central role occupied by vocabulary in the reality of language learning will one day be reflected in the attention given to it in research and the classroom.

Recently, however, it has been realized that the dichotomy between grammar and vocabulary is an artificial one. Schmitt (2000) uses the term 'lexicogrammar' to demonstrate that the two are basically linked. Language databases, or corpora, now provide strong evidence that much of what was traditionally thought of as grammar is, in fact, constrained by lexical choices. As a consequence, it is becoming increasingly clear that a second language cannot be learned without addressing two essential components: vocabulary and grammar.

2.3. What is a Word?

In order to start any discussion about vocabulary, one should first begin with what counts as a word. Though it sounds to be a simple task, it seems that there is not one definite answer to this question; that is, the literature provides different approaches to what counts as a word. Nation (2001) presents four ways of counting words:

- 1) Tokens (running words): Even though one word occurs more than once in a text, it is counted (this method can be used to answer the question 'how many words are there in this text?');
- 2) Types: When the same word occurs more than once in a text, it is not counted again (this method can be used to find out how many words are needed to read a book);

- 3) Lemmas: A lemma is composed of a root and its inflected (e.g. plural form, possessive, comparative, past tense etc.) or contracted forms (n't forms) (Bauer and Nation, 1993, as cited in Nation, 2001: 7);
- 4) Word families: A word family is composed of a base word, all of its inflections and its related derivatives. Words 'wrote, writing, and writes', for example, are inflections of the root word 'write'. If the word class of the stem is changed by an affix, it is a derivative. 'Productive (adjective)' and 'production (noun)', for instance, are derivatives of the verb 'product'.

Read (2000) mentions that words are of two types: function words and content words. Articles, prepositions, pronouns, conjunctions, and auxiliaries are referred to as function words. Nouns, verbs, adjectives, and adverbs are called content words. Function words are considered to belong to the grammar of the language rather than to its vocabulary. In other words, they have little if any meaning in isolation. They provide links within sentences, and they modify the meaning of content words.

Carter and McCarthy (1988) approach words on the basis of meaning, and define words as consisting of meaningful bits of language and as freestanding. Schmitt (2000) advocates that there is not always a direct association between a single word and a meaning. That is, a number of words can be used to get across a meaning, which is often seen in the English language (e.g. *expire*, *pass away*, *give up the ghost* are some expressions with the meaning 'to die'). To avoid a confusion, then, the term 'lexeme'-lexical unit or lexical item- can be used. Moon (1997, as cited in Takac, 2008: 5-6) defines lexeme as 'an abstract unit that includes various orthographic, phonological, grammatical and semantic features of a word.'

McCarthy (1990) also mentions multi-word units (fixed forms that are composed of more than one word), which are different from compounds. Idioms are a good example of multi-word units. In addition, some verbs in English are idiom-prone (e.g. *to go mad*, *to make the best of*, etc.). Other multi-word units are binomials, such as 'fish and chips' and trinomials, such as 'ready, willing and able', which are pairs and trios of words that occur in a sequence and have a fixed membership.

2.4. The Receptive / Productive Knowledge Distinction in Vocabulary

As Schmitt (2000: 5) notes ‘the potential knowledge that can be known about a word is rich and complex.’ At this point, the distinction between ‘receptive vocabulary’ and ‘productive vocabulary’ should be considered. Nation (2001: 24-25) defines ‘receptive vocabulary’ as ‘involving perceiving the form of a word while listening or reading and retrieving its meaning’; however, he states that ‘productive vocabulary use involves wanting to express a meaning through speaking or writing and retrieving and producing the appropriate spoken or written word form.’ Receptive vocabulary is sometimes referred to as ‘passive vocabulary’, whereas, productive vocabulary is also known as ‘active vocabulary.’ Melka (1997) adds that the terms ‘comprehension vs. production, understanding vs. speaking, recognitional vocabulary vs. actual or possible use’ are used to refer to the distinction between receptive/ productive vocabulary.

As Nation (2001) states it is generally thought that receptive learning is easier than productive learning, which has several explanations:

- 1) The amount of knowledge can be one factor. Productive learning is more demanding since extra learning of new spoken or written output patterns is needed. This is especially true for learners whose native language uses a different writing system, such as Arabic learners of English. In addition, different sounds and sound combinations present difficulty. Whereas receptive learning requires the learner to focus on fewer distinctive features of the form of a vocabulary item, for productive use the learner needs more precise knowledge of the word form. It is the form of the items that affects the difficulty rather than the meaning, and for production a detailed knowledge of the word form is needed.
- 2) Practice may be another explanation. Normally, it is the receptive use which is usually practised more. The difference in the amount of practice between receptive and productive use may account for the different vocabulary size in receptive and productive vocabulary.
- 3) Access is the third factor. It is suggested that a new vocabulary item has just one link to its first language translation (receptive learning) in the early

stages of language learning; however, the L1 word has other associations such as collocations, synonyms, opposites, etc. as well. Hence, productive learning is more challenging than receptive learning due to the fact that there exist different competing paths to choose from. It should also be added that the L1 lexical system is stronger (Ellis and Beaton, 1993, as cited in Nation, 2001: 29).

- 4) Motivation is the final factor. Lack of motivation may result from different reasons, one of which is socio-cultural background; thus, learners may be reluctant to use some words in their production (Corson, 1995, as cited in Nation, 2001: 30). If the learner does not use these words despite knowing them, they remain as a part of their passive vocabulary.

2.5. What Does It Mean to Know a Word?

Basically, knowing a word involves knowing its form and meaning (Thornbury, 2002). Nevertheless, knowing the form and meaning of a vocabulary item does not seem to be enough to master the vocabulary learned. Learning vocabulary seems to be a multi-dimensional task. Laufer (1997) states that in order to know a word, the knowledge of form (spoken and written), word structure (the basic free morpheme, its derivations and inflections), syntactic pattern of the words in a phrase and sentence, meaning, lexical relations of the word with other words (synonyms, antonyms) and common collocations must be known.

Nation (2001: 26) points out that ‘at the most general level, knowing a word involves form, meaning and use’, and explains what it means to know a word by taking the receptive/ productive vocabulary knowledge distinction into consideration. The following table illustrates what it means to know a word. *R* represents receptive knowledge, and *P* represents productive knowledge.

Table 2-1. What is involved in knowing a word? (Nation, 2001: 27)

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

Knowing the form of a word involves knowing its spoken and written form and word parts. From the point of view of receptive knowledge of a word, the learner is expected to recognize the word when it is heard, and for productive knowledge, one is required to use it to express a meaning (Nation, 2001). As Laufer (1997) mentions, due to the differences between the L1 and L2 systems, the learner may experience difficulties in discriminating some phonemes. On the other hand, the learner can easily perceive, pronounce and remember the word if he is familiar with its phonological features. On the productive side, in order to pronounce a word correctly, it is required to know the place of the stress in a word. However, the place of the stress varies in

English, which is a factor of difficulty of learning words for learners from different L1 backgrounds. Knowing the spoken form of a word, then, is not a simple task for learners; accordingly, that a learner is able to perceive a word does not mean that he can produce it correctly. In fact, students may tend to avoid using phonologically problematic vocabulary items as a strategy to overcome this problem.

Learning the written form of a word is another aspect of knowing a word. Schmitt (2000) states that though orthographical knowledge was traditionally considered as knowledge of a lower level, it has recently been realized that it is an essential component of vocabulary knowledge. As in the case of learning the spoken form of a word, L1 plays a significant role in the learning burden of the written form of words. Laufer (1997), Nation (2001) and Schmitt (2000) point out that learning problems may result from a different L1 writing system. Nation (2001) states that poor spelling influences learners' output; in other words, they are likely to prefer words which are spelled regularly and use a limited number of words.

Knowing a word also involves knowing its word parts, i.e. its affixes and stem. Nation (2001) mentions that for native speakers of English, one of the main ways of increasing their vocabulary knowledge is through recognizing and building new words by using affixes. This also holds true for foreign language learners. In fact, the word part strategy can be an effective way of dealing with the big number of words in a new language. Laufer (1997) writes that once the learner is able to decompose a word into its parts, he can recognize it and subsequently use it in his production. Nation (2001) also emphasizes the benefit of teaching word part strategy so that the students can learn the frequently used affixes, recognize them in words and find out the meaning of the words.

Connecting the form and meaning, knowing the concept and its referents and associations are also involved in knowing the meaning of a word. Nation (2001) states that the learner should be able to connect the form (written or spoken) and the meaning of the word in order to know it. The stronger the connection between the form and the meaning of the word is, the easier it is for the learner to retrieve the meaning of it. It should also be noted that the similarities between the first language and the target

language (e.g. loan words) make it easier to connect the form and meaning of words.

In order to know a word, the concept and its referents should be learned as well. As Nation (2001) mentions, it is seen that words, especially high-frequency words, may have many different meanings. For example, for the word '*bank*', one can find '*the bank of a river*' or '*the national bank*'. Nagy (1997) makes a distinction between two kinds of contextual variation in the meanings of words. The first one is 'sense selection.' Through sense selection, the language user decides in which sense the word is being used in a particular context. To illustrate, the learner should be able to decide whether the word 'bear' is a verb or a noun in a particular context. The second one is 'reference specification.' Though one word is not used in a different meaning in a particular context, it may refer to different items. For instance, the word 'boy' may refer to two different people in the same context.

Learning the associations of a word is an essential component of knowing it. Miller and Erlbaum (1991, as cited in Nation, 2001:52) state that in order to describe the organizational structure of the lexicon, it is important to distinguish between parts of speech. As Nation (2001) states relationships (e.g. synonymy, antonymy) are helpful to prepare classification activities with vocabulary items.

Grammatical functions, collocations and constraints on the use of a word are crucial to knowing a word. Grammatical knowledge involves knowing what part of speech the word is. It also involves knowing what patterns a word can fit into grammatically. It has recently been realized by linguists that lexical knowledge plays a significant role in grammar (Nation, 2001).

Knowing what other words a word collocates with is of great help for learners. As Schmitt (2000) points out like the information on the frequency of words, collocational information can be obtained from corpus research as well. From the point of view of the learning burden of vocabulary, collocations are helpful to learners since they show patterns. It is also worth mentioning that learning will be easier if collocations in the first and the target language are similar (Nation, 2001).

Finally, knowing a word involves the knowledge of the constraints on the use of it. Schmitt (2000) uses the term 'register' to refer to the appropriateness of certain words in certain language situations. Actually, this is a real challenge for foreign language learners, particularly for those at the beginning level. As Laufer (1997) mentions learners are often unable to decide whether vocabulary items that are frequently used in one field are acceptable in another. At this point, frequency is an important factor in teaching the constraints on the use of a word. If one uses low-frequency words very often, for example, it may have a comical effect (Nation, 2001).

2.6. Explicit / Implicit Learning of Vocabulary and the Learning Burden

Having seen what it means to know a word, one should look at the two ways of learning it: explicit and implicit learning. As Schmitt (2000) states, in explicit learning attention is directly focused on the information to be learned; however, it requires too much time, and for the student it is demanding to learn an adequate size of lexicon through explicit learning. Implicit, or incidental, learning, on the other hand, occurs when the language is being used for the purpose of communication. Though it is more beneficial than explicit learning, implicit learning is slower in nature.

Nation (2001) argues that the distinction between the form and meaning learning aspects of vocabulary parallels the distinction between explicit and implicit learning. Formal recognition and production depend on implicit learning; however, explicit, conscious processes are what the meaning and linking aspects rely on (Ellis, 1995, as cited in Nation, 2001:33). Nation and Waring (1997) declare that incidental, or indirect, learning is a way that enables the learner to deal with the large number of words to be learned. Through extensive reading, for instance, the student has access to the most frequent words in context. Schmitt (2000) points out that explicit and incidental are both needed for second language learning, and they complement each other. Significant vocabulary items, especially high-frequency words and technical vocabulary, deserve explicit attention. Nation (1995, as cited in Schmitt, 2000: 121) approaches the teaching of vocabulary in terms of cost/ benefits and states that some words are well worth the

time spent on teaching them explicitly. Infrequent words, on the other hand, can be left to incidental learning.

Whether they are learned implicitly or explicitly, some vocabulary items can be said to be more difficult than others for learners. Carter and McCarthy (1988) state that learner's perception of the difficulty of words, as well as the teacher's approach, influence the learning of vocabulary. Thornbury (2002) lists some factors affecting the difficulty of words: pronunciation, spelling, length and complexity, grammar, meaning, range, connotation, and idiomaticity. Nation (2001) refers to this difficulty as 'learning burden', i.e. the amount of effort the learner spends to learn a word. At this point, language background of the learner plays a crucial role. Nation (1990) explains what is meant by 'learning burden': If the sounds and the grammatical patterns in English and the mother tongue are similar, the learning burden will be lighter. In addition, the words whose meanings correspond to those in the first language are easier to learn. The associations that are formed in the brain can also make learning easier. In other words, if the learner can build associations among the vocabulary items, they can easily be stored in their minds. However, as mentioned before, the learner will face some problems if his native language does not use the Roman script (e.g. Chinese, Arabic, etc.). The collocations of the word are another factor that makes learning difficult. In addition, the frequency of the words may increase the learning burden. For instance, a learner may tend to use a low-frequency word when a more frequent one is available.

2.7. Vocabulary Size and Frequency: Two Key Factors in Vocabulary Selection and Teaching

It would be tempting to learn all the vocabulary of the target language; however, it is obvious that 'even native speakers do not know all the vocabulary of the language' (Nation, 2001: 6). At this point, the question 'How many words are there in English?' should be considered. Nation and Waring (1997) suggest that this question should be answered by looking at the number of words in the largest dictionary. Goulden, Nation, and Read (1990, as reported in Nation, 2001: 6) state that *Webster's Third New*

International Dictionary consists of about 114.000 word families, not including proper names, which is far beyond the reach of a foreign language learner. It should be reminded that a word family includes the base word, its inflections, and its common derivatives (Schmitt, 2000).

Thus, mastering all the vocabulary in a language does not seem to be possible even for a native speaker even though they learn a significant amount of vocabulary from the very beginning as Nation and Waring (1997: 7) explain:

At present the best conservative rule of thumb that we have is that up to a vocabulary size of around 20.000 word families, we should expect that native speakers will add roughly 1.000 word families a year to their vocabulary size. That means that a five year old beginning school will have a vocabulary of around 4.000 to 5.000 word families.

Schmitt (2000) states that 20.000 word families is the average number a 20-year-old university student native speaker is expected to know. The high number of words in the target language may be discouraging to the foreign language learner. However, as Nation and Waring (1997) point out not all the words a native speaker knows are equally useful. In fact, the usefulness of a word can be measured by its frequency, or the rate of its use in the normal use of the language. Nation (2001) classifies vocabulary into four types as high-frequency words, academic words, technical words and low-frequency words. He suggests that compared to the large number of words occurring only once in texts, a small amount of well-chosen high-frequency words can allow learners to do a lot. Michael West's list of high-frequency words, *A General Service List of English Words* (1953), which contains around 2.000 word families, is a valuable reference for this purpose. Research shows that these 2.000 words account for about 80% of the words found in any text. These figures demonstrate the need to focus on high-frequency words in teaching English as a foreign language classes. Unlike the high-frequency words, academic words make up about 9% of the words in a text. Technical words vary according to the subject area, and account for about 5% of the words in a text. Finally, low-frequency words make up the biggest group of words in a language since there are thousands of them, and only 5% of words in a text are low-

frequency words (Nation, 2001).

Frequency counts are significant because as Nation and Waring (1997: 17) state, ‘word frequency lists provide a rational basis for making sure that learners get the best return for their vocabulary learning effort by ensuring that words studied will be met often.’ Due to the advancements in technology, the use of corpora in vocabulary studies has become widespread in recent years. However, as Nation and Waring (1997) declare creating a frequency list is not solely a mechanical task. Other criteria including representativeness, frequency and range, word families, idioms and set expressions, range of information, ease or difficulty of learning, necessity, cover, and stylistic level and emotional words should also be taken into consideration in the development of a list.

After a general look into the historical background of vocabulary teaching, linguistic properties of a word and what it means to know a word, it is time to examine the role of memory in learning.

2. 8. The Role of Memory in Learning

The fact that learning has to do with memory is well-known. As Wolfe (2001: 74) points out ‘little formal distinction exists between learning and memory; the two are so inextricably linked that a study of one becomes a study of the other.’ Actually, scientists have gained valuable information of how the mind processes information lately. However, the study of memory is not a recent issue. Loftus and Loftus (1976) and Schwartz and Reisberg (1991) state that theorists started to talk about memory in terms of information in 1950s. This information-processing theory grew mostly as a result of the developments in computer technology. From the perspective of this theory, the human brain is analogous to a computer in that both of them are information-processing systems. Loftus and Loftus (1976) explain the correspondence between the computer and the human brain by stating that both computers and humans take in information from the environment. Computers receive information through electronic

devices, and humans receive it through their sense organs. Inside a computer, the information from the environment is manipulated, recoded, and combined with other information via activation of electronic registers. Inside a person, on the other hand, information is manipulated, recoded, and combined with other information already there via activation of neurons. Finally, a computer outputs information to the environment via devices, such as printers. Similarly, individuals output information to the environment through their mouths or hands.

In order to better explain the memory, the three stores of memory should be examined: sensory memory, working memory, and long-term memory. Wolfe (2001) states that these three categories do not represent distinct, separate stages in the process of memory, but they help one understand how the mind works. Baddeley (1983) explains that a range of sensory stores operate in parallel, and feed into a unitary short-term memory store, which has a limited capacity. The short-term store functions as a working memory. The information is held and manipulated here, and then transferred to the long-term store, which has an unlimited capacity. The following diagram of memory model shows the processes by which new information is encoded, stored, and retrieved by the human mind.

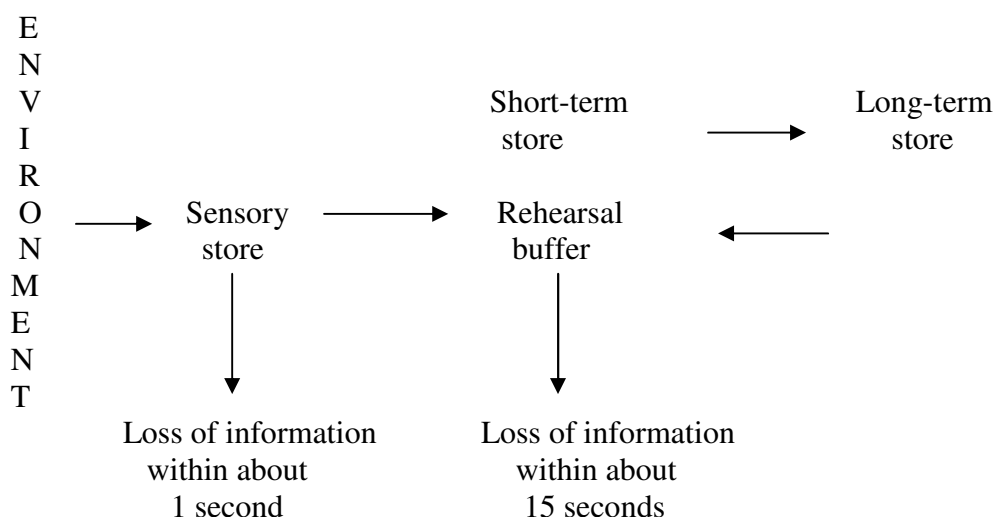


Figure 2- 1. A schematic view of the memory system (Loftus & Loftus, 1976: 8)

According to this model, sensory store is the first component of memory. The

information enters the system through one of the sense organs- sight, sound, smell, taste, or touch. Loss of information may occur within about 1 second; however, if sensory memories are quickly analyzed, the results of this analysis are transferred to the short-term store, the second component. Information in the short-term store is, in general, lost within 15 seconds. For instance, everyone must have had the experience of looking up a telephone number and discover that it has been lost by the time they have reached the telephone. However, information in short-term store can be placed into a special section of short-term called a *rehearsal buffer*. That is, once the information is rehearsed, or repeated over and over, it does not decay away. The choice of which information is to be entered and which is to be lost is made in such a way that the person can carry out whatever task he is trying to do. For example, when you look up a person's number in the telephone directory, you may also find the person's address. However, as it is not required at that moment, it is allowed to decay away (Loftus & Loftus, 1976). The capacity of short-term store is defined as the maximum number of items the subject can repeat back perfectly. Some experiments were done to reach a conclusion about the size of short-term memory. It was in the 1950s that George Miller, a cognitive scientist, carried out studies to see how much information can be consciously processed by individuals. In 1956, Miller wrote a paper entitled '*The magical number seven, plus or minus two.*' In his experiment, Miller (1956) gave subjects items of different size, including words, objects, and numerals. Whatever the type of information, the number of items subjects remembered was about seven, changing between five and nine. These items, however, do not have to be individual. Miller (1956: 15) uses the term 'chunk' to explain this:

In order to speak more precisely, therefore, we must recognize the importance of grouping or organizing the input sequence into units or chunks. Since the memory span is a fixed number of chunks, we can increase the number of bits of information that it contains simply by building larger chunks, each containing more information than before.

Loftus & Loftus (1976: 45) define a chunk as 'anything that has some unitary representation in long- term store.' They state, for instance, that '5', a digit, is a chunk; 'G', a letter, is a chunk; 'clown', a word, is a chunk. They also mention that a proverb

‘too many cooks spoil the broth’ can be a chunk, adding that a subject can be expected to remember about seven proverbs in a memory-span experiment. Taking these into consideration, it can be understood that grouping information could be a useful technique when trying to remember some piece of information. Wolfe (2001:100), therefore, declares that ‘although we cannot increase the number of chunks we can store, we can (by reorganizing or recoding) increase the amount of information that can be stored in each chunk.’

The final component of the system is long-term store, which has an unlimited capacity. Long-term memory seems to be close to what is meant by memory in everyday language. It is supposed to be the storage place where one retains memories for what he did yesterday, how he spent his childhood, the names and faces of hundreds of people, and so on. Long-term store contains information that is not immediately active, but it can be utilized when the time comes.

Long-term memory can be analyzed in two different categories: declarative and procedural memory. The former refers to the knowledge that certain facts are true- it is the ability to store and remember information that you can speak or write; the latter, however, refers to knowing how to do things, such as walking or driving. Declarative knowledge is subcategorized into two types as episodic and semantic memory. Episodic memory is responsible for the record of personal life experiences; it involves remembering where and when the information was acquired. For instance, it is the episodic memory that works when one remembers the first bike he rode. Semantic memory, on the other hand, is related to words, and their meanings (Wolfe, 2001). The following section is going to focus on the relationship between memory and vocabulary learning.

2.9. Memory and Vocabulary Learning

Vocabulary learning is essentially a memory matter. Therefore, in order to commit new vocabulary to memory, considerable effort is required. As Thornbury

(2002: 2) suggests, ‘Unlike the learning of grammar, which is essentially a rule-based system, vocabulary knowledge is largely a question of accumulating individual items. There are few short cuts in the form of generative rules: it is essentially a question of memory’.

In order to understand how words are organized in the memory, it would be useful to have a look at a few experiments. One of the most important experiments on memory which was carried out by Ebbinghaus in 1885 demonstrates how meaningfulness contributes to the learning of new items. The following diagram shows the results of his experiment:

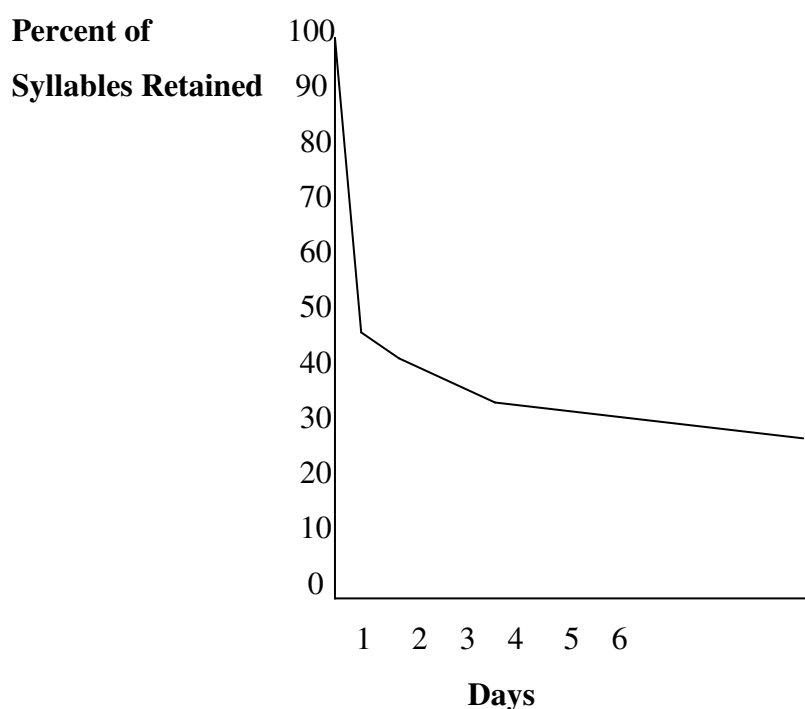


Figure 2-2. Ebbinghaus' forgetting curve (Wolfe, 2001: 104)

For his experiment, Ebbinghaus made long lists of nonsense syllables, such as *zek*, *dof*, etc. He chose these nonsense syllables in order to eliminate any effects his personal experience might have on his ability to recall the items. He would memorize a list of syllables by heart well enough to recite it twice in a row. He then tested his recall over several days. His measurement of forgetting was the time he needed to relearn the

list until he could recall it without any errors. Inevitably, lack of any previous associations had a negative effect on his learning, and retention decreased by 70 % in six days. Ebbinghaus' curve illustrates how lack of meaning influences retention negatively (Wolfe, 2001).

Meaning, then, has a crucial effect on the storage of the new items into memory. What lacks meaning does not make sense to the learner; thus, learning is impeded. In another experiment (Freedman & Loftus, 1971, as cited in Gairns & Redman, 1995: 88), Freedman and Loftus investigated how the mental lexicon is organized by comparing the speed at which people are able to recall items. It is generally considered that if certain types of prompts can be answered more quickly than others, then this will reflect the lexical system. Thus, the subjects were asked to do two different tasks:

- 1) Name a fruit that begins with a *p*.
- 2) Name a word beginning with *p* that is a fruit.

Subjects answered the first question more quickly. It seems that 'fruits beginning with *p*' are classified under the 'fruit' heading rather than under a 'words beginning with *p*' heading. This shows that words which are semantically related are stored together. It is, therefore, clear that items are arranged in a series of associative networks.

Cohen (1986) mentions associational techniques alongside with rote repetition as the tools that help learners acquire new words. These techniques include:

- 1) structural association- analyzing the word according to its root, affixes, and inflections as a way to understand its meaning
- 2) semantic association- thinking of synonyms so as to build a network of inter linking concepts, by clustering words by topic group or type of verb, or by linking the word to the sentence in which it was found or to another sentence
- 3) mnemonic association- creating a cognitive link between an unfamiliar foreign language word and its translation by means of a cognitive mediator.

When teaching, then, above techniques should be utilized by teachers so that they can make learning meaningful. In this way, new items move into long-term memory. A number of other factors have an impact on the storage of new items into long-term memory. Word frequency is a significant factor; in other words, it is easier to retrieve words that occur more frequently. Recency of use is another factor; that is, words more recently used are more available (Gairns & Redman, 1995). Thornbury (2002) also presents a list of the principles that help ensure that material moves into long-term memory:

Repetition: The material should be rehearsed repeatedly while it is still in working memory. However, if no attempt is made to organize the material, simply repeating an item does have little long-term effect. At this point, repetition of encounters with a word should also be mentioned. When reading, for instance, words can be remembered if they have been met at least seven times over spaced intervals.

Retrieval: The act of retrieving a word from memory makes it more likely that the learner will be able to recall it again later. Activities such as using the new word in written sentences makes future recall easier for the learner.

Spacing: Memory work should better be distributed across a period of time. This is known as the principle of distributed practice. This applies in both the short term and the long term. When teaching new words, it is best to present the first two or three items, then go back and test these, and present some more. The testing interval can gradually be increased as each word becomes better learned.

Pacing: Learners have different learning styles, and process data at different rates, so the teacher should give them the opportunity to pace their own rehearsal activities. For instance, the teacher may allow them to organize or review their vocabulary silently and individually.

Use: The best way of ensuring that words are added to long-term memory is to put the words to use. This principle is also known as ‘use it or lose it’. Words should

better be used in an interesting way to ensure long-term storage.

Cognitive depth: The learner should make cognitively demanding decisions about a word. For instance, matching a word with another word that rhymes it might not be as challenging as using it to complete a sentence.

Personal organizing: The judgements that learners make about a word are more effective if they are personalized.

Imaging: Easily visualized words are more memorable than words that do not immediately evoke a picture. Imaging also helps for abstract images if learners associate them with some mental image.

Mnemonics: These are ‘tricks’ to help retrieve items or rules that are stored in memory and that are not yet automatically retrievable. Even native speakers rely on mnemonics to help with some spelling rules.

Motivation: Strong motivation leads the learners to spend more time on rehearsal and practice. However, even unmotivated learners remember words if they have been set tasks that require them to make decisions about them.

Attention/arousal: A very high degree of attention seems to correlate with improved recall.

Affective depth: Affective information is stored along with cognitive data, and may play an equally important role on how words are stored and recalled.

Having seen the relationship between vocabulary learning and memory, one should also look at language learning strategies, which form the basis of vocabulary learning strategies- the focus of this study.

2.10. Language Learning Strategies

Learning strategies have been a topic of interest in recent years. Though there seems to be no consensus on the definition of the term '*learning strategies*', various explanations have been made. Before beginning a study on this subject, it is best to have a look at how strategies have been defined.

O'Malley and Chamot (1990: 1) define learning strategies as 'the special thoughts or behaviours that individuals use to help them comprehend, learn, or retain new information.' Oxford (1990: 1) states that 'Learning strategies are steps taken by students to enhance their own learning. Strategies are especially important for language learning because they are tools for active, self-directed involvement, which is essential for developing communicative competence.' Cook (1996: 103) declares that a learning strategy 'refers to a choice that the learner makes while learning or using the second language that affects learning, as distinct therefore from discourse moves or communication strategies, both of which aim at language use.'

Wenden (1987) presents three aspects of language learning strategies to show their features. First, strategies are considered as language learning behaviours which learners rely on while learning a second language. Observing learners or asking them to describe how they perform a learning task, such as completing a cloze test, give clues about these behaviours, or strategies. Second, strategies reflect what learners know about the strategies they employ, i.e., their strategic knowledge. This refers to the strategies learners consciously use when learning a second language. Thus, strategic knowledge is reflected when learners report what strategies they have used, or they should use in particular situations. Finally, learning strategies are considered to demonstrate what learners know about aspects of their language learning. In other words, personal factors influencing learning, general principles followed to learn successfully, and how well they can use the language may have an impact on learners' strategy choice.

It seems that learners at all levels tend to use learning strategies consciously or

unconsciously. What is significant here is that strategies are instruments that motivate them to do better while learning something new. Oxford (1990) makes a list of the features of language learning strategies. Language learning strategies:

1. Contribute to the main goal, communicative competence.
2. Allow learners to become more self- directed.
3. Expand the role of teachers.
4. Are problem-oriented.
5. Are specific actions taken by the learner.
6. Involve many aspects of the learner, not just the cognitive.
7. Support learning both directly and indirectly.
8. Are not always observable.
9. Are often conscious.
10. Can be taught.
11. Are flexible.
12. Are influenced by a variety of factors.

Oxford's list presents a general guideline of how strategies work. Parallel to Oxford's list (1990), Wenden (1987) presents six characteristics of language learning strategies:

1. Strategies are specific actions taken by the learner (e.g. repeating a phrase to remember it). They are not characteristics that describe a learner's general approach, as when language learners are said to be reflective, or risk takers.
2. Some of these actions are observable (asking a question) and others are not observable (making a mental comparison).
3. Strategies are problem oriented. Learners utilize them to respond to a learning need.
4. Strategies refer to language learning behaviours that contribute directly to learning- what learners do to control and /or transform incoming knowledge about the language (e.g. guessing from context, outlining a reading); to retrieve and use this knowledge (e.g. practice strategies); and to regulate learning (noting if one understands).

Strategies also refer to language learning behaviours that contribute indirectly to learning- how learners use their limited linguistic repertoire to communicate (e.g. using gestures) and what they do to create opportunities to learn and use the language (going to movies, making friends).

5. Sometimes strategies may be consciously deployed. This may happen when something new is being learned; when accuracy and /or appropriateness are considered important; when there is a need to correct or relearn familiar material; when there is an unexpected breakdown in understanding.
6. Strategies are behaviours that are amenable to change. They can be modified, rejected, and unfamiliar ones can be learned. In other words, they are a part of our mental software.

2.11. Classification of Learning Strategies

Research on language learning strategies grew out of an interest in identifying the learning behaviours of good language learners. Rubin (1987: 19) suggests that ‘much of the research on learner strategies has concentrated on identifying what good language learners report they do to learn a second or foreign language or, in some cases, are observed doing while learning a second or foreign language.’ As a result of the studies, different taxonomies of language learning strategies have been proposed.

Rubin (1981, as cited in O’Malley and Chamot, 1990: 3) groups learning strategies into two types as strategies that directly influence learning and those that indirectly affect learning. The former category consists of clarification/ verification, monitoring, memorization, guessing/ inductive reasoning, deductive reasoning, and practice. The latter includes creating practice opportunities and using production tricks such as communication strategies.

According to O’Malley and Chamot (1990), learning strategies fall into three

classes as metacognitive, cognitive, and social/ affective strategies. First, meta-cognitive strategies involve selective attention for special aspects of a learning task (e.g., planning to listen for key words or phrases); planning the organization of written or spoken discourse; monitoring or reviewing attention to a task, monitoring comprehension for information that should be remembered; evaluating or checking comprehension after completion of a receptive language activity, or evaluating language production after it has taken place. Second, cognitive strategies involve rehearsal, or repeating the names of items or objects that have been heard; organization, or grouping and classifying words, or concepts according to their semantic or syntactic features; inferencing, or using information in oral text to guess meanings of new linguistic items; summarizing; deduction; using visual images; transfer; and elaboration. Finally, social/ affective strategies involve cooperation, or working with peers to solve a problem, or get feedback; questioning for clarification; self-talk, or using mental control to assure oneself that a learning activity will be successful.

Another classification was proposed by Oxford (1990). It is a detailed taxonomy which takes four language skills into consideration. It is broadly divided into two groups as direct and indirect learning strategies. Direct strategies are further divided into three types as memory strategies, cognitive strategies, and compensation strategies. These strategies require mental processing of the language; however, each of these three categories functions differently. Indirect strategies support and manage language learning without directly involving the target language. This group is subdivided into three groups as metacognitive strategies, affective strategies, and social strategies.

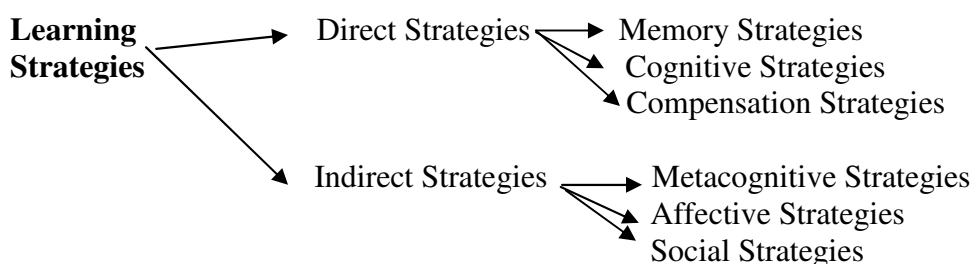


Figure 2-3. Classification of language learning strategies (Oxford, 1990:16)

2.11.1. Direct strategies

Memory strategies

Language learning strategies which directly involve the target language are referred to as direct strategies (Oxford, 1990). Memory strategies, which constitute the first subcategory of direct strategies in Oxford's classification, are also known as 'mnemonics'. Actually, they seem to be the most widely used techniques since old times. As Palmer (1996: 43) points out, ' Mnemonics have a long and distinguished pedigree. The ancient Greeks were fascinated by them- Aristotle writes at some length on the subject in his *De Insomnis* and *De Anima*- and they were no less absorbing to medieval and Renaissance scholars.'

In Oxford's taxonomy (1990), memory strategies are of four types: creating mental linkages; applying images and sounds; reviewing well; employing action. Creating mental linkages involves grouping, associating/ elaborating, and placing new words into a context. The following diagram shows how memory strategies are classified:

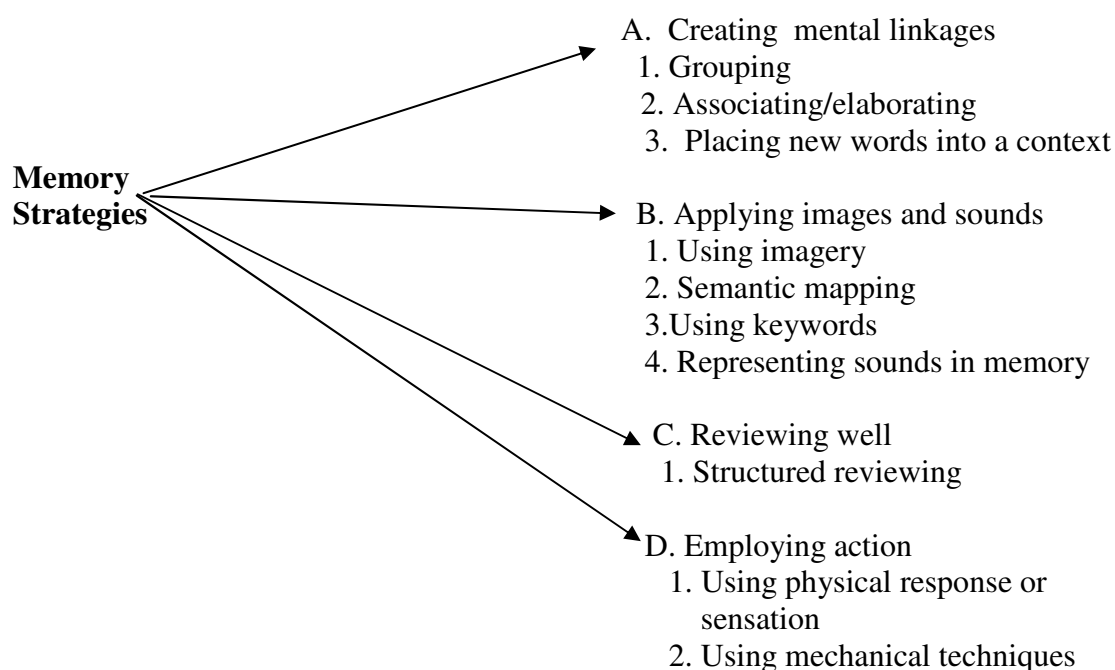


Figure 2- 4. Classification of memory strategies (Oxford, 1990: 39)

Creating mental linkages: The first subcategory of memory strategies is creating mental linkages. It is further divided into three subgroups as grouping, associating/elaborating, and placing new words in to a context. Grouping involves categorizing language input into meaningful units, either mentally or in writing ; associating/elaborating involves relating new information to the ones that already exist ; and placing new words into a context requires using a word or a phrase in a meaningful sentence, conversation, or story. Oxford observes that strategies in this group form the cornerstone for the other memory strategies (1990).

Applying images and sounds: The second subcategory of memory strategies is applying images and sounds, which is classified into four groups: using imagery, semantic mapping, using keywords, and representing sounds in memory. All these techniques involve remembering information through visual images or sounds. Visual imagery requires the use of actual drawings or mental pictures representing a concept; semantic mapping involves making a diagram and showing the relationship of words with the key concept; using keywords helps learners remember a new word by identifying a familiar word in their own language (auditory link) and creating an image which shows the relationship between the target word and the familiar word (visual link); and, finally, representing sounds in memory enables the learner to form a sound-based association between the new material and already known material (Oxford, 1990).

Reviewing well: In this category there is just one strategy: structured reviewing. No learning occurs without revising information. In vocabulary learning, however, revision is of high importance. As Oxford and Crookall (1990) state, structured reviewing requires going back over new vocabulary at different intervals, at first close together and then increasingly far apart until the material becomes automatic, or overlearned.

Employing action: The final category in Oxford's classification (1990), employing action, has two subgroups: using physical response or sensation and using mechanical techniques. These strategies involve some kind of movement or action

which is meaningful. Total physical response is known to be a method which is based on these techniques. Employing action can be particularly effective for learners whose learning styles are kinesthetic or tactile. Through physical response a new expression can be acted out. Using flashcards is a common example of mechanical techniques (Oxford, 1990).

Cognitive strategies

The second component of direct strategies is cognitive strategies. Oxford (1990) states that cognitive strategies are the most popular strategies with language learners. Cognitive strategies are many, but their common point is that they help the learner with the manipulation and transformation of the target language. Cognitive strategies can be analyzed under four headings as practising, receiving and sending messages, analyzing and reasoning, and creating structure for input and output. The following diagram shows the classification of cognitive strategies:

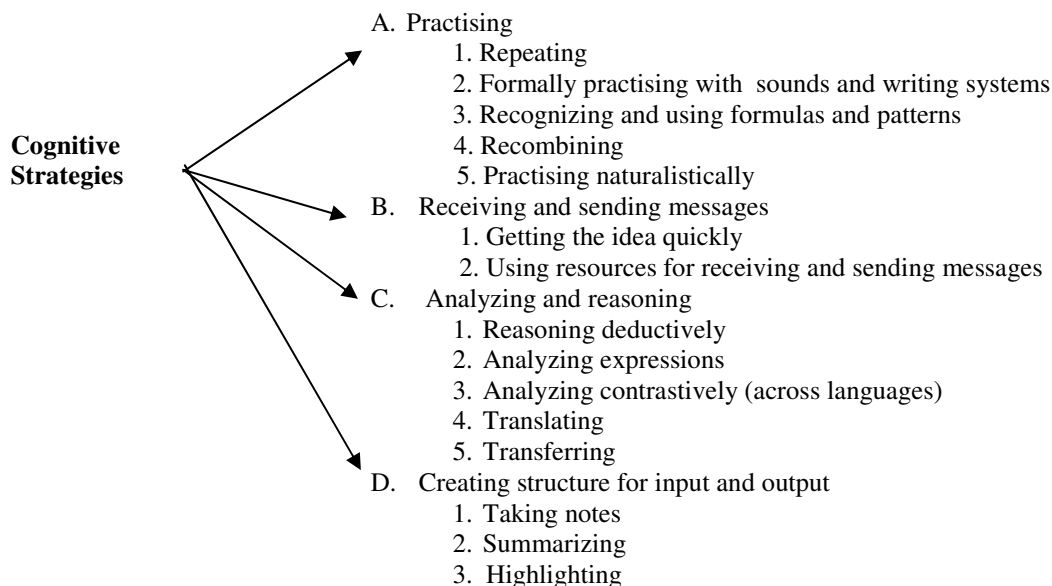


Figure 2-5. Classification of cognitive strategies (Oxford, 1990: 44)

Practising: Practising is the first subcategory of cognitive strategies. Though learners do not always recognize its value, practice is really essential for language learning. This strategy has five subgroups: repeating, formally practising with sounds and writing systems, recognizing and using formulas and patterns, recombining, and

practising naturalistically. Repeating refers to saying or doing something again and again (listening to something more than once, rehearsing, or imitating a native speaker). Formally practising with sounds or writing systems is significant as it involves practising sounds (pronunciation, intonation, or register), and the writing system of the target language, which is new to the learner. Recognizing and using formulas and patterns means using routine formulas (single, unanalyzed units), such as '*Hello, how are you?*', and unanalyzed patterns (which have at least one slot to be filled), such as '*I don't know how to_____.*' Recombining refers to combining known materials in a new way to create a longer sequence. For instance, a learner can make a compound sentence by using two independent clauses (e.g. The weather was rainy, so we decided to stay indoors). Practising naturalistically is the final subgroup of this category. As the name suggests, this involves working with the new language in natural, realistic settings. Learners participating in a conversation, reading a book, listening to a lecture, or writing a letter, for example, can be said to use this strategy (Oxford, 1990).

Receiving and sending messages: This is the second subgroup of cognitive strategies, and involves getting the idea quickly and using resources for receiving and sending messages. Getting the idea quickly is a technique used while listening and reading. When learners skim, for example, they get the main idea; when they scan, they get the specific details. They are really helpful to extract ideas. Using resources for receiving and sending messages involves various sources to understand or produce meaning. Actually, it is a strategy that every learner relies on: using printed sources such as dictionaries, grammar books, or word lists (Oxford, 1990).

Analyzing and reasoning: Analyzing and reasoning is related to logical analysis and reasoning as applied to different language skills. This strategy has five subcategories: reasoning deductively, analyzing expressions, analyzing contrastively, translating, and transferring. These are often used to understand the meaning of a new expression or produce a new expression. Reasoning deductively is a useful strategy because the learner uses general rules in specific situations. Analyzing expressions is especially helpful when studying vocabulary items as the learner figures out their meanings by breaking them down into parts. Knowing that *post-* as a prefix means

after, for example, a learner can easily understand that ‘*post-war years*’ refers to the years coming after the war. Analyzing contrastively concerns comparing elements of the target language with one’s own language. This helps learners determine the similarities and differences between the two languages- sounds, words, syntax and so on. Translating is perhaps the very first strategy learners tend to use when starting to learn a foreign language. Learners convert the target language into the native language, or vice versa (Oxford, 1990).

Creating structure for input and output: The final subcategory of cognitive strategies is creating structure for input and output. This is helpful for both comprehension and production in the new language, and involves three important subdivisions: taking notes, summarizing, and highlighting. Taking notes can involve raw notes, or more systematic texts. Summarizing refers to making a shorter version of any given text. The final technique, highlighting, takes the form of underlining, starring, or colour-coding, and is often used by learners (Oxford, 1990).

Compensation strategies

The final component of direct strategies is compensation strategies. Though the learner has lack of mastery in the target language, these strategies help for comprehension or production. That is, their main function is to make up for the limitations in knowledge. Compensation strategies come in two types: guessing intelligently, and overcoming limitations in speaking and writing (Oxford, 1990).

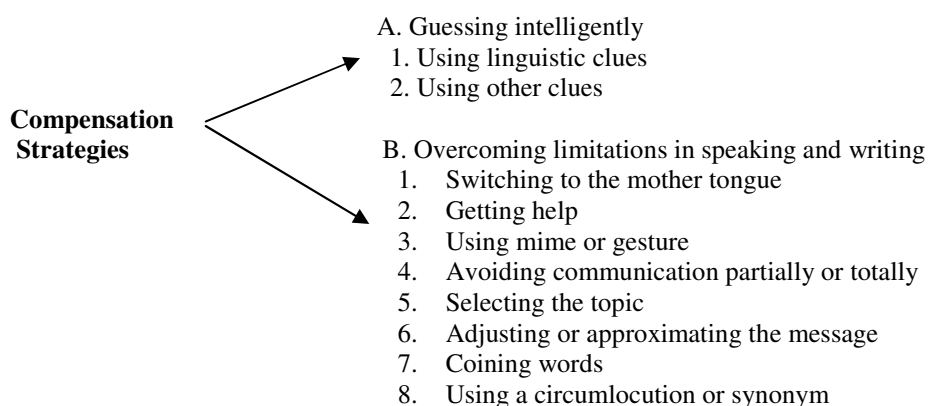


Figure 2-6. Classification of compensation strategies (Oxford, 1990: 48)

Guessing Intelligently: The first set of compensation strategies, guessing strategies, is also called ‘inferencing’. When the learners do not know all the words, they try to guess their meanings using linguistic and nonlinguistic clues, which are the two subcategories of this strategy. Language- based clues involve what the learners already know about the target language, or their own language. For instance, knowledge of prefixes, suffixes, or word order helps learners figure out the meaning of a new word. Non- linguistic clues, on the other hand, refer to the knowledge of context, situation, text structure, and so on. To illustrate, general background knowledge- knowledge about the target culture, observation of body language- may help the learner understand the language (Oxford, 1990).

Overcoming limitations in speaking and writing: This category involves eight techniques: switching to the mother tongue, getting help, using mime or gesture, avoiding communication partially or totally, selecting the topic, adjusting or approximating the message, coining words, and using a circumlocution or synonym. Switching to the mother tongue is a strategy that is especially used by learners at the beginning levels, and it involves turning to the mother tongue for an expression. Getting help is another technique through which the learner asks someone for help by hesitating or explicitly asking for the person to provide the needed expression. Using mime or gesture is also a compensation strategy which involves using physical motion instead of the missing expression. Avoiding communication partially or totally is a strategy that ranges from avoiding certain topics to abandoning communication in the middle of a conversation. Selecting the topic gives the learners the advantage of choosing the topic in which they are interested and for which they have a repertoire of needed vocabulary and structures. Adjusting or approximating the message involves making ideas simpler or less precise. Coining words refers to making up new words to communicate a certain idea. For instance, a learner uses the term ‘tooth doctor’ when he fails to remember the word ‘dentist’. The final strategy in this category is using a circumlocution or synonym, which means using a roundabout expression to describe a single concept or using a word that means the same thing (Oxford, 1990).

2.11.2. Indirect strategies

Metacognitive strategies

As mentioned earlier, indirect strategies support language learning, but do not directly involve the target language. Metacognitive strategies are the first subset of indirect strategies. Oxford (1990: 136) defines metacognitive as ‘beyond, beside, or with the cognitive’, and she adds that these strategies help learners deal with the ‘newness’ of the language; in other words, learners who encounter unfamiliar words, confusing structures, or nontraditional teaching approaches refer to such strategies as paying attention, linking with already known material. The following diagram shows the subcategories of metacognitive strategies:

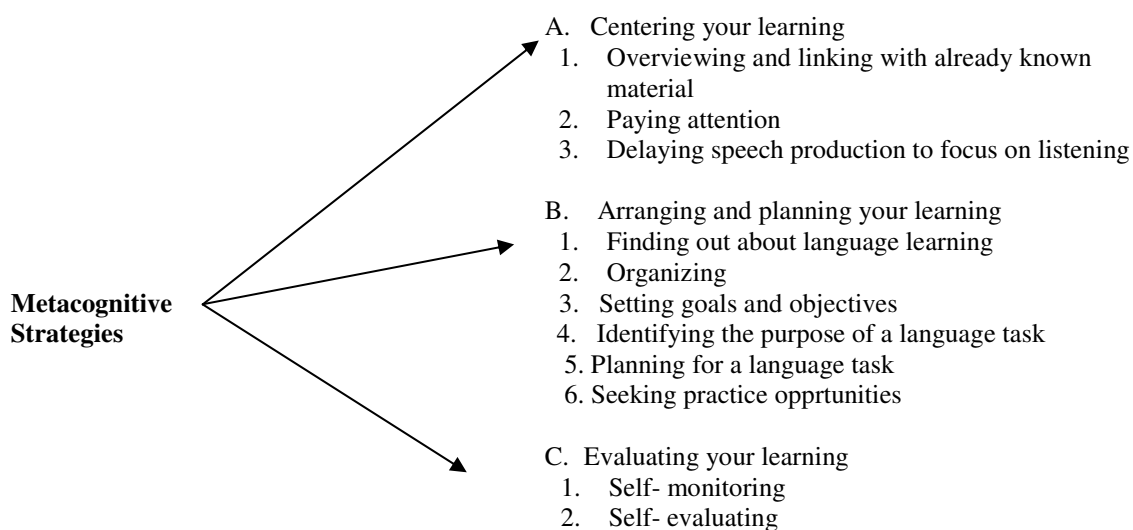


Figure 2-7. Classification of metacognitive strategies (Oxford, 1990: 137)

Centering your learning: This is the first subset of metacognitive strategies and has three categories: overviewing and linking with already known material, paying attention, and delaying speech production to focus on listening. These techniques help learners concentrate on certain tasks, skills, or materials. That is, they provide a focus for language learning. Overviewing and linking with already known material involves previewing the material for an upcoming task and associating it with what is already known. Paying attention- deciding in advance to focus on a task and ignoring

distractors- is known to be an effective strategy. Finally, delaying speech production to focus on listening is related to 'a silent period' proposed by some language theorists, and means that the learner delays speech production partially or totally until listening comprehension skills are better developed (Oxford, 1990).

Arranging and planning your learning: There are six strategies in this set, and they enable learners to discover the nature of language learning, organize to learn, set goals, understand task purposes, plan, and look for chances to practice. First, finding out about language learning involves making efforts to learn how the language works. Reading books, talking to people, and using this information to improve one's own learning are examples of this type. Second, organizing one's learning environment, or keeping a language learning notebook, for instance, may have positive effects on learning. Third, setting aims, long-term or short-term, is beneficial. Fourth, identifying the purpose of a task is essential in all four language skills. Fifth, planning for a language task is related to identifying the general nature of a task, its requirements, and the resources available. Finally, seeking practice opportunities refers to creating chances to practise any of the four language skills (Oxford, 1990).

Evaluating your learning: This is the final subcategory of metacognitive strategies and is subdivided into two types: self-monitoring and self-evaluating. Self-monitoring helps learners monitor their performance and involves identifying their errors in reception or production. Self-evaluating is related to evaluating one's progress in the target language (Oxford, 1990).

Affective strategies

Affective strategies are the second component of indirect strategies. The concept 'affective' refers to motivations, emotions, attitudes, and values. Language learning does not solely depend on cognitive or metacognitive factors. Affective factors are known to be really effective while learning. The importance of how one feels about the target language, self-esteem, and level of anxiety, for instance, are really worth mentioning in foreign language learning. Affective strategies are divided

into three main categories: lowering your anxiety, encouraging yourself, and taking your emotional temperature (Oxford, 1990).

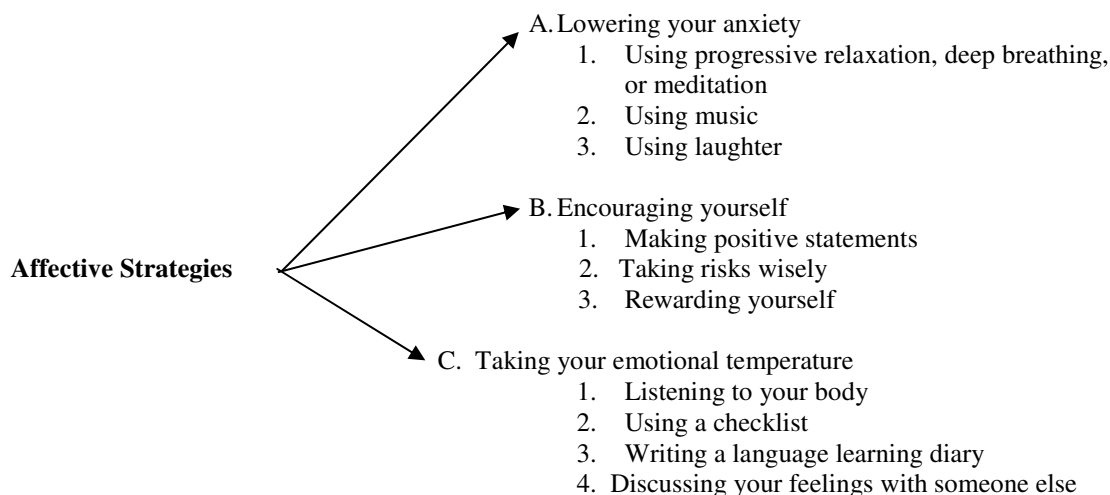


Figure 2-8. Classification of affective strategies (Oxford, 1990: 163)

Lowering your anxiety: The first subcategory of affective strategies is lowering your anxiety. Its three subdivisions are using progressive relaxation, deep breathing, or meditation; using music; and using laughter. The first strategy involves the technique of relaxing all the muscles in the body, breathing deeply from the diaphragm, and meditating by focusing on a mental image or sound. The second strategy involves listening to music as a way of relaxation. Finally, the use of laughter is an effective technique since it is known to have anxiety-reducing effects. Laughter brings pleasure to the learning environment (Oxford, 1990).

Encouraging yourself: Making positive statements, taking risks wisely, and rewarding yourself belong to this group of strategies. Learners can encourage themselves by making positive statements to themselves. For instance, saying ‘I’m reading faster than I was a month ago’ can make the learner feel more confident. Taking risks wisely involves forcing oneself to take risks in a learning situation despite the possibility of making mistakes. When done with good judgement, taking risks increases the chances of learning. Rewards are usually expected from external sources (e.g., a praise from the teacher). However, learners can also reward themselves for their performance (Oxford, 1990).

Taking your emotional temperature: The final subgroup of affective strategies consists of four strategies: listening to your body, using a checklist, writing a language learning diary, and discussing your feelings with someone else. Here, listening to one's body means paying attention to the signals sent by the body. These signals may demonstrate either negative feelings such as tension, worry, and stress or positive feelings like happiness, and interest. Using a checklist or a learning diary can also be effective strategies for learners to describe their feelings or perceptions about the learning process. Finally, discussing one's feelings with someone helps learners share their learning experiences inside or outside the classroom (Oxford, 1990).

Social strategies

The last subset of indirect strategies is social strategies. Since language is a type of social behaviour, social strategies play an important role in the process of learning. Social strategies are not only used for listening and speaking skills; they are essential for all four skills. Social strategies have three broad categories: asking questions, cooperating with others, and empathizing with others (Oxford, 1990).

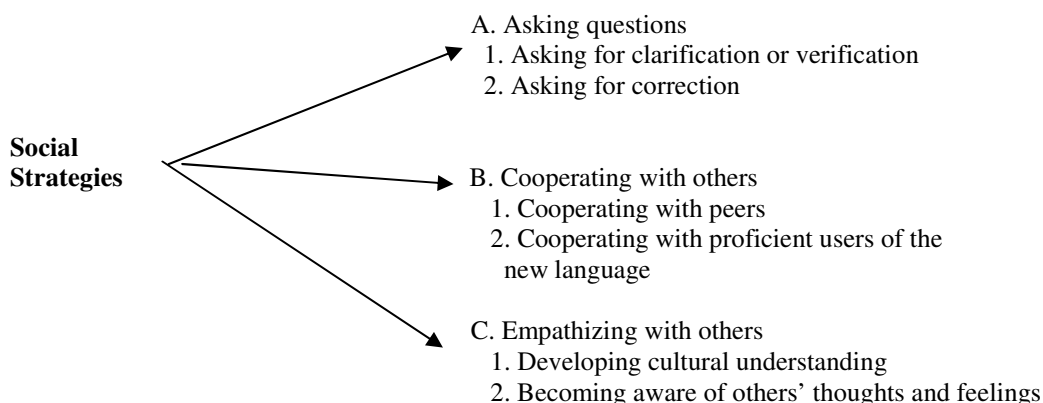


Figure 2-9. Classification of social strategies (Oxford, 1990: 145)

Asking questions: This is a common strategy used by learners, and it involves asking for clarification or verification, and asking for correction. Asking for clarification refers to asking the speaker to slow down, repeat, or paraphrase. In order to use this strategy effectively, students should be taught appropriate questions, such as

‘Would you repeat that, please?’ Asking for correction is mostly used when writing or speaking, and is related to the strategy of self- monitoring (Oxford, 1990).

Cooperating with others: Interacting with others is essential when learning a new language. In this group, there are two strategies: cooperating with peers, and cooperating with proficient users of the new language. Not only do these strategies increase language performance, but also they enhance self- worth and social acceptance. Cooperating with peers involves working with a regular partner or a temporary pair or small group. Working with proficient users of the target language usually takes place outside the classroom (Oxford, 1990).

Empathizing with others: This category has two strategies: developing cultural understanding, and becoming aware of others’ thoughts and feelings. Being aware of the characteristics of the target culture is of great help to language learners. In addition, observing others’ behaviours is also helpful while communicating. Listening to what is being said, what is not said, or paying attention to the tone of voice are all components of this group of strategies (Oxford, 1990).

After a look at language learning strategies, their characteristics, and classification, it is time to see how research into learning strategies has influenced vocabulary teaching, which is the focus of this study. The following part discusses vocabulary learning strategies.

2.12. Vocabulary Learning Strategies

During the last decades there has been an increase in the studies of vocabulary learning strategies. Takac (2008) notes that research into vocabulary learning strategies results from two directions of research. The first one is the research of general language learning strategies (discussed in the previous section), which demonstrated that most of the learning strategies employed by learners were in fact vocabulary learning strategies (e.g. memory strategies). The second is the research focusing on identifying the

effectiveness of individual strategy use in vocabulary learning. According to Schmitt (2000), interest in vocabulary learning strategies has increased since there has been a shift from a teaching- oriented perspective to one that involves interest in how learners' actions influence their learning. In other words, learners' individual tactics to study the new items began to gain importance.

As Nation (2001) mentions, there have been various attempts to create a taxonomy of vocabulary learning strategies. However, not all of the classifications present a comprehensive list of vocabulary learning strategies. Schmitt (1997) observes that among the established taxonomies, Oxford's classification (1990) seems to be the best to capture and organize the vocabulary learning strategies identified. Especially, memory, cognitive, metacognitive, and social strategies in her taxonomy are useful when identifying the vocabulary learning strategies. Having said this, Schmitt (1997) argues that Oxford's system (1990) was not satisfactory in grouping vocabulary-specific strategies due to several reasons. First, the taxonomy lacks a category which describes the strategies a learner uses when encountering a word for the first time. For this reason, a new category of strategies is needed: *determination strategies*. Second, some strategies in the taxonomy could be placed into two or more groups. Third, it is unclear whether some strategies should be categorized as cognitive or memory strategies.

In order to make up for these weaknesses, another categorization was needed. Schmitt (1997) developed a system in which strategies are divided into two major categories: 1) strategies which are useful for the initial discovery of a word's meaning; 2) strategies useful for remembering a word once it has been introduced. The taxonomy developed by Schmitt is the result of a detailed study. Most of the strategies in his taxonomy, which consists of 58 strategies, were gathered for a survey study of Japanese learners. In order to compile the strategies, vocabulary reference books and textbooks were referred to. In addition, intermediate level students were asked to write a report about how they studied vocabulary items. After that, teachers were asked to review the list, and they were asked to add any strategies they wished. Initially, there were 40 strategies; however, as a result of survey responses, subsequent reading,

introspection, and conversations with other teachers, the number of strategies increased to 58 (Schmitt, 1997).

Table 2-2. A Taxonomy of Vocabulary Learning Strategies (Schmitt, 1997: 207- 208)

Strategies for the discovery of a new word's meaning:

DET	Analyze part of speech
DET	Analyze affixes and roots
DET	Check for L1 cognate
DET	Analyze any available pictures or gestures
DET	Guess from textual context
DET	Bilingual dictionary
DET	Monolingual dictionary
DET	Word lists
DET	Flash cards
SOC	Ask teacher for an L1 translation
SOC	Ask teacher for paraphrase or synonym of new word
SOC	Ask teacher for a sentence including the new word
SOC	Ask classmates for meaning
SOC	Discover new meaning through group work activity

Strategies for consolidating a word once it has been encountered:

SOC	Study and practise meaning in a group
SOC	Teacher checks students' flash cards or word lists for accuracy
SOC	Interact with native speakers

MEM	Study word with a pictorial representation of its meaning
MEM	Image word's meaning
MEM	Connect word to a personal experience
MEM	Associate the word with its coordinates
MEM	Connect the word to its synonyms and antonyms
MEM	Use semantic maps
MEM	Use scales for gradable adjectives
MEM	Peg method
MEM	Loci method
MEM	Group words together to study them
MEM	Group words together spatially on a page
MEM	Use new word in sentences
MEM	Group words together within a storyline
MEM	Study the spelling of a word
MEM	Study the sound of a word
MEM	Say the new word aloud when studying
MEM	Image word form
MEM	Underline initial letter of the word
MEM	Configuration
MEM	Use keyword method
MEM	Affixes and roots (remembering)
MEM	Part of speech (remembering)
MEM	Paraphrase the word's meaning
MEM	Use cognates in study
MEM	Learn the words of an idiom together
MEM	Use physical action when learning a word
MEM	Use semantic feature grids

COG	Verbal repetition
COG	Written repetition
COG	Word lists
COG	Flash cards
COG	Take notes in class

COG	Use the vocabulary section in your textbook
COG	Listen to tape of word lists
COG	Put English labels on physical objects
COG	Keep a vocabulary notebook
MET	Use English-language media (songs, movies, newscasts, etc.)
MET	Testing oneself with word tests
MET	Use spaced word tests
MET	Skip or pass the new word
MET	Continue to study word over time

2.12.1. Discovery strategies

In Schmitt's classification (1997), discovery strategies involve determination and social strategies. Determination strategies are techniques learners use to discover a word's meaning without depending on another person's knowledge. For instance, one's structural knowledge of a language, guessing from context, guessing from an L1 cognate, or using reference materials like dictionaries are the strategies learners rely on when meeting a word for the first time.

Using social strategies is another way to discover a new word's meaning. Learners can ask teachers or their classmates for information about an unfamiliar word, and learn its meaning through a translation or a synonym. Also, group work can be an effective social strategy (Schmitt, 1997).

2.12.2. Consolidation strategies

Consolidation strategies serve to consolidate a word in memory for future use. Once a word has been encountered, some effort is needed to remember it. Therefore, strategies in this group, namely social, memory (since this study focuses on the effects of memory strategies on vocabulary learning, these strategies will be discussed in detail later in this chapter), cognitive, and metacognitive strategies are really beneficial. Social strategies are included in both discovery strategies (mentioned above) and consolidation strategies. Asking teachers to check their work for accuracy, or studying in a group are common social strategies learners use to consolidate words' meanings (Schmitt, 2000).

Another set of consolidation strategies is cognitive strategies. Cognitive

strategies, as mentioned earlier, enable the learner to manipulate and transform the target language (Oxford, 1990). These include written or verbal repetition, using word lists or flash cards, taking notes, and keeping a vocabulary notebook.

Metacognitive strategies are also used as consolidation strategies. Schmitt (2000: 136) defines them as involving ‘a conscious overview of the learning process and making decisions about planning, monitoring, or evaluating the best ways to study.’ Exposure to books, magazines, newspapers, or movies, and interacting with native speakers can be listed as effective metacognitive strategies (Schmitt, 1997).

2.12.3. Memory strategies

Memory strategies, which are also known as ‘mnemonics’, constitute an important set of vocabulary learning strategies. Bellezza (1981: 247) defines them as ‘learning strategies which can often enhance the learning and later recall of information.’ Willis (2008) defines mnemonics as using the pattern- seeking brain action that looks for associations between the information received and the information already stored. Thompson (1987) writes that language learning is a process which requires being able to memorize and retrieve many kinds of language routines, but she finds it surprising that foreign language learners, who should be users of mnemonic techniques, are generally unaware of them. Actually, this may result from teachers’ prejudice against techniques including any sort of memorization. As Nattinger (1988) mentions there is a kind of resistance towards mnemonic techniques in the classroom in some countries. However, once students start to use these techniques, they find them very effective.

As mentioned before, there are a number of memory strategies in Schmitt’s taxonomy (1997) and Oxford’s taxonomy (1990), including the peg method, the loci method, acronyms, the physical response method, associating/ elaborating, and so on. In the following section, a description of these strategies are presented. However, in this study five of these memory strategies- the keyword method, using imagery, grouping, semantic mapping, and placing new words into a context- form the focus of attention.

The peg method: This method helps learners remember ordered or unordered items by memorizing a list of keywords rhyming with a sequence of digits. For instance, ‘one is a bun, two is a shoe, three is a tree, four is a door, five is a hive, six are sticks, seven is heaven, eight is a gate, nine is a line, ten is a hen’ is a well-known set of pegs. When there is a list of words to be memorized, then, the first word is learned by forming a picture of the word and a bun (e.g., if the word is ‘cat’, the image may consist of a cat eating a bun); and the list goes on like this (Thompson, 1987). This could be fun for learners, especially young ones.

The loci method: In this method, a place is used and the objects in it are associated with a list of items. The person chooses a starting place, and places the item with the object as he or she goes around the room. Wolfe (2001) refers to it as ‘a mental walk’. Delaney and Austin (1998) give the example of a politician using this method to remember the order of some laws to be discussed at the city council meeting: the toy cars in the dining room, for instance, may remind him of the new road repair bill. Actually, the method of loci is a technique which requires extensive rehearsal and a great deal of time.

Acronyms Acronyms, which are one of the well-known memory strategies, consist of the initials of the words to be remembered which are put in a format that is easy to remember. A learner who wants to remember the names of the Great Lakes, for example, may want to use this technique, and form the acronym ‘HOMES’: Huron, Ontario, Michigan, Erie, and Superior (Sprenger, 1999).

The physical response method: Thompson (1987) advocates that physically enacting the information in a sentence leads to better recall than mere repetition. Agan (2006) emphasizes the positive effects of movement by stating that there is about 15 per cent more blood and oxygen in the brain after standing and sitting twice compared to raising your hand twice. This technique is similar to the method of Total Physical Response, in which students listen to a command and then physically act it out. Oxford (1990: 66) gives the example of a student who is asked to ‘take the pencil, go to the pencil sharpener, sharpen the pencil, write his name with it, and then give it to another

friend'. As the learner carries out these instructions, this method contributes to engraving the new information in memory.

Associating / Elaborating: Another memory strategy is associating / elaborating. Oxford and Crookall (1990) define this strategy as involving making associations between the new word and the words that are already in the learner's mind, which creates a context for the learner. They also mention that as long as these associations are significant and meaningful to the learner, they can be simple or complex, ordinary or strange. In other words, any association must have meaning to the learner, even though it might not make sense to someone else. As Allen (1992: 5) indicates 'humans learn by association,' and vocabulary learning is no exception. For long-term vocabulary retention, it is necessary for the learner to elaborate on the word by imagining it or relating it to other words or concepts that are already known. Oxford (1990) gives an example of a student learning German. While reading, he meets the word '*wissenschaft*' (knowledge). He then associates this word with two English words *wise* and *shaft* and remembers the German word by thinking of knowledge as a *shaft of wisdom*.

The keyword method: Schmitt (2000: 121) defines the keyword method as a mnemonic device which 'works by combining elements of phonological form and meaning in a mental image.' This technique can be a powerful mnemonic device which enables the learner to recall items as long as powerful associations are made between the new word and the information already stored in the brain. The keywords can be created by the learners or they can be provided by the teacher.

Hulstijn (1997) lists the three stages of the keyword method: 1) an L1 or L2 word is chosen based on auditory or orthographic similarity with the target word; 2) a strong association between the target word and the keyword is constructed so that the learner remembers the keyword when seeing the target word; 3) a visual image is constructed combining the referents of the keyword and the new word. Actually, as Nattinger (1988) states bizarre or ridiculous images make the most effective associations. In order to give an example of keywords used by learners, Nation (1990) refers to English-speaking learners who want to learn the Thai words *khaaw saan*

(uncooked rice): they would use an English word (keyword) that sounds like the given Thai words (e.g., council), then they can create a mental image of a council and uncooked rice interacting with each other (e.g., people sitting around a table in the council on which there is a lot of rice). Levin and Pressley (1981) suggest that learners who want to remember the word '*carlin*', which means 'an old woman', could use 'car' as the keyword and imagine an old woman driving a car.

Pressley et al. (1982) summarize the advantages of using the keyword method: it can be used with children (as young as 3 years) as well as adults; learners using this technique outperform in recalling vocabulary compared with subjects using other techniques (including the use of rote repetition, sentences including the target word, detailed definitions of the word, synonyms, and pictures); it can be used not only with concrete words but also with abstract ones; and the keywords can be supplied by the teacher, or they can be created by the learners.

Using imagery: This technique involves making associations between a picture and a word. As Smith et al. (1987) state pictures add interest and excitement to learning, so when learning vocabulary, imagery instruction may be an effective tool. Oxford and Crookall (1990: 16 -17) observe that 'the theory on which this technique is founded is that most learners are capable of associating new information to concepts in memory by means of meaningful visual images, and that visual images make learning more efficient.' Learners can make use of an actual drawing or a mental image of the word to be remembered. To illustrate, Oxford (1990) gives an example of a Spanish bank manager learning English. He creates a mental image to remember the phrase '*tax shelter*': a small house sheltering or protecting a pile of money inside, and when he sees this word, he remembers this image. Imagery can be a powerful strategy for learners since it can be an effective way to remember not only concrete words but also abstract ones. For instance, to remember an abstract word '*evil*', a learner can associate it with a bloody knife (Oxford & Crookall, 1990).

Grouping: Grouping is another component of memory strategies. As Oxford (1990) writes, in grouping what is heard or read is classified or reclassified into

meaningful groups, and the number of unrelated elements is reduced. It is known that personal organizing is a factor which ensures permanent learning and organized material is easier to store in long-term memory; thus, grouping is an effective technique for language learners. Groups can depend on type of word (e.g., all nouns or verbs), topic (e.g., words about weather), practical function (e.g., terms for things that make a car work), linguistic function (e.g., apology, request, demand), similarity (e.g., warm, hot, tropical), dissimilarity or opposition (e.g., friendly/ unfriendly), the way one feels about something (e.g., like, dislike), and so on. Labeling the groups, making use of acronyms to remember the groups, or using colours that represent different groups may be useful tricks for the language learner (Oxford, 1990).

Semantic Mapping: Through this strategy, a learner can make an arrangement of words into a picture. There is a key concept at the top or at the center, and related words are linked with the key concept via lines or arrows (Oxford: 1990). Since creating a semantic map involves the participation of learners, it is a powerful technique in the classroom. It occurs as a collaborative effort of the teacher and the class. Toms-Bronowski (1982) presents an instructional sequence for this strategy: 1) select a word; 2) write the word on the board; 3) ask the class to think of as many words as they can which are in some respect related to the given word; 4) have students share the words they have written, and as they do, write them on the board; 5) have the students name the categories. Sökmen (1997) also states that semantic mapping requires a great deal of group interaction, adding that over time new words may be added to the map by the learner; thus, it can be seen that it contributes to the expansion of learners' vocabulary.

Placing new words into a context: Placing new words into a context involves placing new vocabulary items into a meaningful context as a spoken or written sentence. Oxford (1990) points out that new words in written selections are often presented in a meaningful context; however, students sometimes meet written lists of phrases and words which have no supporting or explanatory context. In such cases, this strategy helps learners create their own context. To illustrate, a learner of English who sees a number of words related to sewing, such as *zipper*, *button*, *thread*, *needle*, and *stitch*. She, then, writes a story which involves all these words in a meaningful context.

In this way, she has an access to all these words through one story.

After having a look at the strategies and their features, it is time to see what research has been conducted on vocabulary learning strategies.

2.13. Researches on Vocabulary Learning Strategies

The interest in investigating the effectiveness of learning strategies on students' success has led researchers to conduct studies on vocabulary learning strategies, too.

Koser and Natkin (1972) compared the effectiveness of imagery formation (one of the memory strategies) to the effectiveness of rote learning. During the study, one of the groups was instructed to form images for the objects in the text while the other group repeated each sentence five times. Results of the study showed that the imagery group's performance was better than that of the other group.

Raugh and Atkinson (1974) carried out four experiments evaluating the effectiveness of the keyword method, another memory strategy. The experiments compared the keyword method for learning Spanish vocabulary with various control procedures, and the keyword method proved effective in all cases.

Levin et al. (1982) conducted two studies to investigate the effects of mnemonics. In the first study, subjects in the experiment group used keywords. In the second one, a no- strategy control condition and two other contextual variations: (a) an experiential context condition, and (b) a nonkeyword pictorial context condition were used. In both experiments, the keyword technique proved effective for enhancing learners' acquisition of new words.

Pittelman and Johnson (1985) carried out a series of studies evaluating the effects of semantic mapping and semantic feature analysis on vocabulary acquisition. Semantic mapping and feature analysis were helpful not only to introduce key words

from a text but also to activate learners' prior knowledge of a topic.

In another study, Brown and Perry (1991) compared three strategies for vocabulary acquisition. Six classes at two levels of proficiency were divided into three treatment groups: keyword, semantic, and keyword- semantic. Cued- recall results immediately after the treatment showed that the keyword method facilitated vocabulary acquisition for lower- proficiency students. The delayed results for both the recognition and cued- recall tests suggested that the combined keyword- semantic strategy increased retention above the other strategies.

Ekmekçi (1999) conducted a study to establish the vocabulary learning strategies used by Turkish EFL learners and investigated the effects of these strategies on their English learning outcomes. The results showed that although the learners reported highly on the contextual strategies, the relation of their outcomes were significant with the decontextualized strategies. Thus, it was seen that their belief and attitude were not consistent with each other.

Tezgiden (2006) carried out a study to investigate the effects of vocabulary learning strategy instruction on learners' reported strategy use and their perceptions of usefulness. During the three- week strategy instruction, dictionary use, keeping a vocabulary notebook, and guessing the meaning of unknown words from context were the strategies employed by the teacher. Data analysis showed that the strategy instruction had a positive influence on strategy use.

Evcim (2008) conducted a study to determine the language learning strategies used by preparatory school students and their effects on vocabulary retention. According to the results of the study, there was a significant difference between the post vocabulary test results of the experiment and control group.

Gender differences were also taken into consideration by some researchers. Üster (2008), for instance, conducted a study to investigate the possible relationship between differences of the male and female brain and vocabulary learning strategies of

male and female students. According to the results of the study, females employed more strategies during the vocabulary learning process. Females reported to use determination, social, and cognitive strategies more than males. Male students, on the other hand, reported to use memory strategies more than females.

Nemati (2009) conducted a study using three strategies- grouping, making acronyms, and using imagery. The participants were 310 Indian pre- university females. Long- term retention of words was tested two weeks after the first post- test, which tested short- term retention. The results demonstrated that the students in the experiment group outperformed not only in short- term but also in long- term scores.

This chapter has given information about aspects of vocabulary learning, learning strategies, and vocabulary learning strategies. This study aims to investigate the effects of memory strategies on learners' vocabulary retention at the receptive and productive level. The following chapter is going to focus on methodology used in this study.

CHAPTER III

3. Methodology

In this chapter, information about the design of the study, the setting and the subjects, the procedure, the data collection tools, and methods of analysis of the obtained data will be presented.

3.1. Design of the Study

This study aims to investigate the effects of instruction in memory strategies on learners' achievement in vocabulary learning at the preparatory school of Abant İzzet Baysal University. Therefore, an experimental study was carried out. In the study, there was a control group, and an experiment group. In the experiment group, vocabulary items were taught using the five memory strategies- the keyword method, using imagery, grouping, semantic mapping, and placing new words into a context. In the control group, there was no strategy- based teaching. In order to see the effects of strategies on students' retention of vocabulary, pre- and post-tests were given to the students every week.

3.2. Participants

The study was conducted in a natural educational context. Two groups of students at the preparatory school participated in this study. The experiment group consisted of 27 students, and the control group consisted of 24 students. In the former, there were 14 girls, and 13 boys; the latter group consisted of 17 girls, and 7 boys. The

students were aged between 17- 20, and they were at the beginning level. At the preparatory school, the classes are arranged according to the results of the proficiency exam administered at the beginning of the school year. The students did not get the required grade in the given exam, and according to the regulations of the university they had to attend the preparatory program in order to reach the proficiency level to follow their studies in their departments. The two groups in this study were at the same level, A2. They were in their sixth week of instruction in the preparatory program when this study started. The groups were arranged according to the Common European Framework, in which A1 is the first level.

3.3. The Setting

In the preparatory school, students have to complete the five levels successfully in order to start their department the next year. After A1, A2, B1, and B2 levels, students reach the AFLCS (Academic Foreign Language for College Studies) level. Each of the first four levels are completed in five weeks, and the last level is completed in seven weeks. Students at A2 level took part in this study during the five weeks. During the classes, one coursebook was followed, Touchstone A2, which was published by Cambridge University Press. Students had 30 hours of English classes each week, and the researcher taught the control group and experiment group for 15 hours each.

3.4. Research Questions

This study aims to answer the following research questions:

1. To what extent does instruction in the selected five memory strategies in vocabulary teaching affect students' achievement in vocabulary learning?
2. To what extent does the use of memory strategies in vocabulary teaching influence students' knowledge at the receptive and productive levels?
 - a) Is there a difference between the scores of the experiment group at the receptive level in the pre- and post -tests?

- b) Is there a difference between the scores of the experiment group at the productive level in the pre- and post-tests?
 - c) Is there a difference between the total scores of the experiment group in the pre- and post-tests?
 - d) Is there a difference between the scores of the control group at the receptive level in the pre- and post-tests?
 - e) Is there a difference between the scores of the control group at the productive level in the pre- and post-tests?
 - f) Is there a difference between the total scores of the control group in the pre- and post-tests?
 - g) Is there a difference between the post-test scores of the experiment and control group?
3. What are the students' attitudes toward the use of memory strategies?

3.5. Procedure

In this study, the researcher worked with an experiment group for five weeks using the selected five memory strategies for teaching vocabulary. The vocabulary items were taken from Touchstone A2 , the coursebook which the students were responsible for at this level. The vocabulary items were chosen on the basis of their frequency after scanning the three well- known word lists- General Service List, Academic Word List, and University Word List.

During the five weeks in this study, both the experiment and control group were given pre-tests involving the words of the week before studying them. When the training started, students in the experiment group were eager to learn about the memory strategies because they had realized the significance of vocabulary in all areas of language learning. When the researcher asked them whether they used any techniques to study the new words, a few students reported using vocabulary notebooks in which they listed the new words; however, most of them did not have a systematic way to study the lexical items. The researcher explained that there are many vocabulary learning

strategies that they can utilize, and that due to time limitations they were going to study five of these. The first strategy to be focused on was the keyword method. After the students were told that this technique would be not only effective but also fun for their studies, they were shown slides (see Appendix 1, p. 86) which gave information and examples about the keyword strategy. As soon as the students learned how that strategy works, they tried to find some keywords in Turkish that would help them remember some English words. Due to the limitations, however, the keywords in this study were supplied by the teacher. As described in the previous chapter, the keyword technique requires one to find an L1 word which sounds like the target word. Actually, it is also possible to use an L2 word that sounds like the new item; however, the students who participated in this study were not proficient enough. For this reason, keywords in this study were given in Turkish. After a keyword was identified by the researcher, an image combining the target word and the keyword was created. After these words were studied in the classroom, students were also given a list of these keywords so that they could study outside the classroom.

The second strategy was using imagery. Before focusing on this strategy, both groups were given pre-tests that involved the vocabulary of the week. In order to familiarize the students in the experiment group with this technique, the researcher used slides to show how this technique can help them (see Appendix 1, p. 88). Students were also told that the capacity for long- term memory of pictures is almost unlimited, and that they can draw pictures representing the words to enable them to recall them better later, or they can use pictures from different sources. In this study, the researcher used visuals taken from different sources. Each student was also given their prints.

The vocabulary of the week, the experiment group was shown slides which gave information about how this technique is used (see Appendix 1, p. 90). Students understood that with this technique, new items can be categorized not only according to their meanings but also according to their grammatical functions. During the week, new vocabulary items were grouped according to their common features, and every day new words were added to the groups. This technique was also effective since it required discussion between students.

The fourth strategy was semantic mapping. Similar to previous weeks, students were given pre-tests, and then they were shown slides about this strategy (see Appendix 1, p. 92). In order to establish this strategy, during the week semantic maps were completed by the learners and the teacher to establish the relationships between the new words and the items already known. Like the grouping strategy, this technique required learners to discuss in pairs, or in groups.

The last strategy that was focused on was placing new words into a context. This was the last strategy because it was the most demanding one. After the pre-tests, students in the experiment group were shown slides on how this technique can be used (see Appendix 1, p. 93). Students were required to use the new words in meaningful contexts. They wrote either sentences or little stories that helped them remember the target words. Then, they shared these with other pairs or groups.

Every week, vocabulary items of the previous week were revised in the classroom. Following the strategy instruction every week, students in both the control group and the experiment group were given post-tests on the vocabulary of the week, which were the same as pre-tests. At the end of the study, students were given a test which included all the lexical items studied during the five weeks.

3.6. Data Collection

This study sought to investigate the effects of five memory strategies on students' learning of vocabulary at receptive level and productive level. Therefore, in order to see the effects of these strategies, tests were designed as involving both recognition and recall of words. Nation (1990) starts to define recognition and recall tests by asking what the aim of a test is: are the learners asked to give the meaning of a word after seeing or hearing that word, or are they asked to say or write the word after seeing some representation of its meaning? The former refers to recognition tests, and the latter refers to recall tests. In recognition tests, examiners want to see if the students know the meaning of a word after they see or hear it. In other words, students hear or

see an English word and then (a) write or say a mother-tongue word, or English synonym or definition, (b) check or underline the word to show that they think they know it, or (c) choose one from a set of pictures, mother- tongue words, or English synonyms or definitions. In recall tests, however, examiners are interested in learners' producing the word. In these tests, students hear or see a mother- tongue word or a simple English synonym or definition, or they see a picture and then they write or say the English word.

In this study, tests were divided into two parts. In the first part, students were asked to write translations of the given English words, match the given words with pictures, or choose from the given words to complete the sentences because the first part aimed to test their recognition of words. In the second part, they were required to produce the words, so they were asked to write English translations of words, or find the correct word to complete the given sentences. Unlike the first part, in the second part no list of words was given among which they could choose the right word to complete the given sentences.

Another objective of the study was to discover learners' attitudes to the strategies; therefore, students were also asked to give self-reports on their opinions about memory strategies at the end of the study.

3.7. Methods of Data Analysis

Data from the participants' responses to tests were analyzed through statistical analysis. Results of pre- and post- tests were entered into an SPSS 15 file. Then, paired samples t-test were run to find out the differences between the performances of the experiment group and the control group. The results of the analyses are going to be presented in the next chapter.

In addition to test the effects of memory strategies on vocabulary retention, this study sought to investigate students' attitudes to memory strategies. To this end,

students in the experiment group were asked to write self-reports about how they felt during the strategy instruction. They were read by the researcher, and those that were written in Turkish were translated into English. The results will be discussed in the following chapter.

CHAPTER IV

4. Findings and Discussion

4. 1. Introduction

This study investigated the effects of five memory strategies- the keyword strategy, the use of imagery, grouping, semantic mapping, and placing new words into a context- on students' vocabulary retention during five weeks. During the training, the experiment and control group were given one pre-test and post-test before and after each strategy training. At the end of the training, they were given a vocabulary test involving all the items they were taught during the study. Test results were entered into an SPSS -15 program, and to analyze the data, paired- samples t- test were run.

This study also sought to find out learners' attitudes to the strategies used. In this chapter, analysis of the data collected during the five- week strategy training will be presented.

4. 2. Analysis of Data

The first research question of this study aimed to find out to what extent the selected five memory strategies affected students' achievement in vocabulary learning. To this end, a vocabulary test was administered at the end of the five- week strategy training. The test was divided into two sections: part A aimed to assess the receptive learning, and part B aimed to assess the productive learning.

Table 4-1 shows the difference between the performance of the students in the

experiment and control group in the vocabulary test. According to the table, 27 students in the experiment group, and 24 students in the control group took the test. The results related to part A of the test provided the t-value $t_{23} = 9.44$, $p < .05$. There was a significant difference between the mean values of the experiment group (40.21) and the control group (20.26). When the results related to part B were analyzed, it was seen that the t-value was $t_{23} = 7.62$, $p < .05$. Like part A, there was a significant difference between the mean values of the experiment group (30.52) and the control group (15.56). When the total results of the test were analyzed, the t-value was $t_{23} = 9.19$, $p < .05$. The mean values of the experiment group was 70.73, and those for the control group were 35.83. Since P is smaller than .05 in both parts, it can be concluded that there was a significant difference between the scores of the experiment group and the control group. Thus, it is seen that memory strategies had a positive influence on students' retention of vocabulary after five weeks. In the following tables, n shows the number of participants; $\bar{X}$ shows the mean; SD shows standard deviation; T shows t value; df shows degrees of freedom; and P shows significance of difference.

Table 4-1. The t-test results of the experiment and control group related to the differences between parts A and B of the general vocabulary test

	Group	N	$\bar{X}$	SD	T	df	P
Part A of the test	Experiment	27	40.21	7.21	9.44	23	.000*
	Control	24	20.26	9.26			
Part B of the test	Experiment	27	30.52	9.13	7.62	23	.000*
	Control	24	15.56	5.67			
Total	Experiment	27	70.73	15.64	9.19	23	.000*
	Control	24	35.83	13.94			

* $p < .05$

The second research question was 'To what extent does the use of memory strategies in vocabulary teaching influence students' knowledge at the receptive and productive levels?' To answer this question, students were given tests at the beginning and at the end of each strategy instruction. In the following part, the differences between the scores of the experiment and control group based on the two sections of the tests will be analyzed.

Table 4-2 shows the t-test results based on the differences between part A of the pre- and post- tests given to the experiment group during the five weeks. In the first part of the first test of strategy training (keyword strategy), the t-value was $t_{26} = -16.68$, $p < .05$, and there was a significant difference between the mean values of the pre-test (10.24) and the post-test (37.89).

In the first part of the second test of training (use of imagery), the t-value was $t_{26} = -18.40$, $p < .05$. There was a significant difference between the mean values of the pre -test (17.39) and the post-test (45.14).

In the third week, grouping strategy was focused on. According to the results of the first part, there was a statistically significant difference between the mean values of the pre-test (4.35) and post-test scores (30.00). The t-value was $t_{26} = -12.24$, $p < .05$.

In the fourth week, semantic mapping was studied. According to the results of the first section, there was a significant difference between the mean values of the pre-test (6.41) and the post-test (28.74). The t-value here was $t_{26} = -13.25$, $p < .05$.

The last strategy was placing new words into a context. According to the analysis, the t-value was $t_{26} = -11.48$, $p < .05$. The results of the scores in the first section demonstrated a significant difference between the mean values of the pre- test (9.62) and the post-test (32.56). When these results are taken into consideration, it is observed that memory strategies contribute to students' learning of vocabulary at the receptive level. The highest increase was seen in the second week; scores increased from a mean of 17.39 to 45.14. Use of visuals, then, was the most effective technique for students' remembering the vocabulary of the week.

Table 4-2. The t-test results based on the differences between part A of the pre- and post- tests of the experiment group during the five weeks.

		X	N	SD	t	df	P
Week 1	Pre-test A	10.24	27	7.33	-16.68	26	.000*
	Post-test A	37.89	27	11.63			
Week 2	Pre-test A	17.39	27	7.29	-18.40	26	.000*
	Post-test A	45.14	27	5.94			
Week 3	Pre- test A	4.35	27	4.73	-12.24	26	.000*
	Post-test A	30.00	27	11.54			
Week 4	Pre-test A	6.41	27	6.33	-13.25	26	.000*
	Post-test A	28.74	27	10.89			
Week 5	Pre-test A	9.62	27	8.68	-11.48	26	.000*
	Post-test A	32.56	27	10.94			

*p<.05

In table 4-3, the t- test results based on the differences between part B of the pre- and post-tests given to the experiment group during the five weeks can be seen. As mentioned above, questions in part B aimed to assess the learning of vocabulary at the productive level. In the first week, the t- value was $t_{26} = -12.57$, $p < .05$. There was a significant difference between the mean values of the pre-test (9.13) and the post-test (35.42).

In the second week, there was a statistically significant difference between the mean values of the pre- test (1.85) and the post-test (31.07), and the t-value was $t_{26} = -14.53$, $p < .05$.

In the third week, it was seen that t- value was $t_{26} = -7.41$, $p < .05$. According to the analysis, there was a significant difference between the scores of the pre-test (.46) and those of the post-test (12.87).

In the fourth week, the mean values of the pre-test (.00) and the post-test (20.47) showed a statistically significant difference, and the t-value was $t_{26} = -12.90$, $p < .05$.

In the last week, there was a significant difference between the scores of the pre-test (2.71) and post-test (18.13), and the t-value was $t_{26} = -16.07$, $p < .05$. To conclude, it was seen that the means of scores in part B of the post-tests were a bit lower than those in part A (mentioned above). This may be due to the fact that productive learning is

always harder than receptive learning. However, when the results of the pre- and post-tests are compared, it was seen that memory strategies had a significant effect on students' learning. For instance, in the second week of strategy training (use of visuals), scores increased from a mean of 1.85 to 31.07.

Table 4-3. The t- test results based on the differences between part B of the pre- and post-tests of the experiment group during the five weeks

		X	N	SD	t	df	P
Week 1	Pre-test B	9.13	27	6.44	-12.57	26	.000*
	Post-test B	35.42	27	11.99			
Week 2	Pre-test B	1.85	27	3.11	-14.53	26	.000*
	Post-test B	31.07	27	11.64			
Week 3	Pre-test B	.46	27	.99	-7.41	26	.000*
	Post-test B	12.87	27	8.95			
Week 4	Pre-test B	.00	27	.00	-12.90	26	.000*
	Post-test B	20.47	27	8.25			
Week 5	Pre-test B	2.71	27	3.46	-16.07	26	.000*
	Post-test B	18.13	27	4.74			

*p<.05

Table 4-4 shows the t-test results related to the total scores of the students in the experiment group in the pre- and post-tests during the five weeks. In the first week, the t-value was $t_{26} = -16.05$, $p < .05$, and there was a statistically significant difference between the pre-test (19.37) and the post-test (73.32) results.

In the second week, the t-value was $t_{26} = -20.70$, $p < .05$. A significant difference was found between the scores of the pre-test (19.24) and the post-test (76.47).

In the third week, there was a significant between the pre-test results (4.63) and the post-test results (42.87). The t-value was $t_{26} = -12.91$, $p < .05$.

In the fourth week, a significant difference was found between the mean values of the pre-test (6.41) and the post-test (49.21), and the t-value was $t_{26} = -15.46$, $p < .05$.

In the last week of the training, analysis showed that the t-value was $t_{26} = -15.72$, $p < .05$. There was again a significant difference between the pre-test (12.33) and post-test (50.69) scores. When these results are compared, it is seen that the highest increase in scores was recorded in the second week of training (use of visuals) because there was

an increase of 57.23 points in the mean scores.

Table 4-4. The t-test results related to the total scores of the students in the experiment group in the pre- and post-tests during the five weeks

	Total	X	N	SD	t	df	P
Week 1	Pre-test	19.37	27	12.23	-16.05	26	.000*
	Post-test	73.32	27	22.55			
Week 2	Pre-test	19.24	27	9.25	-20.70	26	.000*
	Post-test	76.47	27	16.14			
Week 3	Pre-test	4.63	27	5.27	-12.91	26	.000*
	Post-test	42.87	27	17.05			
Week 4	Pre-test	6.41	27	6.33	-15.46	26	.000*
	Post-test	49.21	27	17.11			
Week 5	Pre-test	12.33	27	10.64	-15.72	26	.000*
	Post-test	50.69	27	13.93			

*p<.05

Table 4-5 illustrates the t-test results based on the differences between part A of the pre- and post- tests given to the control group during the five weeks. In the first part of the first test, the t-value was $t_{23} = -7.26$, $p < .05$, and there was a significant difference between the mean values of the pre-test (9.30) and the post-test (17.91).

In the second week, the t-value value was $t_{23} = -6.07$, $p < .05$. Results showed that there was a statistically significant difference between the pre-test (14.01) and post-test (23.87) results.

In the third week, there was a significant difference between the pre-test (5.63) and post-test (13.33) results, and the t-value was $t_{23} = -6.36$, $p < .05$.

In the fourth week, the t- value was $t_{23} = -5.20$, $p < .05$. Results showed that there was a significant difference between the mean values of the pre-test (7.22) and the post-test (12.21) scores.

In the fifth week, a significant difference was found between the pre-test (6.24) and the post-test (9.02) results.

Table 4-5. The t-test results based on the differences between part A of the pre- and post- tests given to the control group during the five weeks

		X	N	SD	t	df	P
Week 1	Pre-test A	9.30	24	6.74	-7.26	23	.000*
	Post-test A	17.91	24	7.41			
Week 2	Pre-test A	14.01	24	7.01	-6.07	23	.000*
	Post-test A	23.87	24	7.65			
Week 3	Pre-test A	5.63	24	5.53	-6.36	23	.000*
	Post-test A	13.33	24	6.54			
Week 4	Pre-test A	7.22	24	5.35	-5.20	23	.000*
	Post-test A	12.21	24	6.71			
Week 5	Pre-test A	6.24	24	4.94	-2.91	23	.008*
	Post-test A	9.02	24	3.61			

*p<.05

In table 4-6, the t- test results based on the differences between part B of the pre- and post-tests given to the control group during the five weeks can be seen. In the first week, the t-value was $t_{23}=-6.94$, $p<.05$. There was a significant difference between the mean values of the pre-test (7.77) and the post-test (15.13) scores.

In the second week, a significant difference was seen between the pre-test (.97) and the post-test (3.89) results. The t-value was $t_{23}=-3.40$, $p<.05$.

In the third week, the t- value was $t_{23}=-1.16$, $p<.05$. There was no significant difference between the mean values of the pre-test (.73) and the post-test (1.15).

In the fourth week, a statistically significant difference was found between the mean values of the pre-test (.83) and the post-test (1.94), and the t-value was $t_{23}=-2.15$, $p<.05$.

In the final week, the t-value was $t_{23}=-3.40$, $p<.05$. A significant difference was seen between the mean values of the pre-test (1.11) and post-test (4.86) results.

Table 4-6. The t- test results based on the differences between part B of the pre- and post-tests given to the control group during the five weeks

		X	N	SD	t	df	P
Week 1	Pre-test B	7.77	24	4.57	-6.94	23	.000*
	Post-test B	15.13	24	6.59			
Week 2	Pre-test B	.97	24	1.55	-3.40	23	.002*
	Post-test B	3.89	24	3.76			
Week 3	Pre-test B	.73	24	1.73	-1.16	23	.257
	Post-test B	1.15	24	2.21			
Week 4	Pre-test B	.83	24	1.77	-2.15	23	.043*
	Post-test B	1.94	24	2.93			
Week 5	Pre-test B	1.11	24	1.60	-3.40	23	.002*
	Post-test B	4.86	24	5.19			

*p<.05

Table 4-7 shows the t-test results related to the total scores of the students in the control group in the pre- and post-tests during the five weeks. In the first week, the t-value was $t_{23} = -10.64$, $p < .05$. There was a statistically significant difference between the mean values of the pre-test (17.07) and the post-test (33.04) results.

In the second week, the t- value was $t_{23} = -8.31$, $p < .05$. A significant difference was found between the pre-test and post-test scores.

According to the results of the third week, there was a significant difference between the mean values of the pre-test (6.35) and post-test (14.48) results. The t-value was $t_{23} = -6.49$, $p < .05$.

The scores of the fourth week demonstrated that the t-value was $t_{23} = -6.70$, $p < .05$. A significant difference was found between the mean values of the pre-test (8.05) and the post-test (14.15).

In the last week, there was a statistically significant difference between the mean values of the pre-test (7.63) and post-test (13.88) results, and the t- value was $t_{23} = -4.08$, $p < .05$

Table 4-7. The t-test results related to the differences in the total scores of the students in the control group in the pre- and post-tests during the five weeks

	Total	X	N	SD	t	df	P
Week 1	Pre-test	17.07	24	9.89	-10.64	23	.000*
	Post-test	33.04	24	10.63			
Week 2	Pre-test	14.99	24	6.13	-8.31	23	.000*
	Post-test	27.75	24	7.52			
Week 3	Pre-test	6.35	24	6.25	-6.49	23	.000*
	Post-test	14.48	24	7.41			
Week 4	Pre-test	8.05	24	5.80	-6.70	23	.000*
	Post-test	14.15	24	6.68			
Week 5	Pre-test	7.63	24	4.96	-4.08	23	.000*
	Post-test	13.88	24	7.33			

*p<.05

Table 4-8 shows the t-test results related to the difference between the post-test scores of the experiment and control group during the five weeks. In the first week, the t-value was $t_{23} = 7.59$, $p < .05$. A significant difference was observed between the mean scores of the experiment group (72.90) and the control group (33.04).

According to the results of the second post-test, the t- value was $t_{23} = 13.10$, $p < .05$. There was a significant difference between the scores of the experiment group and the control group.

When the results of the third post-test was analyzed, a significant difference was seen between the mean values of the experiment group (43.54) and the control group (14.48), and the t-value was $t_{23} = 7.32$, $p < .05$.

In the fourth week, the t-value was $t_{23} = 9.27$, $p < .05$. It was again seen that there was a statistically significant difference between the scores of the experiment and the control group.

When the results of the last week were analyzed, a significant difference was found between the mean values of the experiment group (51.06) and the control group (13.88). The t- value was $t_{23} = 12.60$, $p < .05$.

Despite the lack of instruction in vocabulary learning strategies in this group,

statistically significant differences were found in the test results. Several conclusions can be drawn here: first, this shows that the researcher, who was teaching the two groups at the same time, was not biased; second, the increase in scores may be due to the development of language skills of the students in the control group during the five weeks. When compared with the results of the experiment group, however, it is seen that the scores of the experiment group are much higher than those of the control group.

Table 4-8. The t-test results related to the difference between the post-test scores of the experiment and control group during the five weeks

	Post-test	X	N	SD	t	df	P
Week 1	Experiment	72.90	24	23.68	7.59	23	.000*
	Control	33.04	24	10.63			
Week 2	Experiment	76.31	24	16.86	13.10	23	.000*
	Control	27.75	24	7.52			
Week 3	Experiment	43.54	24	17.88	7.32	23	.000*
	Control	14.48	24	7.41			
Week 4	Experiment	49.67	24	17.67	9.27	23	.000*
	Control	14.15	24	6.68			
Week 5	Experiment	51.06	24	12.94	12.60	23	.000*
	Control	13.88	24	7.33			

*p<05

The third research question in this study aimed to investigate the students' attitudes toward the use of memory strategies. To this end, students in the experiment group were asked to write self-reports about what they thought about the strategies used for five weeks. To begin with, it should be said that students were eager to become familiar with vocabulary learning strategies since it was a challenging task for them to deal with all the new vocabulary items. The following excerpts reflect how students felt about the first strategy, the keyword method.

Yaprak: Keyword strategy was the most useful of all techniques. It helped me remember more than 90% of the words I learned. Since it is more fun than other methods, we were able to keep the new words in our memory for a long time.

Zeynep: It is an effective strategy to keep new words in your mind. With the help of this strategy, I was able to remember many words. For example, I had difficulty remembering the word 'salary', so I used a Turkish keyword that sounded like it. Now,

I can remember it easily.

Zülal: I think it is a useful strategy. When I use it, I can remember not only the pronunciation but also the meaning of the target words easily. In addition, it is really fun to try to associate a keyword with a mental image.

Yiğit: After the use of imagery, the keyword strategy is the second most useful technique for me to learn new words. Instead of trying to memorize word lists, I prefer using Turkish keywords that remind me of the pronunciation of the target words.

Zekiye: At first, the keyword technique seemed to be an unusual strategy. I thought that it was a bit nonsense. Later, however, I recognized that it was one of the most helpful strategies I relied on.

Ümran: I generally use this method when studying for vocabulary. It is really effective for recalling the words. I must also add that it is really fun to use this technique.

Yasemen: Although we studied this technique in the first week, I can still remember the keywords and mental images we created. Of all the strategies, this is my favourite.

The second strategy was the use of visual imagery. The following part shows what students thought about this technique.

Yunus Emre: I think this was the best strategy to study new words. People easily remember things that they see. Instead of spending hours trying to memorize new words, it is best to make use of pictures or drawings.

Volkan: Some people remember things better when they learn it visually. I believe that this technique is especially good for those who have difficulty memorizing things.

Rabia: I think this was the most effective strategy to learn new vocabulary. When we find a visual representing the new word, we do not have to spend much effort to memorize the word.

Ceren: This technique was the most fun. When I close my eyes and think of a word, first I remember the picture; and then, I recall the English word in a short time.

Yunus: Our brain remembers things better when we see something. That is, seeing is more effective than hearing. If we use this technique when studying for words, we can avoid memorizing lists which have a big number of words.

Zeynep: I believe that the more bizarre a picture is, the easier we can remember the new words. When we use extraordinary images in the classroom, I can remember the target words more easily.

After the use of imagery, grouping strategy was studied in the third week. The following excerpts show what students felt about this method.

Zübeyde: Since words related to each other are put in the same group, I find this technique helpful. When I remember one word in a group, I can easily recall the other words I put in that group.

Zehra: This technique was helpful, but I believe it is not as effective as the keyword technique. Sometimes, I recall the word, but I cannot remember which group it belongs to.

Yasemen: I also found this technique to be fun; however, the first two techniques seemed to be more effective for me to remember the words.

Rabia: I used to employ this strategy when I studied for biology subjects. It is really helpful to remember information. With this technique, we can learn a number of words under one heading, so it is really effective.

The fourth strategy was semantic mapping. Here is what students thought about this technique:

Zübeyde: Using this strategy, we were able to associate new words with similar items. It helped me not only learn the new words but also revise the words I had known before.

Yunus: In English, there are many words which have the same meaning. For this reason, when we draw a semantic map, we can remember the synonyms of a word, and add them to the map.

Ümran: It is a nice technique to store information. I can use this technique to brainstorm words or ideas before writing something, too.

Yunus Emre: This technique was helpful because it forced us to remember the words we had learned before. We also had a chance to discuss with our friends, so it was good for group work.

Finally, placing new words in a context was focused on in this study. The following part demonstrates what students thought about this strategy:

Yasemin: This seems to be the most difficult strategy. However, it helps one remember the words used in the sentence or story. Since it is a challenging method for our brain, we do not forget the vocabulary items easily. I also think it is the most entertaining technique.

Zöhre: This technique helps us put new words in a context meaningfully. We also pay attention to grammar rules when we write. Therefore, it is a good technique to improve our writing skill, too.

Rabia: When studying vocabulary, we have to learn where and when we can use that word. With this technique, we can learn about the collocations of a word, and it

helps us practise our writing.

Zehra: After the keyword technique, this method was the most useful one. In my opinion, the more you produce sentences or stories, the longer you can keep words in your mind.

Yiğit: Compared with the other strategies, this one seems to be the most challenging. This is perhaps because of the fact that it forces us to write, which is the most difficult thing for learners of English.

Zübeyde: When I use this technique, I feel myself more creative. This way, I can make up stories and remember words easily.

In order to summarize the findings related to the third research question, it can be said that students had a positive attitude towards the strategies used in the classroom. When read carefully, the above excerpts show that the keyword strategy was the one most students found useful. This may be due to the fact that this technique is fun for learners. The more interesting a keyword is, the easier it is for them to remember the target word. It should also be added that students were willing to use this technique outside the classroom. However, when the statistical analyses of the tests are taken into consideration (discussed above), use of imagery was the most effective technique that caused an increase in the scores of the experiment group.

When it comes to using visual imagery, most students identified it as an effective technique. It should be noted that most of the university students are often reluctant to draw pictures because they think that they are expected to draw artistic pictures. However, in this study, they saw that their drawings do not have to be perfect, and that they should focus on the purpose of this technique- to remember the vocabulary items. As a result, it was seen that use of imagery was a good way to recall words. As mentioned before, statistical analyses also showed that this strategy made the most significant difference in the scores of the experiment group.

Another strategy was grouping. Actually, the excerpts above show that this strategy was not as interesting for learners as the previous techniques, and it was a familiar technique for them from their previous school years; however, most students learned to benefit from this technique in vocabulary learning as well.

Semantic mapping was the fourth strategy. This strategy has some common points with grouping technique, so students had a chance to transfer what they had learned about grouping to this strategy. This was a demanding technique for students, especially the lower-level ones, because they were expected to find the connections between the new words and the ones they had known before.

Finally, placing new words into a context was studied. As the above excerpts reveal, this was the most difficult strategy for learners. Especially, those who had difficulty writing in the new language were having difficulties. However, since it was a creative and effective way for studying vocabulary, most learners were content. In short, when learners' opinions are taken into account, it is seen that the use of memory strategies for vocabulary was a beneficial experience for learners. It should be noted that they had a positive attitude towards all strategies, though they were in favour of using the strategies which were more fun for them. The researcher also witnessed that students in the experiment group continued making use of these strategies after the training finished.

CHAPTER V

5. Conclusion

5. 1. Overview of the Study

This study sought to investigate the effects of the five memory strategies used in the vocabulary instruction on students' retention of vocabulary. Participants were students at the preparatory school of Abant İzzet Baysal University, Bolu. The researcher was teaching two groups at the same level. An experiment group and a control group were used throughout the study. Before the study, the researcher made a list of the words that were included in the coursebook, *Touchstone A2*, which was the coursebook chosen by the institution. Then, the three word lists- General Service List, Academic Word list, and University Word List- were scanned. Words were chosen based on their frequency. However, some words which were not on these lists had to be included as well because students were responsible for those words in the exams administered by the institution. The study lasted for five weeks, and each week one memory strategy was focused on. The effects of the strategies were assessed through pre- and post-tests. Since it was aimed to find out the effects of strategies at the receptive and productive level, tests were divided into two sections as part A and part B. In the former part, questions focused on the receptive ability of the learners, and in the latter, they focused on their productive ability. At the end of the training, a vocabulary test, which contained all the items taught, was also given. The data collected were analyzed through paired samples t-test method on SPSS. Apart from the statistical analysis of the data, this study also presented students' perceptions of the strategies used during the five weeks.

5.2. Findings and Discussion

When the results of the test given at the end of the training were analyzed statistically, it was seen that there was a significant difference between the performance of the students in the experiment and control group (see table 4-1 in chapter 4, p. 62). In both part A and part B, students in the experiment group outperformed those in the control group. This shows that the use of five memory strategies had a positive impact on students' retention of vocabulary.

When it comes to the weekly tests, it was observed that there were statistically significant differences between the scores of students in both the experiment and the control group during the five weeks. However, the increase in the scores of the control group was much less than that of the experiment group (see table 4-4 in chapter 4, p. 66). When the table is examined, it can be seen that vocabulary retention of the experiment group is much higher. When the t-test results related to part A of the pre- and post-tests given during the five weeks were analyzed, the highest increase in the control group was seen in the second week; the scores increased from a mean of 14.01 to 23.87 (see table 4-5 in chapter 4, p. 67). In the same week , however, the scores of the experiment group increased from a mean of 17.39 to 45.14 (see table 4-2 in chapter 4, p. 63). The increase here was, therefore, three times as much as that in the control group. Actually, the increase in the scores of the control group was not surprising since students were improving their language and academic skills through courses extensively. This also indicates that the researcher was not biased against this group. It must also be added that students in the preparatory school were expected to take an exam administered by the institution to reach an upper level at the end of the five weeks, and vocabulary knowledge played an important role in their success in the exam. Hence, this might have had an effect on the increase of students' scores.

Apart from the statistical analysis of the tests given throughout the study, this study also focused on learners' reactions to strategy training. Learners in the experiment group submitted self- reports about what they thought about the strategies to the researcher. As a result of analyzing them, the researcher observed that students made

positive comments about the five strategies, though they favoured some techniques over the others. It was seen that learners were open to receive instruction in different techniques because vocabulary learning was a challenge for them. In order to deal with new vocabulary items, they were ready to make use of strategies that would help them.

5.3. Pedagogical Implications

The findings of the study showed that the selected five memory strategies (the keyword technique, use of visual imagery, grouping, semantic mapping, and placing new words into a context) had an impact on students' vocabulary retention at the end of the training.

This study took place in a higher education context; therefore, learners had well-established study habits. Most learners, for instance, were used to memorizing word lists; however, when they became familiar with a new set of vocabulary learning strategies, they were eager to make use of them. This shows that vocabulary learning strategies should also be emphasized in higher education settings. The use of strategies in classroom can also create a positive atmosphere since traditional teaching is abandoned in favour of a more dynamic and creative method. Use of these techniques also calls for pair or group work, which gives way to class discussions.

Students who took part in this study pointed out that the use of keywords was an effective way to recall words. This technique is often ignored by teachers since it is thought to be time-consuming; however, once the students become familiar with it, they find it to be fun and effective. Thus, teachers should consider using this strategy; students at higher levels can use keywords in the target language, but lower-level ones can create keywords in their L1. Use of imagery is also an effective technique. Learners tend to remember things better when they are presented visual aids. In order to encourage pair or group work, grouping and semantic mapping can be useful techniques. When it comes to placing new words into a context, it seems to be the most challenging technique for students because it requires them to produce a meaningful

context; however, it should be employed in language classes since it contributes to

It should be pointed out that long-term trainings could prove to be more effective. Due to time constraints, a short-term training was carried out by the researcher; however, to equip the students with effective learning strategies, institutions, curriculum designers, and teachers should consider integrating strategy instruction in their syllabus.

5.4. Limitations of the Study

There are some limitations inherent in this study. First of all, due to time limitations, not all the memory strategies were included in the program, so only five of them were focused on. This study lasted for five weeks, and each week one strategy was studied. If the training had continued for a longer time, the results could have been more effective. Second, the sample size in the study was small: the experiment group had 27 students, and the control group had 24 students. There was no chance to study with larger groups because groups that had been arranged at the beginning of the school year by the institution had a maximum number of 27 students. Third, the students who took part in this study were not proficient learners. It was their sixth week at the preparatory school, so they were at the beginning level. Being exposed to a new set of strategies was a new experience for them. Since the students were not proficient enough to create keywords in the target language, for example, the researcher provided them with keywords in L1 in the first week. If the learners had been more proficient, they could have created their own keywords in the target language. Finally, in the study, students' preferences of strategy use was not focused on. Tests focused on the receptive and productive learning. However, in addition to tests, a questionnaire or interview technique could have been used to investigate strategies that students preferred to use.

5.5. Suggestions for Further Research

Several suggestions can be made based on the findings and limitations of this study:

- The length of the training period should be increased to get more effective results.
- With a larger sample, the results would prove more reliable.
- To help students become autonomous learners, teachers should present them with the opportunity to select from a bigger number of strategies that they can use outside the classroom as well.
- This study was conducted in a higher education context, but a similar study can also be carried out with different age groups.
- Before strategic instruction, data about the existing strategy use of learners can be obtained via questionnaires or interviews. In this way, the changes in their perceptions of the vocabulary learning strategies can be investigated.
- The findings of the study could be used as a guide by curriculum designers in program development studies.
- The findings of the study can also be used in in- service training programmes for students and teachers.

5.6. Conclusion

This study investigated the impact of selected memory strategies on students' vocabulary retention. Though there were significant differences in the test results of the experiment group, it was observed that the scores of the control subjects also increased. From these results, however, it should not be concluded that memory strategies had no effect on vocabulary learning. When the scores were analyzed, there was a significant difference between the performance of the experiment group and control group. This research also focused on learners' attitudes towards the selected five memory strategies, and it was seen that participants were in favour of the inclusion of memory strategies in vocabulary teaching. The results show that teachers should

consider integrating memory strategies into their regular classroom teaching to enhance vocabulary learning.

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APPENDICES

Appendix 1: Slides about the Strategies

Slides related to the keyword technique

- When we study a foreign language, we can use different methods to learn the new words.
- The keyword method is one of them.
- For example, to learn the word ‘dungeon’ (zindan), a Turkish student can imagine a prisoner who is trying to escape from the dungeon.
- The prisoner hits the pipes and makes a big noise (dan cın), which is pronounced the same as ‘dungeon’.
- ‘Dan cın’ is the keyword here.
- To learn the Turkish word for door ‘kapı’, an English speaker chooses the word ‘cop’ (policeman) as it is acoustically similar to ‘kapı’ and then imagines a policeman pounding on a door (Schmitt & McCarthy, 1997).
- Here ‘cop’ is the keyword.
- This method divides the study of a vocabulary item into two stages:
 - (1) Associate the foreign word (e.g. dungeon) to a word in your language (dan cın) that sounds like some part of the foreign word (acoustic link).
 - 2) Form a mental image or picture of the keyword (a prisoner hitting the pipes).
- Imagine an English student taking a class in Spanish.
- He wants to remember the Spanish word ‘carta’ (letter).
- He imagines a large grocery cart and pictures a letter in the cart (Pressley & Levin & Miller, 1981).
- When he sees the word ‘carta’, he remembers this picture.
- Here the keyword is ‘the cart’.
- To learn the Spanish word ‘pato’ (duck), an English student imagines a duck with a pot on its head because the ‘pot’ is acoustically similar to ‘pato’

(Levin& Pressley, 1981).

- The pot is the keyword.
- An Indonesian learner of English wants to remember the word ‘parrot’.
- He chooses the Indonesian word ‘parit’ as the keyword (Nation, 1990).
- He imagines a parrot in a ditch.
- With this method, a student can create an unusual association between the word form and its meaning (Nation, 1990).
- People remember things which are unusal, ridiculous or out of place better.
- Teachers can provide the keyword to students.
- Students can invent keywords on their own, too.
- If possible, students can take keywords not from their native language but from the target language vocabulary with which they are familiar (Coady & Huckin, 1997).
- For example, to learn the word ‘carlin’(old woman), students imagine an old woman driving a car.
- We usually use the keyword method to learn concrete words (door, parrot, dungeon, etc.),but we can also use it to learn abstract words.
- For example, to learn the verb ‘persuade’(to cause someone to do something by giving them good reasons for doing it), you can imagine two women shopping.
- One woman says ‘You should buy that purse!’ The other says ‘ I think you can persuade me to buy it.’
- When you see the verb ‘persuade’, you remember the keyword ‘purse’, which is acoustically similar to the verb.
- Now test yourself with the following examples. Read the following, and try to remember the words 10 minutes later.
- Conserve: korumak (keyword: konserve)
- Konserve yiyecekleri korur.
- Top: üst, yukarı (keyword: top)
- Top yukarı kaçtı.
- Tie: kravat (keyword: tay)
- Çocuklar tayın boynuna kravat bağlamışlardı.

- Drench: iyice ıslanmak, sırlsıklam olmak (keyword: direnç)
- Yağmur onları iyice ıslattı ve dirençlerini kırdı.
- Sneak: gizlice yanaşmak (keyword: sinek)
- Kertenkele sineği yemek için gizlice yanaştı.

Slides related to the use of imagery

- A picture is worth a thousand words.
- A good way to remember words is to use a **picture** of it or create a **mental image** of it.
- The use of visual imagery for vocabulary learning is based on making associations between a picture and a word (Oxford& Crookall, 1990).
- Our memory for visual images is extremely reliable and there is little doubt that objects and pictures can facilitate memory' (Gairns& Redman, 1986).
- 'The capacity for long-term memory of pictures seems almost unlimited' (Wolfe, 2001).
- Actually, people are used to the linkage between verbal and visual symbols in daily life (e.g. no smoking signs) (Oxford& Crookall, 1990).



- You can easily draw pictures of objects (a house, a tree, etc.), adjectives (tall, wide, etc.), prepositions (under, between, etc.) easily.
- Drawings can also help you remember abstract words (anger, happiness, etc.).

- These products do not have to be artistic (Oxford, 1990).
- You can easily draw pictures of objects (a house, a tree, etc.), adjectives (tall, wide, etc.), prepositions (under, between, etc.) easily.
- Drawings can also help you remember abstract words (anger, happiness, etc.).
- These products do not have to be artistic (Oxford, 1990).
- Visualization process can include humour, creativity, and pleasure.
- The more bizarre the visual image, the more memorable it becomes (Willis, 2008).
- For example, a student wants to remember the word ‘diameter’. He draws a sickly (*dying*) looking *meter* stick as the **dying meter** or **diameter** of a circle (Willis, 2008).
- To remember the word ‘**morose**’ (**bad-tempered, miserable**), two students drew a **sad rose** (Wolfe, 2001).
- You can also associate new words with a personal experience.
- For example, a student can connect the word ‘**snow**’ to a memory of playing in the snow while a child (Schmitt& McCarthy, 1997).

Slides related to grouping strategy

- To use this method, you should separate new words you learn into groups that are easy for you to remember.
- This strategy involves dividing a longer word list into new, shorter lists.
- Word grouping creates new groups which hang together because of some common characteristic (Oxford& Crookall, 1990).
- Grouping makes vocabulary learning easier by reducing the number of different elements.
- Grouping helps recall of words because people organize words into groups naturally (Schmitt, 2000).
- You can group words in different ways.

For example, you can put words into groups according to their grammatical function (noun, verb, adjective, etc.), topic (weather, school, personality), or opposites, and so on.

verbs: swim, run, drive

personality: friendly, shy, outgoing

opposites: hot/cold, tall/short, near/far

- Norberto, a student learning English, categorizes words grammatically in his note- book.
- For example, he writes *you, he, she, they, someone; hard, easy, kind, soft; quickly, nervously, completely.*
- Then he labels these categories: *pronouns, adjectives, and adverbs* (Oxford, 1990).
- You can use different criteria when you group words:
 1. Topic: types of fruit (apple, banana, peach, etc.)
 2. Activity: steps followed in an activity (starting a car)
 3. Words with similar meanings: (pretty, lovely, attractive, etc.)
 4. Items which form pairs (synonyms, opposites): kid/ child, old/ new, buy/ sell, etc.
 5. Items along a scale: (human age: a child/ a teenager/ an adult; describing a composition: excellent, very good, good, satisfactory, weak)
 6. Items within word families: (biology, biologist, biological)
 7. Words that start with the same letter: (can, car, cat, chat, chop, etc.)
- To sum up, organized material is easier to store in and retrieve from long-term memory.
- It is well known in psychology that if the material is organized in some way, people can use this organization to their benefit.
- Now test yourself.
- How can you group the following words?
- chair/ lazy/ dress/ afraid/ couch/ necklace/ worried/ skirt/ shirt/ ring/ table/ bracelet /suit/ watch/ nervous/ sofa

Compare your list with a friend's list.

Slides related to semantic mapping

- A semantic map is a diagram. We can highlight the key concepts in this

diagram and link them with related concepts via arrows or lines.

- A semantic map visually shows how ideas fit together (Oxford, 1990).
- To create a semantic map, you need to brainstorm associations which a word has and then diagram the results (Schmitt & McCarthy, 1997).

For example, students learn the word 'faithfulness'. Then they think of other words related to it.

- They give the following words or phrases: cat, friend, family, reliance, trust, dishonest, unfaithfulness, believe in friendships, bonds, obey, dog, friendly, sexually unfaithful, gossiping, marriage, love (Schmitt & McCarthy, 1997).
- To create a semantic map, student discussion is important. Through this process,
 - students learn the meanings and uses of new words and new meanings for known words (Pittelman & Johnson, 1985).
 - The steps followed to draw a semantic map:
 1. Choose a word or topic.
 2. Write the word on the board or on a piece of paper.
 3. Think of as many related words as possible.
 4. Share your list with your friends.
 5. Name the categories you have created.
 - You can draw a picture of the word in a semantic map.
 - You can write its definition, synonym, and antonym.
 - You can write a sample sentence to remember the word better.

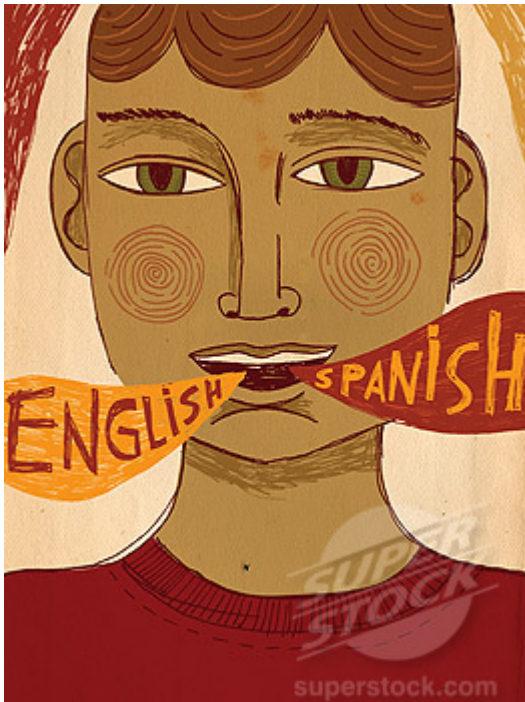
Slides related to placing new words into a context

- When you study foreign vocabulary, you can place words or phrases in a sentence, conversation, or story to remember it (Oxford, 1990).
- This strategy involves linking the new information with a context.
- For example, you can make up a story using the new words in a context that helps you remember them. This strategy is very helpful if you can visualize (see in your mind's eye) the actions or images of each word.
- To use this strategy, you can also use the grouping technique (group the words

which are related to a topic).

- Learners with high verbal ability profit more from this technique of verbal elaboration.
- In one study, students who used this strategy remembered more than 90% of the 120 words, but other students remembered only 13% (McGee & Wilson, 1984, as cited in Wolfe, 2001).
- This strategy can be a fun because a creative student can connect words which are very different from each other.
- For example, Katya, a learner of English, learned a list of words related to sewing (button, needle, stitch, etc.). Then she wrote a short story to put these words into a meaningful context (Oxford, 1990).
- If you want to remember the words *rug*, *expensive*, *angry*, *wipe*, and *relief*, you can write a short story.
- There was an expensive Persian rug in the shop. A customer spilled apple juice on it, and caused a stain. The owner all of a sudden became very angry. The man who spilled the juice ran to get something to wipe it with. To the owner's relief, the rug was not damaged.
- Students who learned the verb 'ignore' (not to pay attention) wrote sentences using their personal experiences.
- I ignore my baby brother when he screams.
- I ignore the telephone ringing when I don't want to talk to anybody (Willis, 2008).

Appendix 2: Examples of Visuals Used in Training



Bilingual



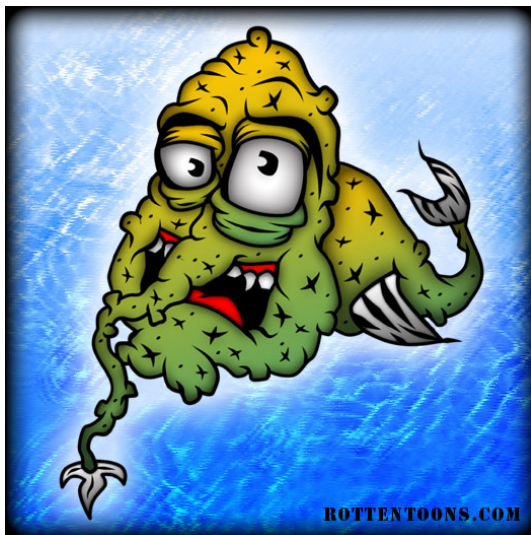
Candle



Witch



To exchange



Weird



To shout



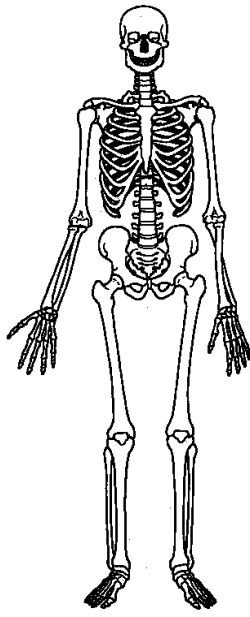
Jewellery



To share



Widow



Skeleton

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