SÖZCÜK ÖĞRETİMİNDE "ÖĞRETMEN/ARAŞTIRMACI TARAFINDAN SAĞLANAN ANAHTAR SÖZCÜK YÖNTEMİ"NİN ETKİLERİ

THE EFFECTS OF "EXPERIMENTER PROVIDED KEYWORD METHOD" IN TEACHING VOCABULARY

Murat KÜLEKÇİ

(Yüksek Lisans Tezi)

Eskişehir 2000

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Anadolu Üniversitesi Sosyal Bilimler Enstitüsü

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Bu deneysel çalışmanın amacı, İngiliz yabancı sözcüklerin hatırlanması ve kavranmasında, öğretmen/araştırmacı tarafından sağlanan anahtar sözcük yönteminin, Anadolu Üniversitesi Hizmet İçi Dil Merkezinde kullanılan sözcük öğretimi yönteminden, daha etkili olup olmadığını ortaya çıkarmaktır. Bu amaçla, deney grubuna öğretmen/araştırmacı tarafından sağlanan anahtar sözcük yöntemi ile eğitim verilmiş; kontrol grubuna da ezberleme tekniği ile sözcükler öğretilmiştir. Bu amaçla, öğrencilere bir sözcük listesi verilerek ezberlemeleri istenmiş daha sonra sözcüklerle ilgili boşluk doldurma, eşanlam ve zıtanlam çalışmaları yapılmıştır.

Çalışmaya, KPDS (Kamu Personeli Dil Sınavı) adlı yeterlik sınavına hazırlanmak için yoğun dil kursuna devam eden 40 denek katılmıştır. İki orta-seviye grup kullanılmıştır. Bir grup deney diğeri de kontrol grubu olarak belirlenmiştir. Her grupta 20 denek bulunmaktadır. Her iki grup için, 30 sözcüğe yönelik toplam çalışma süresi 120 dakika sürmüştür.

Çalışmanın başında her iki gruba 90 sözcükten oluşan bir sözcük testi verilmiş ve sözcüklerin anlamlarını vermeleri istenmiştir. Bu testin sonucuna göre deneklerin anlamlarını bilmediği 30 sözcük saptanmış ve bu 30 sözcükten oluşan test, öntest olarak belirlenmiştir. Geriye kalan 60 sözcük elenmiş ve bir daha çalışmada kullanılmamıştır. 30 sözcükten oluşan sözcük hatırlama öntesti aynı zamanda hem sontest hem de uzun süreli sözcük hatırlama testi olarak 3 hafta sonra kullanılmıştır.

Sözcük kavranmasının ölçülebilmesi için, çalışmadan önce bir öntest verilmiş ve bu test yine uygulama sonunda sontest ve 3 hafta sonrada uzun süreli test olarak verilmiştir.

Kavrama testi iki ayrı bölümden oluşmaktadır. Birinci test çoktan seçmelidir. İkinci testte öğrenciler verilen sözcük listelerinden cümle içinde boş bırakılan yerleri doldurmak zorundadırlar.

Çalışma esnasında, deney grubunda görsel uyarıcılar ve anahtar sözcükler kullanılmıştır. Kontrol grubuna ise bir sözcük listesi verilmiş bu sözcükleri ezberlemeleri istenmiştir.

Çalışmadan önce, her iki grubun öntest sonuçları karşılaştırılmış ve eşit oldukları saptanmıştır. Daha sonra, çalışma sonunda aralarında herhangi bir fark olup olmadığını anlamak için sontest sonuçları karşılaştırılmıştır. Uzun süreli test sonuçları karşılaştırılarak yabancı sözcüklerin akılda tutulmaları karşılaştırılmıştır. Sözcük öğreniminde ve akılda tutulmasında iki grup arasında belirgin bir farkın olup olmadığını saptayabilmek için öğrencilerin aldıkları neticelere bağımsız örnekler için t-testi uygulanmıştır. Grupların kendi içlerinde öntest ve sontest arası ve daha sonrada sontest-uzun süreli test arasındaki gelişmeleri belirleyebilmek için bağımlı örnekler için t-testi uygulanmıştır.

Sonuçlar, araştırmacı tarafından sağlanan anahtar sözcük yönteminin, öğrencilerin hatırlama ve kavrama performansında (hem kısa hem uzun süreli), kurs metodundan daha etkili olduğunu ortaya çıkarmıştır.

Sontest sonuçlarına göre, her iki grubunda ilerleme kaydettiği gözlenmiş fakat deney grubundaki ilerleme daha fazla olmuştur.

Uzun sürede, her iki grubunda bazı sözcükleri unuttuğu saptanmış, fakat yinede aralarında istatistiksel olarak belirgin bir fark ortaya çıkmıştır. Sonuçlar, ezberleme tekniği ile sözcüklerin öğretildiği kontrol grubunun, anahtar sözcük yönteminin kullanıldığı deney grubundan daha düşük bir performans sergilediğini ortaya çıkarmıştır.

Sonuçlar, öğretmen/araştırmacı tarafından sağlanan Anahtar Sözcük Yönteminin, deneklerin sözcük hatırlamasını ve kavramasını geliştirmek için etkili bir yöntem olduğunu göstermektedir. Bu yöntem, üniversite sınıfları ortamında yabancı sözcük öğretimi için destekleyici bir yöntem olarak kullanılabilir.

THESIS OF MASTER OF ARTS ABSTRACT

THE EFFECTS OF "EXPERIMENTER PROVIDED KEYWORD METHOD" IN TEACHING VOCABULARY

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In this experimental study, the aim is to reveal whether experimenter-provided keyword method is more effective on vocabulary recall and comprehension than the method which is used in Anadolu University In-Service Language department's programme. For this reason, experimental group received treatment in experimenter-provided keyword method; and the control group was taught by rote rehearsal technique in which students are given a vocabulary list to memorise. Later, these memorised words were studied by means of fill-in-the-blank, synonym and antonym exercises.

Subjects in this study were 40 academic staff at Anadolu University who were getting an intensive English course in order to take a proficiency exam (KPDS). Two intermediate level classes were used. One group was assigned as the experimental group and the other as the control group. There were 20 examinees in each group. The total study period for each group was 120 minutes to learn the 30 vocabulary items.

At the beginning of the experiment a vocabulary test consists of 90 words was given to both groups and they were asked to write the meanings of these words (in English or in Turkish). According to the results of this test, 30 words, of which none of the students knew the meaning, were choosing. The other 60 vocabulary words were eliminated and were not used again in the experiment. Remaining 30 words were used as a vocabulary recall pre-test, and the same test was given as a post-test immediately after treatment to test immediate recall. To measure long term retention, that is delayed recall, the same test was given after three weeks.

To measure vocabulary comprehension, a pre-test was given before the treatment and the same test was used as immediate post-test and it was used to measure delayed comprehension, the same test was given after three weeks.

There were two sections in the comprehension test. The first one was a multiple choice test. In the second one, the students were to fill in the blanks choosing the appropriate word from the given list.

During the study, experimental group was provided with visual stimuli and keywords while the control group was given vocabulary in a list and was asked to memorise.

Before the study, the pre-test scores of both experimental and control groups were compared to see if both groups were the same when the study started.

Then, the post-test scores of both groups were compared to see whether the treatment led a difference in immediate vocabulary learning. Then the scores of the delayed tests were compared with the post-test scores to measure retention of the vocabulary items. The raw scores were subjected to t-test for independent samples to reveal whether there was any statistically significant difference between the groups in terms of both immediate vocabulary learning and retention. We also looked at the difference within the groups to see whether there was a significant difference within each group. As a result of the study, the pre-test and post-test scores of each group were analysed by means of t-test for dependent samples.

The results indicated that the experimenter-provided keyword method proved to be effective in students recall and comprehension performance (both immediate and delayed) compared to the course method.

Both groups improved according to the results of post-test scores but, the experimental group improved more than the control group.

Although both groups forgot some of the words in the long run, there was still a statistically significant difference between the experimental and the control group. Our results have shown that the control group who where taught by rote, rehearsal technique showed less performance than the experimental group who were taught by keyword method.

Findings suggest that the experimenter-provided keyword method is an effective way to improve students' vocabulary recall and comprehension. It may be used as a supplementary method for vocabulary teaching in university classroom conditions.

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1. INTRODUCTION

1.1. Background to the Problem

In recent years there has been a shift in focus from the teacher to the learner; in other words; a shift from exclusive focus on the improvement of teaching to an increased concern for how learners go about their learning tasks in a second or foreign language. It has become clearer that much of the responsibility for success at language learning rests with individual learners and with their ability to take full advantage of opportunities to learn (Oxford, 1990). In a language classroom, every student may have the same opportunity to learn but every student does not follow the same way to learn a foreign language.

Different learners have been shown to follow different ways in learning a second or a foreign language. Rubin (1987) states that some learners approach the learning task in more successful ways than others. In the classroom, although every student is exposed to the same teaching material, they learn differently and some language learners are more successful than others. This is because successful learners manipulate their learning process in many ways, and they are the ones who know how to learn. That is, those who can use the learning environment purposefully, actively and independently, become successful learners.

Successful learners have learning strategies of their own. 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. Appropriate language learning strategies result in proficiency and greater self confidence.

By appropriate learning strategies, the student may have the opportunity to choose the best way to learn a foreign language in various language activities. Besides, successful language learners also take greater responsibility for their own learning and to use language strategies; therefore, they are more autonomous than others (Wenden, 1987). Oxford (1990:7) also states that:

> Language learning strategies encourage greater overall self-direction for learners. Self-direction is particularly important for language learners, because they will not always have the teacher around to guide them as they use the language outside the classroom. Moreover, self-direction is essential to the active development of ability in a new language.

The strategy identification studies (Chamot and Kupper, 1989; Cohen and Aphek, 1980; Wenden, 1987) have shown that successful second and foreign language learners use a variety of appropriate metacognitive, cognitive and social strategies for both receptive and productive tasks, while less successful students not only use strategies less frequently, but have a smaller repertoire of strategies and often do not choose appropriate strategies for the task (Chamot and Kupper, 1989).

Strategy training aims at aiding the learner to move toward decision making and autonomy. If we can teach our students how to learn, how to solve problems and how to retrieve the learned information, we can create autonomous learners (Weinstein and Moyer, 1986). Thus, teaching our students language learning strategies is important in order to create successful language learners. As Oxford (1990:12) states:

> Some aspects of the learner's make up, like general learning style or personality traits, are very difficult to change. In contrast, learning strategies are easier to teach and modify. This can be done through strategy training, which is essential part of language education. Even the best learners can improve their strategy use through such training. Strategy training helps guide learners to become more conscious of strategy use and more adept at employing appropriate strategies.

It is not uncommon for language teachers to hear students say that they cannot learn vocabulary easily or that they forget the new vocabulary items very soon after studying them. Strategy training helps students to learn, to recall and to retain the vocabulary items.

Oxford states that (1990), though some teachers think vocabulary learning is easy, language learners have a serious problem remembering the large amounts of vocabulary necessary to achieve fluency. Language learning strategies such as; grouping associating/elaborating, placing new words into a context, using imagery, semantic mapping, using keywords, representing sounds in memory and structured reviewing are used for better vocabulary learning. Thompson (1987) states that there are learning strategies specific to vocabulary and these vocabulary learning strategies are largely based on mnemonic techniques which help individuals learn faster and recall

better because they provide learners with useful retrieval cues. Memory strategies help language learners to remember vocabulary necessary to achieve fluency. They enable learners to store verbal material and then retrieve it when needed for communication (Oxford, 1990).

Memory strategies are also called mnemonics. The word mnemonics means aiding the memory. A mnemonics is a system or technique which aids the memory by means of stories, rhymes, acronyms, verbal mediators and visual imagery (Higbee, 1979). Mnemonics have been used for thousands of years. For example, orators in ancient times could remember a long speech by linking different parts of the speech with different rooms of a house or temple, and then taking a walk from room to room. Then, people used memory strategies to remember practical information about farming, weather, or when they were born (Oxford, 1990). Imagery played a central role in order to aid memory since the Early Greeks. Cicero (Cited in Yates, 1966:2), in his book De Oratore described the procedure as follows: "Persons desiring to train this faculty (of memory) must select places and form mental images of the things they wish to remember and store these images in their places will preserve the order of things, and the images of the things will denote themselves".

The mnemonic technique was introduced to language teaching, specifically to vocabulary teaching by Atkinson. Atkinson (1975:821) refers to mnemonics as keyword method and defines keyword method as:

> In general, the keyword has no relationship to the foreign word, except for the fact that it is similar in sound. The keyword method divides vocabulary learning into two stages. The first stage requires the subject to associate the spoken foreign word with the keyword, an association that is formed quickly because of acoustic similarity. The second stage requires the subject to form a mental image of the keyword "interacting" with the translation; this stage is comparable to a paired-associate procedure involving the learning of unrelated one's own knowledge. To summarise, the keyword method can be described as a chain of two links connecting a foreign word to its translation. The spoken foreign word is linked to the keyword by a similarity in sound (what I call the acoustic link), and in turn the keyword is linked to the English translation by a mental image (what I call the imagery link).

Atkinson (1975) proposed the keyword method as a supplementary technique for foreign language vocabulary study and reported that it is superior to rote rehearsal

procedure for vocabulary and strongly claims that, this method is highly useful for both foreign and native language learning.

Oxford (1990:41) also defines the keyword method as a method which combines sounds and visual imagery:

> This strategy combines sounds and images so that learners can more easily remember what they hear or read in the new language. The strategy has two steps. First, identify a familiar word in one's own language or another language that sounds like the new word. Second, generate a visual image of the new word and the familiar one interacting the same way. Notice that the target language word does not have to sound exactly like the familiar word (Additional pronunciation practice may be needed via the strategy of formally practising with sounds and writing systems. For example the new French word froid (cold) is linked with a familiar word, Freud, then is imagined Freud standing outside in the cold.

Thus, keyword method involves pairing different types of material. In vocabulary learning, it is possible to give verbal labels to pictures, or to create visual images of words or phrases. Linking the verbal cue with the visual cue is very useful to vocabulary learning for four reasons. First, the mind's storage capacity for visual information exceeds its capacity for verbal material. Second, chunks of information are transferred to long term memory through visual images. Third, visual images may be the most potent device to aid recall of verbal material. Fourth, a large proportion of learners have a preference for visual learning (Oxford, 1990).

Although keyword method has been studied, there are certain areas to which little attention has been directed. First of all, most of the studies on the keyword method have tried to investigate the effect of the method on recall rather than on comprehension and recognition. The aim of these experiments was to measure the recall of the target vocabulary items (Wang, Thomas and Quelette 1992; Pressley, Levin, Kuiper, Bryant and Michener, 1982; Doğan, 1995).

Second, Levin, Mc Cormick, Miller and Schriberg (1979) conducted a study to measure the effect of keyword method in a laboratory setting, which provides little help in understanding the applicability of the method to the classroom settings when necessary conditions (motivational, attentional and instructional) were provided to students. A number of studies have suggested that learning strategy training needs to be conducted in conjunction with the regular course of instruction over an extended period

of time, rather than as a separate intensive "how to learn" course (Chamot and O'Malley, 1987; Chamot and Kupper, 1989; Wenden, 1987). Therefore, application of the keyword method under classroom conditions where teaching and learning process occurs is necessary.

Although the effect of long term retention of the learned vocabulary has been studied in the keyword studies, the results of these studies are diverse. Some studies (Brown and Perry, 1991; Oxford, 1989; Rubin 1987; Troutt-Ervin, 1990) showed that the keyword method was effective in long term retention. However in Hitch, Halliday and Dadd's study (1989), the examinees could not remember the meaning of the vocabulary items after four weeks.

Another question on using keywords is, whether the keywords should be supplied by the teacher or should be generated by the learners. This question requires more research because the findings are inconsistent. Hall, Wilson and Patterson (1981) showed that student-generated group was inferior to the teacher-provided group in immediate and delayed vocabulary recall. However, Yaylı's study (1995) showed no significant difference between two groups.

The keyword method of foreign language learning has been shown to be effective when humorous keywords were used (Atkinson and Shiffin, 1968; McGhee, 1983).

As Schmidt (1994:953) states

> Humor plays an important part in education, advertisement, entertainment and politics... because humorous material often concerns topics that are particularly interesting, meaningful, or relevant to the subject. Humor can be a signification part of the educational process. However, humor may enhance memory for humorous material at the expense of other information contained in a lecture or text-book chapter. Thus, humor must be integrated with the course content.

Students have been more motivated by those keywords as attention was provided by those comic, entertaining keywords which could be easily kept in memory for a longer time.

1.2. Problem

Vocabulary learning as well as comprehension, recognition and recall present a problem for the language learner. Present vocabulary teaching techniques seem

inadequate to solve this problem. Previous research has shown that teaching strategies in order for the learner to cope with the difficulties in language learning is important (Oxford, 1986).

Most of the students have difficulty in learning new vocabulary items as they lack the vocabulary learning strategies. The subjects of this study need to learn many new vocabulary items in order to be successful in the proficiency exam that they are required to take. They are exposed to rote rehearsal technique to learn vocabulary items and they have problems with vocabulary as they have difficulty to keep those items in mind in order to recall and comprehend vocabulary items.

Therefore, these students need to be trained in terms of learning strategies, namely the keyword method in this study, in order to overcome these problems in vocabulary learning.

1.3. Purpose of the Study

This study aims at exploring the effect of experimenter-provided keyword method on immediate and delayed recall and comprehension of vocabulary items. The vocabulary recall and comprehension improvement of the subjects receiving instruction through this model is compared with the rote rehearsal technique in which students are first given a vocabulary list to memorise, and then given fill in the blanks, synonym and antonym exercises which have been the traditional vocabulary teaching method in the intensive English course programme of Anadolu University, In-Service Language Center.

1.4. Significance of the Study

Because vocabulary learning is a major part in language learning, it is important to learn if the experimenter-provided keyword method can effectively facilitate this process. Vocabulary learning was also very important for the subjects because of the proficiency exam (KPDS) they are required to take. By means of keyword method, the students are expected to be able to recognise, comprehend and recall vocabulary better than they do now.

1.5. Research Questions

1. Is the experimenter-provided keyword method more effective than rote rehearsal technique in terms of immediate recall of vocabulary?

2. Is the experimenter-provided keyword method more effective than rote rehearsal technique in terms of immediate comprehension of vocabulary?

3. Is the experimenter-provided keyword method more effective than the rote rehearsal technique in terms of delayed vocabulary recall?

4. Is the experimenter provided keyword method more effective than rote rehearsal technique in terms of delayed vocabulary comprehension.

1.6. Limitations of the Study

This study was limited to the students attending two different classes in Intensive Course of In-Service Language Center of Anadolu University, Eskişehir.

This study was also limited to intermediate level Turkish EFL students and only for vocabulary teaching.

1.7. Definitions of the Terms

Cognitive Strategies: Skills that involve manipulation or transformation of the language in some direct way, e.g., through reasoning, analysis, note taking, functional practice in naturalistic settings, formal practice with structures and sounds.

Memory Strategies or Mnemonics: Techniques specifically tailored to help the learner store new information in memory and retrieve it later.

Rote rehearse: Memorise, (by rote: by memory without thought of the meaning).

Immediate Test: The test which is given just after the treatment.

Delayed Test: The test which is given after a period of time after the treatment (e.g. two weeks, three weeks, 2 months).

Course method used in In-Service Language Center of Anadolu University: In this method students are first given a vocabulary list to memorise, and then given fill in the blanks, synonym and antonym exercises.

Learning Strategies: Techniques which students use to comprehend, store, and remember new information and skills. What a student thinks and how a student acts in order to learn comprise the non-observable and observable aspects of learning strategies.

Recall: To bring back into the mind, to remember or cause to remember.

2. LITERATURE REVIEW

2.1. Teaching Vocabulary

The knowledge of the vocabulary has an important role in learning a foreign language. Well-known grammar rules are not sufficient to use and to understand English. The students of a foreign language also need to have a large knowledge of vocabulary in order to be successful in the use of that target language.

For the beginning foreign-language student, vocabulary acquisition is not a major problem. Typically, text books introduce new vocabulary either with illustrations or through the more traditional listing of new words accompanied by the English equivalent. Words are generally pronounced by the teacher and repeated by the students. As such, students begin to acquire a listening and speaking vocabulary in the target language. Initial reading and writing experiences are constrained by the limited L2 vocabulary that the student has acquired. Thus, it appears that two generalisations concerning the vocabulary of beginning foreign-language learners immediately become obvious. First, their listening, speaking, reading and writing vocabularies are essentially the same; and second, initial vocabulary learning simply requires attaching a new label to an already attained concept (Hague, 1987).

Learning a second language may, at first, appear deceptively simple. In fact, students may mistakenly assume that the new language is like a mirror image of the native language, only with a new set of symbols. Such thinking may work well at first, but may also be the source of problems that arises as students move into the intermediate and advanced levels of language learning.

Therefore, as the student advances to higher levels of language learning, vocabulary acquisition becomes more like vocabulary acquisition in L1. The student must do more than simply learn a new label for a known concept: the student must also acquire new concepts. Furthermore, according to Maiguashca, (1984) students must be able to produce words in appropriate context, to discriminate among synonyms, to know syntactic and semantic constraints on each word, to distinguish between various shades and levels of meaning, and to exploit not only the referential value of words but their cognitive, affective and stylistic values as well. Because the process of vocabulary

learning has been largely neglected in foreign language research, and is only beginning to enjoy a renaissance in L1 research, it seems appropriate to review the L1 literature and to collect its possible implications for L2 learning.

To read, a reader must know words. To become a better reader, a reader must learn more words. Anderson and Freebody (1981), advance three theories of word knowledge on reading comprehension. The aptitude hypothesis attributes inordinate verbal ability to an innately superior mental faculty; in essence it suggests that intelligent people are better readers simply because of their excellent intellect. The knowledge hypothesis posits that vocabulary knowledge is a reflection of general knowledge which, in turn, adversely or propitiously affects reading comprehension. New words are learned by adding new concepts to already existing schemata, or knowledge structures. Third, the instrumentalist hypothesis postulates that reading comprehension is directly related to the magnitude of the reader's vocabulary; in other words, the more words that are known, the more that is likely to be understood.

Morgan and Rinvolucri (1986) interviewed students in a Cambridge School about their feelings on vocabulary learning. Two thirds of them said they were not taught enough words in class, words they needed when talking to people, watching TV, and reading. They felt their teachers were very keen on teaching them grammar and on improving their pronunciation, but that learning words came a poor third.

Why should this be so? When we "do" a reading passage or a listening comprehension with our students, surely we are teaching vocabulary? Sadly; in many classrooms, this is not the case. Encountering and "understanding" a word are seldom enough; as with meeting people, there need to be depth and interaction for the encounter to be memorable. Some students recognise this need even where their teachers do not, and develop their own learning systems. These learners recognised something that their teachers did not: for learning to be effective, attention must be paid to the student's own process of learning.

We conceive of vocabulary learning as a relational process; it could be described as making friends with the words of the target language. Why is it, for example, that a learner will immediately remember one word apparently effortlessly, while another met at the same hour will be refused a place in her mind? Don't we sift people and faces in

the same mysterious way? Just as a look, a movement, a chance remark, a tone of voice, or something in the setting can influence our first impressions of a person, so can our perceptions of words be affected by, for example:

- the sound of the word.

- the kinetic sensation of lungs, throat, mouth and nose.

- the shape an a page, on a poster, in the sky and on a TV screen.

- conventional associations: semantic and syntactic categories to which a word is seen to belong, collocations, metaphors etc.

- literary associations.

- the associations the word has for you (e.g. what comes to mind when you think of your own name or the name of a street you once lived in).

- the circumstances of meeting the word (and not just the narrow 'context' of the text utterance, but the room, the people present, the time of day, etc.).

All these factors will play a part in 'learning' a word.

Students learning English for higher education face a formidable task. Nagy and Herman (cited in Brown and Perry, 1991) summarised a number of studies investigating the acquisition of vocabulary in native English Speakers, and estimated that by the last year of high school the typical student has learned 40.000 words, and an average of 3000 per year. A logical extrapolation is that an ESL student who is learning academic English would have to learn on average more words per year than this. The question is, how can students increase their learning power for new vocabulary?

Oxford (1986) has argued that a greater emphasis needs to be placed on identifying effective second language learning strategies and teaching students how to use them. Previously, she had prepared a taxonomy of second language learning strategies which provides a useful overview for this purpose under the heading of vocabulary acquisition she has listed a number of strategies which include keyword method.

2.2. Research on Language Learning Strategies and Strategy Training

The word "strategy" comes from the ancient Greek term "strategia" meaning generalship or the art of war. More specifically, strategy involves the optimal management of troops, ships, or aircraft in a planned campaign. A different, but related, word is "tactics", which are tools to achieve the success of strategies. Many people use these two terms interchangeably. The two expressions share some basic implied characteristics: planning, competition, conscious manipulation, and movement toward a goal. In non-military settings, the strategy concept has been applied to clearly non adversarial situations, where it has come to mean a plan, step, or conscious action toward achievement of an objective (Oxford, 1990).

Oxford (1990:9) also claims that.

> The strategy concept without its aggressive and competitive trappings, has become influential in education, where it has taken on a new meaning and has been transformed into learning strategies. One commonly used technical definition says that learning strategies are operations employed by the learner to aid the acquisition, storage, retrieval and use of information. This definition, while helpful, does not fully convey the excitement or richness of learning strategies. It is useful to expand this definition by saying that learning strategies are specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations. Oxford lists the features of language learning strategies as follows:

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.

In the last few years, research literature on learning strategies has experienced tremendous growth. Interest in learning strategies is due in large part to increased attention to the learner and to learner-centred instructional models of teaching. These trends can be traced to recognition that learning begins with the learner.

Nyikos and Oxford (1993) state that, learning strategy research expands the strategic competence of communicative competence by demonstrating that strategic competence goes beyond mere compensation strategies. Strategic competence fosters competence in grammatical, discourse, sociolinguistic, and psycholinguistic areas. Thus, strategy research permeates all areas of learning, recognising that learning is multidimensional. Teachers of a foreign or second language must understand the types of language learning strategies, learners employ both inside and outside the classroom. Students' beliefs about their own language learning are also crucial because these beliefs directly affect students' motivation to learn a new language and their subsequent use of language learning strategies.

Although limited research on learning strategy instruction in second language context has been conducted, success has been reported in teaching students to apply learning strategies on second language tasks. High school students of French were taught explicit reading strategies through a systematic approach which included identification of strategies, comparison of strategy used in the first and second language practice in applying the strategies to a French text, and student evaluation of the success of the strategy training (Hosenfield, Arnold, Kirchofer, Laciura and Wilson, 1981). English as a second language students were taught learning strategies for several different language tasks, including vocabulary, listening and speaking tasks (O'Malley, Chamot, Stewner-Manzanares, Russo and Kapper, 1985). Results of this study showed that strategy training was particularly beneficial for the speaking task, and to some degree for the listening task, and was helpful on vocabulary task for Hispanic students only. In this ESL study and other investigations of learning strategy training with second and foreign language students, the instruction was provided by the researchers, with limited participation by classroom teachers.

In a subsequent series of foreign language learning strategy studies, teachers participated in the design and implementation of learning strategy instruction. A course development study was conducted in which foreign language teachers participated in selecting the strategies to teach and provided instruction as part of their regular classroom teaching (Chamot and Kupper, 1989). Information from this study was used to design instructional modules for teaching learning strategies for listening, speaking, reading and writing in French, Russian, and Spanish high school classrooms. The modules were developed jointly by researchers and classroom teachers and were then field tested by foreign language teachers who had not previously participated in the foreign language learning studies. Findings from these studies indicated that:

1. Foreign language teachers can implement learning strategy instruction in their classrooms.

2. Support for teachers in the form of workshops and consultation is advisable.

3. Teachers tend to perceive learning strategy instruction as an extra activity rather than as part of their regular instruction.

4. Students enjoy learning strategy activities, but believe they would be more useful if integrated with regular class activities.

5. Students are confused when too many strategies are presented and vary in their preferences to particular strategies.

Cohen and Aphek (1980) used interviews to verify or refute observational data on communication strategies. They found that the best time to interview was soon after the event, rather than interrupting class talk to ask learners what they were thinking. The study resulted in a rating system of "good" and "bad" communication strategies.

Oxford (1993) emphasises that the success of teaching language learning strategies depends upon the integrity of the strategy teaching program and students' attitudes, beliefs and stated needs; that is affective factors should be considered in strategy training. Otherwise the attempt of strategy training would fail. Another thing to be considered is to teach a combination of learning strategies in order to see a raise in proficiency.

Besides, as a result of training, learners become not only more efficient at learning and using their second and foreign language, but also more capable of self-directing these attempts. Thus, strategy training will be effective in improving the performance of student in various tasks. The general objectives of strategy training are to assist making language learning more meaningful, to encourage a collaborative spirit between the learner and the teacher, to learn about choices for language learning and to learn and practice strategies that facilitate self-reliance. However, strategy training should not be abstract or theoretical, but should be highly practical and useful for students. The aim of strategy training should be to show students some ways facilitating learners' learning process (O, Malley 1987).

Henner-Stanchina (cited in Oxford and Crookall, 1989) taught techniques for listening comprehension to university level ESL students. In a single group study, students listened to oral texts, such as radio commercials, talk-show interviews, and news broadcasts - first for global comprehension and then for specific details. They transcribed the texts on paper and were allowed to make corrections as they understood more through repeated playbacks. Henner-Stanchina then provided feedback on errors and successfully taught the students how to use guessing and self-correction to improve listening comprehension.

Another study on strategy training by Chamot and Kupper (1989) also presented a positive change on the proficiency level of the students and resulted in a refinement of the classification system of learning strategies and a conscious use of the strategies taught. The study lasted 3 years aimed to investigate a number of aspects of learning strategies use by foreign language students and their teachers. The project consisted of three studies.

1) A descriptive study, which identified learning strategies used by foreign language learners;

The participants in this study were 67 high school students drawn from first year, third year and a combination fifth/sixth year Spanish classes. Teachers identified effective, average, and ineffective language learners at each level of study, and students at each level of study were interviewed in small groups according to these classifications. The results of the descriptive study indicated that students at higher level

of study reported using, on the average, more strategies than did beginning level students. Students at all levels of study reported using for more cognitive than metacognitive strategies.

2) A longitudinal study which clarified differences in the strategy use between effective and ineffective language learners and the change in strategy use in time;

Participants in the longitudinal study were students who had participated in the descriptive study as either effective or ineffective students (the middle group was not included). In this study, students were interviewed individually and given typical language learning activities to perform. These included filling in the missing words in a cloze activity, reading a passage, listening to a monologue or dialogue, and writing a paragraph about a drawing. Students were asked to think aloud while they worked on the tasks, or to recount their thoughts as they attempted to solve the problem presented.

Findings in the longitudinal study resulted in a refinement of the classification system for learning strategies. Although the three basic categories of metacognitive, cognitive and social-effective strategies remained unchanged, the complex ways in which particular strategies were applied led to additional descriptions of basic strategies used for specific kinds of tasks.

3) A course development study in which foreign language instructors taught students how to apply these learning strategies;

Classroom observations were conducted to four of the instructors, whose students had participated in the descriptive and longitudinal studies, and descriptions were developed of the way in which strategy instruction was presented and practised. Participating instructors selected listening, reading and speaking tasks in which to embed strategy training.

A major instructional implication emerging from the course development study was that learning strategy instruction can be implemented by the foreign language teacher, rather than by researchers exclusively, as had been the case in prior second language learning strategy training studies.

In a cooperative LLS training study of junior high school students learning French, Gunderson and Johnson (cited in Oxford and Crookall, 1989) found that cooperative strategies were developed through a shared task and reward structure. Both learners and teachers were pleased with the cooperative behaviour exhibited by the students, and teachers' roles changed as a result of such cooperation.

Simulations, games, and game-like activities encouraged social strategies among French learners of English in studies by Crookall and Oxford (1989). Learners communicated and cooperated with each other more intensely and for longer periods than in traditional classrooms. Though the use of social strategies was the most obvious result, students also used a wide range of other strategies, including cognitive, affective and compensation strategies. Compared with more traditional exercises, the activities also caused student talk time to increase and teacher talk time to decrease in statistically significant ways. Learners also become more self-sufficient and able to take greater responsibility for their own learning, including conducting their own classes without a teacher present.

After researching the studies on language learning strategies Oxford and Crookall (1989) implied the following points, each representing a piece what we know about language learning strategies in instructional settings:

- The learner is an active and involved participant in the language learning process.
- Language learners at all levels use strategies.
- Some/most learners are relatively unaware of the strategies they use and do not take advantage of the full range of available strategies.
- More proficient learners appear to use a wider range of strategies in a greater number of situations, but the relationship between strategy use and proficiency is complex.
- Many different strategies can be used by good learners: techniques for organising, for focusing and evaluating learning, for handling emotions and attitudes, for cooperating with others in the learning process, for linking new

information with existing schemata, and for directly engaging in learning use.

- Students at higher course levels tend to use strategies somewhat differently from students at lower course levels.
- There is growing evidence of sex and ethnic differences in LLS use.
- Motivation (in both type and intensity) appears to be related to LLS use.
- People with different learning styles or different personalities often use different kinds of strategies.
- Special demands are placed on language learners by new writing systems, sounds, cultural values, and the need for highly "public" language performance in social settings. Different language learners use different strategies in response to these demands.
- Different kinds of strategies often work together for optimal results.
- It is possible and generally advisable to teach learning strategies through "completely informed training", in which learners are taught how and why to use, transfer, and evaluate strategies.
- LLS training must take into account the nature and difficulty of the language tasks involved, as well as aspects of the learner such as sex, cultural/ethnic background, aptitude, and general learning style.
- With students who use highly traditional strategies and are resistant to change, it may be necessary to camouflage new strategies in the guise of old ones.
- LLS training typically is most effective when integrated into regular class activities.
- Teachers generally do not know which strategies their students are using unless they conduct some kind of formal or informal research.

2.3. Research on Vocabulary Learning Strategies and Strategy Training in Vocabulary Teaching

Papalia and Zampagna (cited in Oxford and Crookal, 1989) interviewed high school foreign language students to examine their reading comprehension and vocabulary learning strategies. The language learning strategies which helped comprehension included reading aloud, reading for context, guessing, looking for cognates, and looking up unfamiliar words. Successful vocabulary related strategies included cooperative learning, concrete action words, flashcards, meaningful conversation, games, pictures and repetition.

Cohen and Aphek (1980) explored language learning strategies used by English-speaking college students learning Hebrew in Israel. Students took unstructured notes on the language learning strategies used during a vocabulary learning task. Notes indicated that word lists were initially helpful for memorisation but that students eventually used words in context. Mnemonic devices sometimes slowed learning down or limited possible meanings, but also made learning easier and helped maintain vocabulary.

Nyikos (1987) conducted a controlled, university-level language learning strategies training study using three treatment conditions and a comparison condition. She studied the use of associative memory strategies for learning German noun clusters. Students in the three treatment conditions received written instructions and examples for using three different kinds of kinds of memory strategies, one per condition:

1) The color-only group associated certain colors with grammatical gender of each noun cluster to be learned.

2) The picture-only group associated each item with a drawing.

3) The multiple association or color-plus-picture condition used a combination strategy involved a color-coded drawing.

Students in the control condition received no language learning strategies instruction. Clear sex differences emerged, men outscored women in the color-plus-picture condition, while women did better than men in both the picture-only and the color-only conditions. The control condition showed no advantage over any of the

treatment conditions. Nyikos explained the findings in terms of cultural and social expectations of men and women and in terms of physiological differences.

Sutter (cited in Oxford and Crookal, 1989) conducted language learning strategies training of refugees learning Danish as a second language. He found that initial strategy preferences were related to ethnic and personal biases, and were influential in the degree of success of language learning strategies training. If the new strategies were completely opposed to the learners' preferences, learners resisted the training and disaster resulted. It was sometimes necessary to camouflage new strategies under the guise of familiar techniques. For instance, students' desire to make word lists (their preferred strategy) was channelled into the creation of a dictionary, which was done cooperatively (a camouflaged social strategy that facilitated the preferred technique and was therefore non-threatening). Camouflaging of strategies is very different from "completely informed training" that most language learning strategies trainers espouse, but here it proved useful for some learners who were resistant to innovative techniques. Interestingly, the longer students spent in a particular language program, the more they tended to value its teaching practices.

2.4. Memory Strategies

Memory strategies fall into four sets: Creating mental linkages, applying images and sounds, reviewing well and employing action. Memory strategies are clearly more effective when the learner simultaneously uses metacognitive strategies, like paying attention, and affective strategies, like reducing anxiety through deep breathing. Memory strategies reflect very simple principles, such as arranging things in order, making associations, and reviewing. The principles all involve meaning. For the purpose of learning a new language, the arrangement and associations must be personally meaningful to the learner, and the material to be reviewed must have significance (Oxford, 1990).

Oxford (1990:40) also states that;

> While many language learners benefit from visual imagery, others have aural (sound-oriented), kinesthetic (motion-oriented) or tactile (touch-oriented) learning style preferences and therefore benefit from linking verbal material with sound, motion or touch. Certain memory strategies are

designed to do this. In memory strategies, as in other kinds of learning strategies, "different strokes for different folks" should be the cardinal rule.

Although memory strategies can be powerful contributors to language learning, some research shows that language students rarely report using these strategies. It might be that students simply do not use memory strategies very much, especially beyond elementary levels of language learning. However, an alternative explanation might be that they are unaware of how often they actually do employ memory strategies.

Oxford gives the definitions of memory strategies as follows:

Creating Mental Linkages

1. Grouping

Classifying or reclassifying language material into meaningful units, either mentally or in writing, to make the material easier to remember by reducing the number of discrete elements. Groups can be based 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, tepid, tropical), dissimilarity or opposition (e.g., friendly/unfriendly), the way one feels about something (e.g., like, dislike), and so on. The power of this strategy may be enhanced by labelling the groups, using acronyms to remember the groups, or using different colors to represent different groups.

2. Associating/Elaborating

Relating new language information to concepts already in memory, or relating on piece of information to another, to create associations in memory. These associations can be simple or complex, mundane or strange, but they must be meaningful to the learner. Associations can be between two things, such as bread and butter, or they can be in the form of a multipart "development", such as school-book-paper-tree-country-earth. They can also be part of a network, such as a semantic map.

3. Placing New Words into a Context

Placing a word or phrase in a meaningful sentence, conversation, or story in order to remember it. This strategy involves a form of associating/elaborating, in which the new information is linked with a context. This strategy is not the same as guessing

intelligently, a set of compensation strategies which involve using all possible clues, including the context, to guess the meaning.

Applying Images and Sounds

1. Using Imagery

Relating new language information to concepts in memory by means of meaningful visual imagery, either in the mind or in an actual drawing. The image can be a picture of an object, a set of locations for remembering a sequence of words or expressions, or a mental representation of the letters of a word. This strategy can be used to remember abstract words by associating such words with a visual symbol or a picture of a concrete object.

2. Semantic Mapping

Making an arrangement of words into a picture, which has a key concept at the center or at the top, and related words and concepts linked with the key concept by means of lines or arrows. This strategy involves meaningful imagery, grouping, and associations; it visually shows how certain groups of words relate to each other.

3. Using Keywords

Remembering a new word by using auditory and visual links. The first step is to identify a familiar word in one's own language that sounds like the new word - this is the "auditory link". The second step is to generate an image of some relationship between the new word and a familiar one - this is the "visual link". Both links must be meaningful to the learner. For example, to learn the new French word potage (soup), the English speaker associates it with a pot and then pictures a pot full of potage. To use a keyword to remember something abstract, such as a name, associate it with a picture of something concrete that sounds like the new word. For example, Minnesota can be remembered by the image of a mini soda.

4. Representing Sounds in Memory

Remembering new language information according to its sound. This is a broad strategy that can use any number of techniques, all of which create a meaningful, sound-based association between the new material and already known material. For instance, you can (a) link a target language word with any other word (in any language) that

sounds like the target language word, such as Russian brat (brother) and English brat (annoying person), (b) use phonetic spelling and/or accent marks, or (c) use rhymes to remember a word.

Reviewing Well

1. Structured Reviewing

Reviewing in carefully spaced intervals, at first close together and then more widely spaced apart. This strategy might start, for example, with a review 10 minutes after the initial learning, then 20 minutes later, an hour or two later, a day later, 2 days later, a week later, and so on. This is sometimes called "spiralling", because the learner keeps spiralling back to what has already been learned at the same time that he or she is learning new information. The goal is "overlearning" - that is, being so familiar with the information that it becomes natural and automatic.

Employing Action

The two strategies in this set, using physical response or sensation and using mechanical tricks, both involve some kind of meaningful movement or action. These strategies will appeal to learners who enjoy the kinaesthetic or tactile modes of learning.

1. Using Physical Response or Sensation

Physically acting out a new expression (e.g., going to the door), or meaningfully relating a new expression to a physical feeling or sensation (e.g., warmth).

2. Using Mechanical Techniques

Using creative but tangible techniques, especially involving moving or changing something which is concrete, in order to remember new target language information. Examples are writing words on cards and moving cards from one stack to another when a word is learned, and putting different types of material in separate sections of a language learning notebook.

Learners can use memory strategies to retrieve target language information quickly, so that this information can be employed for communication involving any of the four language skills. The same mechanism that was initially used for getting the information into memory can be used later on for recalling the information. Just

thinking of the learner's original image, sound and image combination, action, sensation, association, or grouping can rapidly retrieve the needed information, particularly if the learner has taken the time to review the material in a structured way after the initial encounter. Memory strategies are valuable for storing and retrieving new information in the target language (Oxford, 1990).

2.5. Research on Keyword Strategies

2.5.1. Immediate and Delayed Effects of the Keyword Method

Wang, Thomas and Quelette (1992) compared the keyword method and rote rehearsal strategies in four experiments to measure immediate and delayed definition recall with different results. Subjects were students of psychology courses at a university in the United States. The variables of learning condition were keyword versus rote rehearsal and retention interval were immediate versus 1 week delay. Both factors were manipulated between subjects. The vocabulary list was composed of 22 French nouns and their English equivalents. For each French word, an English keyword was chosen on the basis of its capacity to be imaged and its similarity in either sound or appearance to the French word. The students of keyword group were told that first they would be taught to associate each French word with a sound-alike keyword. After they learned these well, they would be provided with the English equivalents of the French words. At that time, they were to visualise an interactive image involving both the keyword and the English equivalent. Each subject was then given a study booklet. On the first page, the 22 French words and their keywords were listed. Subjects were told to follow along as long as they heard each French word and keyword pronounced. They then turned to the second page on which the same French words and their keywords were printed, in a different random order. Again the subjects heard each pair pronounced. The procedure was followed for two additional list presentations. Next, the subjects were told that they would be given the English equivalents of the French words. They were reminded of how to use the keyword method and of the importance of creating interactive images. They were then presented with each French word, its

keyword and the English equivalent. They were allowed 10 seconds to study each item and the list was shown twice in two different presentation orders.

Students in the rote rehearsal condition heard the list of French words pronounced four times at a 2second rate. As did the keyword learners, these subjects followed the lists in their test booklets, but only the French words were given. Next, they were given 10s to study each French word and English equivalent. The entire list was presented twice, and the word pairs were printed in the test booklets. The subject were instructed to copy the English translation five times in a blank provided beside each word pair.

After executing a backward counting task for 30 seconds, those subjects in the immediate testing condition were given a cued recall test for the English equivalents of the French words. The subject then had 10 seconds to write the English equivalent next to the French word in a test booklet. Keyword subjects were also asked to write the keyword in parenthesis. Immediately after the study trials, the delay groups were given a test of general knowledge for factual material, which took about 5 min. Then they were given a brief questionnaire asking them to rate their reactions to the study method they had used. Subjects were then dismissed and asked to return 1 week later. When they returned after 1 week, they were given the cued recall test. The keyword group scored better on the immediate test. However, the keyword learners actually forgot information at a faster rate than subjects in the rote rehearsal control groups for the delayed test. Information loss for the keywords groups was great in the delayed exam.

Doğan (1995), studied the effect of Mnemonic Keyword Method not only on recalling the pronunciations and Turkish equivalencies of Latin-Greek origin morphemes but also recalling and simultaneously interpreting the sentences in which terms produced by the combination of such morphemes occur; transfer and retention effects were searched additionally. The subjects of the research were 40 students who were attending H.U. Faculty of Letters, Department of Translation and Interpretation and taking the Simultaneous Interpretation course.

The control group was treated by the conventional method and the experimental group by Mnemonic Keyword method. The difference was in how the information was conveyed through the slides. On the slides of the control group were only written the

morphemes themselves and their Turkish equivalencies. On the slides of the experimental group appeared not only the morphemes themselves and their Turkish equivalencies but the related sound associative expressions that remind the acoustic features of the morphemes and caricaturewise drawings, that bridge between the morphemes and their Turkish equivalencies as well.

The results indicated that Mnemonic Keyword Method was highly effective not only in recalling the Turkish equivalencies of the morphemes and the sentences involving the terms made up of these morphemes but also in interpreting these sentences simultaneously; yet it was not significantly effective in the morpheme pronunciation task.

Pressley, Levin, Kuiper, Bryant and Michaner (1982) compared the keyword method of vocabulary learning with five methods designed to increase semantic processing of the definitions of the vocabulary words. Experiment 1 included conditions in which subjects were instructed either to use an imagery or a sentence version of the keyword method. In addition three conditions were designed to capture semantic processing conditions (A semantic strategy attempts to enhance the meaningfulness, familiarity or contextual associations of the vocabulary items and their definitions by relating them one's prior knowledge and conceptual network). In the imagery condition, the subjects were instructed to construct an image of the meaning referent. In the synonym condition, subjects were instructed to think of a synonym for each of the vocabulary words. A read and copy condition was also included, as was a no strategy control condition. In addition to the keyword imagery, and no strategy control conditions of Experiment 1, Experiment 2 included two imagery self-referent conditions. In one, subjects were asked to imagine an example of the meaning referent with which they were personally familiar. In the other condition they were asked to imagine themselves interacting with the meaning referent, again including an example of the referent with which they were familiar. The experiment also included two imagery keyword conditions that incorporated self-referent components. In one condition, subjects were instructed to think of an interaction between the keyword and definition referents that was personally meaningful to them. In the other, they were instructed to construct an interactive image involving the keyword and definition referents, as well as themselves. In Experiment 3, the vocabulary learning of keyword,

imagery subjects was compared to that of subjects presented with the vocabulary words along with a variety of adjunct materials, all of which are recommended as useful vocabulary learning supplements by reading theorists. In particular, subjects in this multiple context condition were shown words, and related to the vocabulary words, and depictions of the meanings of the vocabulary words Experiment 4, included four of the conditions of Experiment 1 (keyword imagery, imagery, synonym and no-strategy control). However, instead of recalling definitions in response to vocabulary items, subjects were provided all of the vocabulary words and definitions at testing and were required to match them. In experiment 5, two measures of response learning were taken. The first measure simply required the subjects to recall the definitions that were provided on the study lists; that is, subjects were told to recall as many of the definitions as they could without the presentation of the vocabulary words as cues.

The keyword method proved superior to every alternative considered, when the provision of definitions in response to vocabulary words was the dependent variable. A residual product of these comparisons was the finding that none of the alternative procedures produced associative learning superior to no-strategy control instructions. The keyword model implies that the keyword definition interactive link will promote learning of that association and information that can be directly accessed using that linkage. The data of the experiments bolster that the keyword linkage is critical to enhanced recall of definitions from vocabulary items. The imagery, synonym, imagery-familiar, imagery-self, and multiple-context conditions were all directed at increasing the processing of what the words meant, without regard to building a mnemonic bridge between the vocabulary words and their definitions. The finding that none of these methods produced associative learning superior to that of control subjects emphasises that the focus of vocabulary learning should not be on meaningful processing of the definitions only. Increased semantic processing of definitions does not strengthen the association between a vocabulary word and its definition. On the other hand, encoding meaningful interactions between a vocabulary word proxy (i.e. a keyword) and the definition does strengthen that association.

2.5.2. Effects of the Keyword Method on Recognition

Most studies of the keyword method have looked at its effect on the recall of target vocabulary items. Yaylı (1995), studied on the immediate and delayed effects of two types of keyword vocabulary learning methods (teacher provided and student-generated) compared to rote rehearsal on recall and recognition of vocabulary items of Turkish college students at a Turkish university. The experiment was conducted in three intact classes at Middle East Technical University.

Research focused on the differences, if any, among the three groups in terms of recall and recognition of vocabulary items, as well as the differences, if any, with respect to retention of the learned vocabulary after treatment. Before the treatment, each group was given a pre-test, and the same pre-test was given as a post test immediately after treatment to test immediate recall and recognition. To measure long-term retention, that is delayed recall and recognition, the same test was given to the three groups after two weeks.

Findings suggest that the keyword strategy, whether provided by the teacher or generated by the students, is not superior to rote rehearsal for either recall or recognition at immediate or delayed testing in university classroom conditions.

The effects of the keyword method, semantic processing method and a combined keyword-semantic method were compared to observe their effects on immediate and delayed recall and recognition of vocabulary items by Brown and Perry (1991) in actual classroom settings (Most keyword studies have been done in laboratory settings). The main emphasis in the semantic processing method is on the semantic association between the new word and its definition. Anything which ties the meaning of the new word into existing knowledge structures is semantic processing. For the experiment, six intact classes form the English Language Institute at the American University of Cairo were chosen. Three classes were lower-level and three classes were upper-level with each class at a level receiving one of the three methods: keyword only, semantic only, and combined keyword-semantic. The target vocabulary items were 40 unfamiliar nouns and verbs mostly from textbooks. Both keyword classes at each level were provided with the new word, its definition and an Arabic keyword. Semantic classes were given the new word, its definition, two examples of the word's use in

sentences, and a question which they were required to answer by using the new word. The combined keyword-semantic classes received the new word, its definition, the keyword, and example sentences and question. The students in each class received a day of instruction about their methods, and they practised the methods the next day. The day after the instruction, to measure vocabulary recall, subjects were asked to write the English definition of each word listed on the test paper. For recognition, a four choice multiple choice test was constructed. The results of recognition and recall tests indicated that the combined keyword-semantic method provided more retention than the other strategies. That is, retention was aided by the combined keyword-semantic method for both recognition and recall of target vocabulary items. The keyword method alone was better than the semantic method for only lower proficiency students. For the upper level group, the semantic processing method was better than the keyword method alone.

2.5.3. Presentation Conditions

Hall (1988), examined the use of the keyword mnemonic for vocabulary learning by university students given extensive keyword training. The subjects studied and recalled the English equivalents of German nouns both before and after mnemonic training under different presentation conditions. On each occasion one list was presented one time at a 10-s rate (the 1x10 condition) and the other list was shown four times at a 2.5-s rate (the 4x2.5 condition). In the interest of generalizability to typical nonlaboratory vocabulary-learning circumstances, keywords were not supplied the subjects, and the items, German-English nouns, were selected without regard to the ease with which keywords might be identified. To ensure that the full potential of the keyword method was realised, the subjects were given multiple training sessions spaced over a period of 4 weeks. The training consisted of reading, demonstrations, and practice in the implementation of several mnemonic techniques and especially the keyword method for vocabulary learning.

The relation between learning and extend of keyword use after training was null. Posttraining performance was slightly higher with fast than with slow presentation, despite markedly less use of the keyword mnemonic with the faster rates. Posttraining performance in the condition in which the keyword method was most heavily used, the

1x10 condition, was only slightly and nonsignificantly higher than in the 4x2.5 condition before training. Learning was better after training, especially in the 1x10 condition; subjects reported difficulty using the keyword mnemonic in the 4x2.5 condition despite higher learning scores in that condition after training. In summary, the keyword mnemonic seems to be most effective when it is used selectively and in conjunctions with several list presentations at moderate rates.

2.5.4. Classroom Conditions

Troutt-Ervin (1990), applied keyword method to the college classroom to teach medical terminology. Subjects were college undergraduate students ranging in age from 17 to 26. The subjects were placed into three intact classes of an introductory course in medical terminology. Group 1 was assigned the traditional method of instruction; Group 2 was taught by means of the classroom-type keyword method; and in Group 3, an individualised learning approach was used in application of keyword method. Instruction for all three groups, was presented over two consecutive classroom periods of 50 minutes each. Each period began with a 5-minute pre-test of 10 medical words composed of 20 word parts; the teaching method being applied in the particular group was then discussed for 5 minutes; the next 25 minutes were used in teaching 25 medical word parts, followed by a 5-minute study; period; finally a 5-minute post-test of the 25 word parts was administered.

Results indicated that medical terminology students scored significantly higher with the keyword method than with a traditional method in both initial learning and retention of medical definitions for as long as 8 weeks. The keyword method was applied in both a conventional classroom setting and individualised learning, and it proved equally effective in both.

2.5.5.Effects on Recall and Comprehension

Mastropieri, Scruggs and Fulk (1990), studied the effects of keyword method in recall and comprehension. Twenty-five adolescents with learning disabilities were randomly assigned to either a keyword mnemonic condition or an experimenter-directed

rehearsal condition and were individually taught. Two tests were constructed for this investigation. One was a literally recall test, where students were asked to produce orally the definition of each vocabulary word. The second test was a comprehension test, in which students were asked, in a matching format, to provide the appropriate vocabulary word, given a novel instance of the word.

Keyword students were first taught keywords for the two practice examples. They were then shown the mnemonic pictures for each new vocabulary word. After the practice examples had been shown, the students were given a practice production test and comprehension test on the items. Following the practice test, students were taught the keywords and shown the 16 target vocabulary words, presented in a randomised order. Students were shown each picture for 30 seconds while the experimenter described the keyword and the pictorial strategy. Again, students were asked to provide the definition of each new vocabulary word once and to describe the interactive picture, students were given the production recall test, followed by the comprehension test.

In rehearsal condition, students were individually taught the two practice examples using the labelled pictures and procedures. Following the practice test, the students received brief preview of the target vocabulary words, during which the practised pronunciation the words students were then given instruction in the 16 vocabulary words, using experimenter-led drill and practice, rapid-paced questioning and corrective feedback.

Results indicated that mnemonically trained students outperformed control students on both abstract and concrete words, and on recall tests as well as on comprehension tests.

Little research has integrated the effects of experimenter-provided keyword method, in which the keywords were supplied by the experimenter and the links between the keyword and the pictorial image were given, on comprehension of vocabulary items. Moreover, researchers have not studied enough, experimenter-provided keyword method in classroom conditions. Thus, this study investigated the effects of the experimenter provided keyword method on immediate and delayed comprehension of vocabulary through a multiple choice and a fill-in-the-blank type of vocabulary exam as well as recall of vocabulary in a Turkish EFL classroom.

3. METHODOLOGY

3.1. Subjects

Subjects in this study were 40 academic staff at Anadolu University who were getting an intensive English course in order to take a proficiency exam (KPDS). Two intermediate-level classes were used. One group was the experimental group and the other was the control group. Subjects were not randomly assigned to the two groups because it was impossible to change the present structure of the classes due to administrative constraints. There were 20 examinees in each group. The examinees studied English 28 hours a week during the programme (12 hours grammar, 8 hours reading, 6 hours speaking-listening, 2 hours computer-assisted English). They didn't have vocabulary as a separate course. They were taught vocabulary as a part of reading course. Their academic background were mixed (both from social sciences and physical sciences).

3.2. Research Design

In this experimental study, the aim was to reveal whether experimenter-provided keyword method is more effective on vocabulary recall and comprehension than the method which is used in the programme. For this reason, experimental group received treatment in the experimenter-provided keyword method; and the control group was given no information on the keyword method but taught by the method in which students first are given a vocabulary list and asked to use the rote rehearsal technique. Later, vocabulary words were studied by means of fill in the blank exercises, and by synonym and antonym exercises.

Before giving the pre-test, students were informed about the experiment that would be conducted in their classrooms and their participation was asked for. They were asked to participate in an experiment "about vocabulary learning" and the importance of vocabulary for KPDS was emphasised to both groups. The control group was told that they would be taught some vocabulary which might be asked in the proficiency exam that they would take. Both groups agreed to participate.

3.2.1. Instrument/Material

3.2.1.1. Instructional Material

The 30 target vocabulary items were selected according to the following criteria:

1. The words were nouns, adjectives, and verbs (10 nouns, 10 adjectives, 10 verbs). The reason for choosing three different word classes was that the vocabulary sections of the tests such as TOEFL and KPDS include different types of word classes.

2. There were concrete and abstract Turkish keywords available for the English word.

3. The English word was not similar in sound or spelling to its Turkish translation and cognates were avoided.

For the keyword group the pictorial images for the chosen words were used. The English word and the Turkish keyword were presented at the top of the pictorial images.

For the control group a list of 30 vocabulary words was used to teach these words. Then, fill-in-the-blank, synonym and antonym exercises were given to the students.

3.2.1.2. Testing Material

At the beginning of the experiment, a vocabulary test consisting of 90 words was given to both groups and they were asked to write the meanings of these words (in English or Turkish). According to the results, 30 words of which none of the students knew the meaning were chosen. The other 60 words of which the meanings were known by the students were eliminated. With the 30 words chosen, one set of testing material which contains a vocabulary recall and a comprehension test was developed. There were two sections in the comprehension test; a multiple choice type and a fill-in-the-blank type. This test was used as pre-test, immediate post-test and delayed test. Words were presented in a different order each time the test was given in order to avoid memorisation effect. The recall part of the test (see Appendix A) was a list of the 30 target vocabulary items and students were asked to write the Turkish equivalent for each

word. There are some other ways to measure recall such as; interviews, oral testing, diary studies, think-aloud interviews, etc. But the experimenter chose this one for this study. Since, the students were in an intensive course programme, the other ways to measure recall could take much more time. The comprehension part of the tests (see Appendix B, C) were taken from KPDS and TOEFL preparation books. The first part of the comprehension test was a multiple choice exam to test the same 30 words that were studied by the students. The distractors were chosen among the words taught. Using distractors outside the target vocabulary items could have helped the students eliminate them easily because they had not studied those items in the treatment session. In the second part of the comprehension test, the students filled in the blanks using one of the seven words given in the boxes. To score the tests, each correct answer in the recall part and each correct answer in the comprehension part was given 1 point. The highest possible score for recall test was 30. The highest possible score for the comprehension test as a whole was 60 and it was 30 for each part of the comprehension test (Multiple choice – Fill-in-the blank).

The pre-test aimed at measuring the existing comprehension of the 30 target vocabulary items in order to be able to control for pre-existing differences. The immediate post-test intended to measure immediate recall and comprehension of the vocabulary items directly after the treatment. The delayed (long term retention) test was administered to measure 3-week retention of the target vocabulary items both for recall and comprehension.

3.2.2. Data Collection Procedures

3.2.2.1. Pre-test

A test before the vocabulary recall pre-test including 90 words was given to the students to eliminate the words that were not known by the students. 60 vocabulary words were eliminated and remaining 30 vocabulary words were used as a vocabulary pre-test. The pre-test which contains a vocabulary recall test, and two parts of vocabulary comprehension test was given to the two groups on the same day by the experimenter.

3.2.2.2. Presentation of the Method

Just after the pre-test, on the same day, the experimental group was told that they were going to learn a new method in learning vocabulary. The keyword method was presented by the experimenter just before the treatment, in order to teach them about the keyword method and how to set up the necessary associations. For the experimental group, two examples were first presented. Students were first shown the English word, then its Turkish keyword, which was on the top of the pictures. The pictures were shown on the overhead projector. Then, the imagery link between the keyword, English word and the visual image was given to the students. The examples were not used in the treatment. The presentation of the method for the experimental group lasted 15 minutes. The aim of this presentation was to teach the students how to create the imagery link between the visual image, the keyword and the meaning of the word. There was not a presentation for the control group. They were told that the vocabulary words they would learn during the treatment could be useful for the KPDS examination.

3.2.2.3. Treatment

In the treatment session, the experimenter provided keyword group was shown 30 pictures in 6 sessions. In each session, first, the target vocabulary and its keyword were shown which were written on the top of the pictures of images by an overhead projector. The link between the target vocabulary word, the keyword and pictures were given by short dialogues or sentences which were found in the pictures. The experimenter also helped students to create a visual image in their minds by telling the story of each picture and dialogues before they were shown. Every session lasted 10 minutes; 5 target vocabulary words, their keywords and the pictorial visual image was given (1 min for each word) in each session. After the presentation of 30 target words, the treatment was repeated in the same way. The same 30 words and their pictorial images were presented once more and the same procedure was followed during the second presentation.

The control group was first given the list of the target vocabulary words. Then they were asked to find the Turkish meanings of these words. The Turkish meanings

that the students found was checked by the examiner and repeated in the classroom. Second, fill-in-the-blank, synonym and antonym exercises were given to the students by the experimenter. The exercises were studied in the classroom with the students together. The total study period for each group was the same (120 mins. for each group).

3.2.2.4. Immediate and Long Term Tests

The study session was followed by an immediate vocabulary recall and vocabulary comprehension tests. The same test was again given to the three groups after three weeks to measure long term retention. The treatment and the tests were given in the classrooms of the students which they were taught during the programme.

3.3. Data Analysis

First of all, the pre-test scores of both experimental and control groups were compared to see if both groups were the same when the study started.

Secondly, the post-test scores of both groups were compared to see whether the treatment led a difference in immediate vocabulary learning. Then the scores of the delayed tests were compared with the post-test scores to measure retention of the vocabulary items. The raw scores were subjected to t-test for independent samples to reveal whether there was any statistically significant difference between the groups in terms of both immediate vocabulary learning and retention. We also looked at the difference within the groups to see whether there was a significant difference within each group. As a result of the study, the pre-test and post-test scores of each group were analysed by means of t-test for dependent samples.

4. RESULTS AND DISCUSSION

The results obtained from two groups were analysed through two types of t-tests for the pre and post tests; t-test for dependent samples for the differences between pre and post tests within groups and t-test for independent samples to reveal whether there was a difference between the experimental and the control group in order to reveal whether the keyword method was effective or not.

4.1. Vocabulary Recall Pre-test

90 vocabulary target words were given in three lists (30 each) to the both groups and the students were asked to write the meanings of the words. The vocabulary words which the meanings were known by the students were eliminated. The remaining 30 target vocabulary words were used as the vocabulary recall pre-test. The meanings of these 30 words were not known by the students. Thus, the overall mean was 0.00 for both experimental and control groups for the vocabulary recall pre-test. Finally, there was no significant difference between two groups.

4.2. Vocabulary Comprehension Pre-test

The vocabulary comprehension pre-tests was administered to both groups to determine whether there was a significant difference between two groups before the treatment. The mean values for both groups are shown in Table 4.1.

Table 4.1 The Mean Scores of Comprehension Pretest

	n	mean	mean difference	t	p	df
Control group	20	9.1				
			0.3	-0.88	0.38	38
Experimental group	20	8.8				

at 0.05 level of significance

When we look at the results of the vocabulary comprehension pre-tests of the experimental and control group, we see that the mean score of the experimental group was 8.8 and the mean score of the control group was 9.1 (Table 4.1). The highest score in the experimental group was 11 out of 60 and the lowest score was 6. The top score was considered as 60 when both types of comprehension tests were taken into consideration. There were 30 items in the first part and 30 items in the second part. In the control group, the highest score was 11 out of 60 and the lowest score was 7.

There were two sections in the comprehension test. The first one was a multiple choice test. In the second one, the students were to fill in the blanks choosing the appropriate word from the given list. Now, we look at the results of these sections separately

We first look at the results of the multiple-choice comprehension pre-test.

Table 4.2 Mean Scores of the Multiple-Choice Type Comprehension Pretest

	n	mean	mean difference	t	p	df
Control group	20	4.9				
			0.1	-0.29	0.76	38
Experimental group	20	4.8				

at 0.05 level of significance

The highest score for the multiple choice type comprehension pre-test was 7 out of 30 for the experimental group and 6 out of 30 for the control group. The lowest scores were 2 out of 30 for the experimental group and 3 out of 30 for the control group. The mean score of the experimental group was 4.8 and of the control group was 4.9. The statistical analysis revealed that there was not a statistically significant difference between the control group and the experimental group (t=-0.29, df=38, p=0.76) (Table 4.2).

We next look at the results of fill-in-the-blank type of comprehension pre-test.

Table 4.3 Mean Scores of the Fill-in-the Blank Type Vocabulary Comprehension Pretest

	n	mean	mean difference	t	p	df
Control group	20	4.2				
			0.2	-0.86	0.39	38
Experimental group	20	4				

at 0.05 level of significance

The highest score for the fill-in-the-blank type comprehension pre-test was 6 out of 30 for the experimental group and 7 out of 30 for the control group. The lowest scores were 3 out of 30 for both the experimental and the control groups. The mean score was 4.2 for the experimental group and 4 for the control group. There was not a statistically significant difference between the experimental and the control group in this type of test, either (t= -0.86, df=38, p=0.39) (Table 4.3).

Thus the pre-test results showed that both groups were at the same level when the study started.

4.3. The Vocabulary Recall Post-test

The overall mean of vocabulary recall pre-test for both groups was 0.00 according to the 30 remaining unknown vocabulary words from the first given list. These 30 words were used as a pre-test. The same test used as the pre-test was administered at the end of the treatment session to determine the improvement of the subjects in vocabulary recall and to determine if there was a significant difference between two groups after the treatment.

Table 4.4 Mean Scores of the Vocabulary Recall as Posttest

	n	mean	mean difference	t	p	df
Control group	20	14.9				
			11.1	8.25	0.001	38
Experimental group	20	26				

at 0.05 level of significance

The highest score was 30 out of 30 for the experimental group in the recall post-test. 4 students could recall all of the words correctly in the experimental group. In the control group, the highest score was 22 out of 30. That is, unlike in the experimental group, none of the students could recall all 30 words correctly in the vocabulary recall post-test.

The lowest score was 15 out of 30 for the experimental group and 7 out of 30 for the control group. The lowest score in the experimental group is quite higher than the lowest score in the control group.

The mean value for the control group was 14.9, and for the experimental group was 26 with a 11.1 mean difference (Table 4.4). The mean score was higher for the experimental group than that of the control group. The results indicated that there was a significant difference between two groups (t=8.25, df=38, p=0.001). That is, the experimental group was more successful in the vocabulary recall post-test than the control group.

4.4. The Vocabulary Comprehension Post-test

The same tests used as pre-tests were administered as post-tests at the end of the treatment session to determine the improvement of the subjects in vocabulary comprehension and to determine if there were significant differences between two groups after the treatment.

Table 4.5 Mean Scores of the Vocabulary Comprehension Posttest

	n	mean	mean difference	t	p	df
Control group	20	37.5				
			6.5	2.79	0.01	38
Experimental group	20	31				

at 0.05 level of significance

We first looked at the vocabulary comprehension post-test as a whole. Table 4.5 shows the mean scores of the vocabulary comprehension post-test. In this test, the highest score of the experimental group was 52 out of 60 and, 43 out of 60 for the control group. The lowest scores were 24 and 22 respectively. The mean score for the control group was 37.5 and for the experimental group 31 (Table 4.5). In terms of vocabulary comprehension post-test, there was a statistically significant difference between two groups (t=2.79, df=38, p=0.01).

Then, as we did in the pre-test, we analysed the two sections of the comprehension test, which are multiple choice type and fill-in-the-blank type tests, separately. Table 4.6 shows the mean scores of multiple choice type comprehension post-test.

Table 4.6 Mean Scores of the Multiple-Choice Type Comprehension Posttest

	n	mean	mean difference	t	p	df
Control group	20	19.2				
			2.9	2.39	0.02	38
Experimental group	20	22.1				

at 0.05 level of significance

The highest score for the multiple choice type comprehension post-test was 29 out of 30 for the experimental group and 24 out of 30 for the control group. The lowest score was 14 for both groups. The mean score of the experimental group was 22.1 and of the control group was 19.2 (Table 4.6). The statistical analysis revealed that there

was a statistically significant difference between the control group and the experimental group (t=2.39, df=38, p=0.02).

Table 4.7 shows the mean scores of fill-in-the-blank type comprehension post-test.

Table 4.7 Mean Scores of the Fill-in-The Blank Type Comprehension Posttest

	n	mean	mean difference	t	p	df
Control group	20	11.8				
			3.3	2.58	0.01	38
Experimental group	20	15.1				

at 0.05 level of significance

The highest score for the fill-in-the-blank type comprehension post-test was 23 out of 30 for the experimental group and 20 out of 30 for the control group. The lowest scores were 10 and 5 respectively. The mean score of the experimental group was 15.1 and the mean score of the control group was 11.8. The statistical analysis revealed that there was a statistically significant difference between the control group and the experimental group (t=2.58, df=38, p=0.01) (Table 4.7). The experimental group scored better than the control group in both types of tests in terms of vocabulary comprehension.

However, when the mean scores of fill-in-the-blank type and multiple choice type comprehension tests were compared, we see that the mean scores of fill-in-the-blank type comprehension post-test is lower than the multiple choice type in both groups. That is, whichever method they are taught with, they are more successful in multiple choice type comprehension test.

4.5. Differences Between Pre-test and Post-test Scores Within the Groups

After comparing the results of the experimental group, we looked into the differences between pre-test and post-test scores within the groups.

4.5.1. Differences Between Pre-test and Post-test Scores of the Experimental Group

Table 4.8 The Difference Between Pre-test and Post-test Scores in Recall Test (Experimental Group)

Experimental group	n	mean	mean difference	t	p	df
Pre-test	20	0.00				
			26	17.4	0.001	19
Post-test	20	26				

at 0.05 level of significance

The mean score was 0.00 for the recall pre-test and it increased to 26. The difference between pre-and-post-test scores was statistically significant for the vocabulary recall test. This difference suggest that the experimental group improved significantly (t=17.4, df=19, p=0.001) (Table 4.8).

After looking into the differences between pre-test and post-test scores of vocabulary recall test, we analysed the differences between pre-test and post-test scores of the comprehension test as a whole for the experimental group. The results are shown in Table 4.9.

Table 4.9 The Difference Between Pretest and Posttest Scores in Comprehension Test (Experimental Group)

Experimental group	n	mean	mean difference	t	p	df
Pre-test	20	8.8				
			28.7	16.62	0.001	19
Post-test	20	37.5				

at 0.05 level of significance

The mean score was 8.8 in the vocabulary comprehension pre-test and it increased to 37.5 in the post-test with a 28.7 mean difference for the experimental group. The statistical analysis suggests that the experimental group improved significantly in terms of vocabulary comprehension (t=16.62, df=19, p=0.001) (Table 4.9).

Then, we analysed the two sections of the comprehension test, which are multiple choice type and fill-in-the-blank type tests, separately. Table 4.10 shows the differences between pre-test and post-test scores of multiple choice type comprehension test for the experimental group.

Table 4.10 The Difference Between Pretest and Posttest Scores in Multiple Choice Type Comprehension Test

Experimental group	n	mean	mean difference	t	p	df
Pre-test	20	4.8				
			17.3	17.91	0.001	19
Post-test	20	22.1				

at 0.05 level of significance

The mean score for the multiple choice type comprehension pre-test was 48 out of 30 and it increased to 22.1 with a 17.3 mean difference. The difference between pre- and post-test scores was statistically significant. This difference suggests that the experimental group got better scores after the treatment in the multiple choice type comprehension test (t=17.91, df=19, p=0.001) (Table 4.10).

After analysing the differences for the multiple choice type comprehension test, we looked into the differences between pre-test and post-test scores of the fill-in-the-blank type comprehension test for the experimental group. The results are shown in Table 4.11.

Table 4.11 The Difference Between Pretest and Posttest Scores in Fill-in-the Blank Type Comprehension Test

Experimental group	n	mean	mean difference	t	p	df
Pre-test	20	4				
			11.1	13.02	0.001	19
Post-test	20	15.1				

at 0.05 level of significance

The mean score for the fill-in-the-blank type comprehension pre-test was 4. After the treatment, this score increased to 15.1 with a 11.1 mean difference. This difference was statistically significant. The difference suggests that the experimental group improved significantly for the fill-in-the-blank type of comprehension test as well (t=13.02, df=19, p=0.001) (Table 4.11).

4.5.2. Differences Between Pre-Test and Post-Test Scores of the Control Group

First we looked into the differences between pre-test and post-test scores in the vocabulary recall test for the control group. The results are shown in Table 4.12.

Table 4.12 The Difference Between Pretest and Posttest Scores in Vocabulary Recall Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Pre-test	20	0.00				
			14.9	8.62	0.001	19
Post-test	20	14.9				

at 0.05 level of significance

The mean score for the vocabulary recall pre-test was 0.00 for the control group and it increased to 14.95. The difference between pre-and post-tests was statistically significant for the vocabulary recall test for the control group. This difference suggests that the control group improved significantly (t=8.62, df=19, p=0.001) (Table 4.12).

After looking into the differences between pre-test and post-test scores of the vocabulary recall test, we analysed the difference between pre-test and post-test scores of the vocabulary comprehension test as a whole for the control group. The results are shown in Table 4.13.

Table 4.13 The Difference Between Pretest and Posttest Scores in Comprehension Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Pre-test	20	9.1				
			21.9	13.73	0.001	19
Post-test	20	31				

at 0.05 level of significance

The mean score for was 9.1 in the vocabulary comprehension pre-test, ant it increased to 31 in the post-test with a 21.9 mean difference for the control group. This difference suggests that the control group improved significantly in terms of vocabulary comprehension (t=13.73, df=19, p=0.001) (Table 4.13).

Then, as we did for the experimental group, we analysed the two sections of the comprehension test, which are multiple choice type and fill-in-the-blank type tests, separately. Table 4.14 shows the differences between pre-test and post-test scores of multiple choice type comprehension test for the control group.

Table 4.14 The Difference Between Pretest and Posttest Scores in Multiple Choice Type Comprehension Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Pre-test	20	4.9				
			14.3	18.21	0.001	19
Post-test	20	19.2				

at 0.05 level of significance

The mean score for the multiple choice type comprehension pre-test was 4.9 and it increased to 19.2 with a 14.3 mean difference. The difference between pre-and post-test scores was statistically significant. This difference suggests that the control group got better scores after the treatment for the multiple choice type comprehension test (t=18.21, df=19, p=0.001) (Table 4.14).

After analysing the differences for the multiple choice type comprehension test, we looked into the differences between pre-test and post-test scores of the fill-in-the-blank type comprehension test for the control group. The results are shown in Table 4.15.

Table 4.15 The Difference Between Pretest and Posttest Scores in Fill-in-the Blank Type Comprehension Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Pre-test	20	4.2				
			7.5	7.15	0.001	19
Post-test	20	11.8				

at 0.05 level of significance

The mean score for the fill-in-the-blank type comprehension pretest was 4.25. After the treatment, this score increased to 11.8 with a 7.5 mean difference. The difference was statistically significant. This difference suggests that the control group improved significantly in the fill-in-the-blank type comprehension test as well (t=7.15, df=19, p=0.001) (Table 4.15).

4.6. Delayed Vocabulary Recall Test of the Experimental and Control Groups

To measure delayed recall, the test which was used as a pre-test and immediate post-test was given to the students 3 weeks later. The aim of this test was to measure the long term retention of the vocabulary taught. First we compared the results of the experimental group and the control group in the delayed vocabulary recall test. The results are shown in Table 4.16.

Table 4.16 The Mean Scores of Delayed Vocabulary Recall Test

	n	mean	mean difference	t	p	df
Control Group	20	7.2				
			12	11.11	0.001	38
Experimental Group	20	19.2				

at 0.05 level of significance

The highest score was 25 out of 30 for the experimental group in the delayed recall test. In the control group, the highest score was 13 out of 30.

The lowest score was 12 out of 30 for the experimental group and 2 out of 30 for the control group. The lowest score in the experimental group is quite higher than the lowest score in the control group.

The mean score for the experimental group was 19.2, and for the control group, it was 7.2 with a 12 mean difference (Table 4.16). The mean score was higher for the experimental group than that of the control group. The results indicated that there was a significant difference between two groups (t=11.1, df=38, p=0.001).

The results show that the experimental group was more successful in the delayed vocabulary recall test.

4.7. Delayed Comprehension Tests of the Experimental and Control Group

The same tests used as pre-tests and post-test were administered as delayed tests after three weeks to determine the improvement of the subjects in long term comprehension and to determine if there was a significant difference between two groups after 3 weeks.

We first looked at the delayed vocabulary comprehension test as a whole, as we did in the comprehension post-test. Table 4.17 shows the mean scores of the delayed vocabulary comprehension test.

Table 4.17 The Mean Scores of Delayed Vocabulary Comprehension Test

	n	mean	mean difference	t	p	df
Control Group	20	26.8				
			7.3	3.68	0.001	38
Experimental Group	20	34.1				

at 0.05 level of significance

In this test, the highest score of the experimental group was 45 out of 60 and, of the control group was 37 out of 60. The lowest scores were 19 and 17 respectively. The

mean score for the experimental group was 34.1 and it was 26.8 for the control group (Table 4.17). In terms of delayed vocabulary comprehension test, there was a statistically significant difference between two groups (t=3.68, df=38, p=0.001). The results indicate that the experimental group scored better than the control group in delayed comprehension test.

Then, we analysed the two sections of the comprehension test, which are multiple choice type and fill-in-the-blank type tests, separately. Table 4.18 shows the mean scores at multiple choice type delayed comprehension test.

Table 4.18 The Mean Scores of the Multiple Choice Type Delayed Comprehension Test

	n	mean	mean difference	t	p	df
Control Group	20	16.4				
			3.7	3.13	0.03	38
Experimental Group	20	20.1				

at 0.05 level of significance

The highest score for the multiple choice type comprehension delayed test was 28 out of 30 for the experimental group and 21 out of 30 for the control group. The lowest scores were 11 out of 30 for the experimental group and 8 out of 30 for the control group. The mean score of the experimental group was 20.1 and of the control group was 16.4. The statistical analysis revealed that there was a significant difference between the control group and the experimental group. Although the difference was small between two groups' scores, the statistical results indicated that the experimental group scored better than the control group (t=3.13, df=38, p=0.03) (Table 4.18).

After analysing the multiple choice multiple choice type delayed comprehension test scores, we looked into the fill-in-the-blank type delayed test scores to determine if there was a significant difference between two groups after 3 weeks. The results are shown in Table 4.19.

Table 4.19 The Mean Scores of the Fill-in-the Blank Type Delayed Comprehension Test

	n	mean	mean difference	t	p	df
Control Group	20	9.9				
			4.1	3.47	0.01	38
Experimental Group	20	14				

at 0.05 level of significance

The highest score for the fill-in-the blank type comprehension delayed test for the experimental group was 20 out of 30 and of the control group was 17 out of 30. The lowest scores were 8 out of 30 for the experimental group and 5 out of 30 for the control group. The mean score of the experimental group was 14 and of the control group was 9.9. There was a statistically significant difference between the experimental and the control group in this type of test, too. The results indicated that the experimental group scored better than the control group in fill-in-the-blank type delayed comprehension test ($t=3.47$, $df=38$, $p=0.01$).

4.8. Differences Between Post-Tests and Delayed Tests

After comparing the results of the experimental group and the control group in delayed tests, we looked into the differences between post-test and delayed test scores within the groups.

4.8.1. Differences Between Post-Test and Delayed Test Scores of the Experimental Group

The test long term retention, the post-test and delayed-test scores of the experimental group were compared. Table 4.20 shows the differences between post-and delayed test scores of the experimental group.

Table 4.20 The Difference Between Vocabulary Recall Posttest and Delayed Recall Test Scores of the Experimental Group

Experimental Group	n	mean	mean difference	t	p	df
Post test	20	26				
			-6.7	18.29	0.001	19
Delayed Test	20	19.2				

at 0.05 level of significance

The mean score was 26 for the vocabulary recall post-test and decreased to 19.2 for the delayed recall test. The difference between post and delayed test scores was statistically significant for the vocabulary recall test. This difference indicates that the scores of the experimental group decreased significantly (t=18.29, df=19, p=0.001) (Table 4.20).

After looking into the differences between post-test and delayed test scores of vocabulary recall test we analysed the differences between post-test and delayed test scores of the comprehension test as a whole for the experimental group. The results are shown in Table 4.21.

Table 4.21 The Difference Between Posttest and Delayed Test Scores for the Vocabulary Comprehension Test (Experimental Group)

Experimental Group	n	mean	mean difference	t	p	df
Post test	20	37.5				
			-3.4	5.92	0.001	19
Delayed Test	20	34.1				

at 0.05 level of significance

The mean score was 37.5 in the vocabulary comprehension post-test and it decreased to 34.1 in the delayed test with a –3.4 mean difference for the experimental group. This statistical difference suggest that the experimental group's scores decreased significantly in terms of vocabulary comprehension. This result suggest that the experimental group did worse in the delayed comprehension test.

Then, we analysed the two sections of the comprehension test, which are multiple choice type and fill-in-the-blank type tests, separately. Table 4.22 shows the differences between post-test and delayed test scores of multiple choice type comprehension test for the experimental group.

Table 4.22 The Difference Between Posttest and Delayed Test Scores for the Multiple Choice Comprehension Test (Experimental Group)

Experimental Group	n	mean	mean difference	t	p	df
Post test	20	22.1				
			-2	3.36	0.003	19
Delayed Test	20	20.1				

at 0.05 level of significance

The mean score for the multiple choice type comprehension post-test was 22.1 and it decreased to 20.1 in the delayed test with a –2 mean difference. The difference between post and delayed test scores was statistically significant. The difference suggest that the experimental group got lower scores in the delayed test which was given 3 weeks after the post-test (t=3.36, df=19, p=0,001) (Table 4.22).

We next looked into the differences between post-test and delayed test scores of the fill-in-the blank type comprehension test for the experimental group. The results are shown in Table 4.23.

Table 4.23 The Difference Between Posttest and Delayed Test Scores for the Fill-in-the-Blank Type Comprehension Test (Experimental Group)

Experimental Group	n	mean	mean difference	t	p	df
Post test	20	15.3				
			-1.30	2.14	0.04	19
Delayed Test	20	14				

at 0.05 level of significance

The mean score for the fill-in-the-blank type comprehension post-test was 15.3. After the treatment, this score decreased to 14 with a –1.30 mean difference. Although the mean difference was –1.30, the statistical results indicated that there was a significant difference between two test scores. According to this result, the experimental group's scores decreased in three weeks after the post-test (t=2.14, df=19, p=0,04) (Table 4.23).

4.8.2. The Difference Between Post-Test and Delayed Test Scores of the Control Group

First, we looked into the differences between post-test and delayed test scores in terms of vocabulary recall for the control group. The results are shown in Table 4.24.

Table 4.24 The Difference Between Recall Posttest and Delayed Recall Test Scores of the Control Group

Control Group	n	mean	mean difference	t	p	df
Post test	20	14.9				
			-7.7	10.96	0.001	19
Delayed Test	20	7.2				

at 0.05 level of significance

The mean score for the vocabulary recall post-test was 14.9 for the control group and it decreased to 7.2 in the delayed test. The difference between post-and delayed-tests was statistically significant for the vocabulary recall test. This difference indicates that the scores of the control group decreased significantly (t=10.96, df=19, p=0,001) (Table 4.24).

After looking into the differences between post-test and delayed test scores of the vocabulary recall test, we analysed the differences between post-test and delayed test scores of the vocabulary comprehension test as a whole for the control group. The results are shown in Table 4.25.

Table 4.25 The Difference Between Post-test and Delayed Test Scores for the Vocabulary Comprehension (Control Group)

Control Group	n	mean	mean difference	t	p	df
Post test	20	31				
			-4.2	7.03	0.01	19
Delayed Test	20	26.8				

at 0.05 level of significance

The mean score was 31 in the vocabulary comprehension post-test, and it decreased to 26.8 in the delayed test with a –4.2 mean difference for the control group. The statistical difference suggest that the control group's scores decreased significantly in terms of vocabulary comprehension. The result suggests that the control group did worse in the delayed comprehension test (t=7.03, df=19, p=0,01) (Table 4.25).

Then, as we did for the experimental group, we analysed the two sections at the comprehension test separately. Table 4.26 shows the differences between post-test and delayed test scores of multiple choice type comprehension test for the control group.

Table 4.26 The Difference Between Posttest and Delayed Test Scores for the Multiple Type Comprehension Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Post test	20	19.2				
			-2.8	5.14	0.001	19
Delayed Test	20	16.4				

at 0.05 level of significance

The mean score for the multiple choice type comprehension post-test was 19.2 and it decreased to 16.4 in the delayed test with a –2.8 mean difference. The difference between post and delayed test scores was statistically significant. The difference suggest that the control group got lower scores than the post-test scores in the delayed test which was given 3 weeks after the post-test (t=5.14, df=19, p=0,001) (Table 4.26).

We next looked into the differences between post-test and delayed test scores of the fill-in-the-blank type comprehension test for the control group. The results are shown in Table 4.27.

Table 4.27 The Difference Between Posttest and Delayed Test Scores for the Fill in the Blank Type Comprehension Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Post test	20	11.8				
			-1.9	3.5	0.02	19
Delayed Test	20	9.9				

at 0.05 level of significance

The mean score for the fill-in-the-blank type comprehension post-test was 11.8 out of 30. This score decreased to 9.9 in the delayed test with a –1.9 mean difference. Although the mean difference was –1.9, the statistical results indicated that there was a significant difference between two test scores. According to this result, the control group's scores decreased after the post-test within three weeks (t=3.5, df=19, p=0,02) (Table 4.27).

In conclusion, experimental and control group's scores decreased in delayed recall test. When we compare the mean differences, we see that the decrease in the control group is more than the experimental group.

Both groups' comprehension scores decreased in delayed tests as well (Both in multiple choice and fill-in-the-blank type). The maximum decrease was in multiple choice type comprehension test of the control group (-2.85) and the minimum decrease was in fill-in-the blank type comprehension test of experimental group (-1.30). When the comprehension test was considered as a whole the decrease between the post and delayed tests was higher (-4.25 for the control group, -3.4 for the experimental group).

4.9. Differences Between Pre-Test and Delayed Test

We looked into the differences between pre-test and delayed test scores within the groups. The aim of this analysis was to see the changes of the scores between pre and delayed tests, and to see whether three was an improvement or not in terms of vocabulary recall and comprehension.

4.9.1. Differences Between Pre-Test and Delayed Test Scores of the Experimental Group

To see the changes in the vocabulary recall test, we compared the scores of the pre-test and delayed test of the experimental group. The results are shown in Table 4.28.

Table 4.28 The Difference Between Recall Pre-Test and Delayed Recall Test Scores of the Experimental Group

Experimental Group	n	mean	mean difference	t	p	df
Pre-Test	20	0.00				
			19.2	16.47	0.001	19
Delayed-Test	20	19.2				

at 0.05 level of significance

The mean score was 0.00 for the recall pre-test and it increased to 19.2. This difference is statistically significant. The result indicates that the experimental group improved significantly when the pre and delayed recall test scores compared (t=16.47, df=19, p=0.001) (Table 4.28).

We analysed the differences between pre-test and delayed test scores of the comprehension test as a whole for the experimental group. The results are shown in Table 4.29.

Table 4.29 The Difference Between Recall Pre-Test and Delayed Test Scores for the Vocabulary Comprehension Test (Experimental Group)

Experimental Group	n	mean	mean difference	t	p	df
Pre-Test	20	8.8				
			25.3	16.14	0.001	19
Delayed-Test	20	34.1				

at 0.05 level of significance

The mean score was 8.8 in the vocabulary comprehension pretest and it increased to 34.1 in the delayed test with a 25.3 mean difference for the experimental group. This statistical difference suggest that the experimental group's scores increased significantly in terms of vocabulary comprehension.

This result suggest that the experimental group got better scores in the delayed comprehension test than the pre-test (t=16.14, df=19, p=0.001) (Table 4.29).

Then we analysed the two sections of the comprehension test, which are multiple choice type and fill-in-the-blank type tests, separately. Table 4.30 shows the differences between pre-test and delayed test scores of multiple choice type comprehension test for the experimental group.

Table 4.30 The Difference Between Pre-test and Delayed Test Scores for the Multiple Choice Type Comprehension Test (Experimental Group)

Experimental group	n	mean	mean difference	t	p	df
Pre-Test	20	4.8				
			15.3	12.04	0.001	19
Delayed Test	20	20.1				

at 0.05 level of significance

The mean score for the multiple choice type comprehension pre-test was 4.8 and it increased to 20.1 in the delayed test with a 15.3 mean difference. The difference between pre and delayed test scores was statistically significant. The difference suggests that the experimental group got better scores than the pre-test scores in the delayed test (t=12.04, df=19, p=0,001) (Table 4.30).

We next looked into the differences between pre-test and delayed test scores of the fill-in-the-blank type comprehension test for the experimental group. The results are shown in Table 4.31.

Table 4.31 The Difference Between Pre-test and Delayed Test Scores for the Fill-in-the-blank Type Comprehension Test (Experimental Group)

Experimental group	n	mean	mean difference	t	p	df
Pre-Test	20	4				
			10	10.4	0.001	19
Delayed Test	20	14				

at 0.05 level of significance

The mean score for the fill-in-the-blank type comprehension pre-test was 4 in the pre-test and it increased to 14 in the delayed test with a 10 mean difference. The statistical results indicated that there was a significant difference between two test scores. According to this result, the experimental group's scores increased when pre and delayed test scores compared. (t=10.4, df=19, p=0,001) (Table 4.31).

4.9.2. The Difference Between Pre-Test and Delayed Test Scores of the Control Group

First, we looked into the differences between pre-test and delayed-test scores in terms of vocabulary recall for the control group. The results are shown in Table 4.32.

Table 4.32 The Difference Recall Pre-test and Delayed Test Scores of the Control Group

Experimental group	n	mean	mean difference	t	p	df
Pre-Test	20	0.00				
			14.9	17.6	0.001	19
Delayed Test	20	14.9				

at 0.05 level of significance

The mean score for the vocabulary recall pre-test was 0.00 for the control group and it increased to 14.9 in the delayed test. The difference between pre and delayed test was statistically significant for the vocabulary recall test. This difference indicates that the scores of the control group increased significantly when pre and delayed test scores compared (t=17.6, df=19, p=0,001) (Table 4.32).

After looking into the differences between pre-test and delayed test scores of the vocabulary recall test, we analysed the differences between pre-test and delayed-test scores of the vocabulary comprehension test as a whole for the control group. The results are shown in Table 4.33.

Table 4.33 The Difference Between Pre-test and Delayed Test Scores for the Vocabulary Comprehension Test (Control Group)

Experimental group	n	mean	mean difference	t	p	df
Pre-Test	20	9.1				
			17.6	10.71	0.001	19
Delayed Test	20	26.7				

at 0.05 level of significance

The mean score was 9.1 in the vocabulary comprehension pre-test and it increased to 26.7 in the delayed test with a 17.6 mean difference for the control group. The statistical difference suggest that the control group's scores decreased significantly in terms of vocabulary comprehension. The result suggests that the control group got better scores in the delayed comprehension test than the pre-test (t=10.71, df=19, p=0,001) (Table 4.33).

Then, as we did for the experimental group, we analysed the two sections of the comprehension test separately. Table 4.34 shows the differences between pre-test and delayed test scores of multiple choice type comprehension test for the control group.

Table 4.34 The Difference Between Pre-test and Delayed Test Scores for the Multiple Choice Comprehension Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Pre-Test	20	4.9				
			11.5	10.28	0.001	19
Delayed Test	20	16.4				

at 0.05 level of significance

The mean score for the multiple choice type comprehension pre-test was 4.9 and it increased to 16.4 in the delayed test with a 11.5 mean difference. The difference pre and delayed test scores was statistically significant. This difference suggests that the control group got better scores in the delayed comprehension test than the pre-test (t=10.28, df=19, p=0,001) (Table 4.34).

We next looked into the differences between pre-test and delayed test scores of the fill-in-the-blank type comprehension test for the control group. The results are shown in Table 4.35.

Table 4.35 The Difference Between Pre-test and Delayed Test Scores for the Fill-in-the-blank Type Comprehension Test (Control Group)

Control Group	n	mean	mean difference	t	p	df
Pre-Test	20	4.2				
			5.7	4.86	0.001	19
Delayed Test	20	9.9				

at 0.05 level of significance

The mean score for the fill-in-the-blank type comprehension pre-test was 4.2. This score increased to 9.9 in the delayed test with a 5.7 mean difference. The statistical results indicated that there was a significant difference between two test scores. According to this result, the control group got better scores in the delayed comprehension test (fill-in-the blank type) than the pre-test (t=4.86, df=19, p=0,001) (Table 4.35).

4.10. Discussion

The aim of this study was to determine the effects of experimenter-provided keyword method compared to rote rehearsal technique. A number of tests were used to reveal whether experimenter-provided keyword method was more effective on vocabulary recall and comprehension than the rote rehearsal.

The first test was vocabulary recall test. According to the post-test scores, the experimental group showed a considerable increase compared to the control group. The experimental group showed more improvement in terms of immediate vocabulary recall.T-test applied to the differences in the scores they got in the pre and post tests showed significant difference between the groups. This may mean that the experimenter-provided keyword method is an effective way to improve student's vocabulary recall. This result is supported by a considerable number of studies (Troutt-Ervin, 1990; McDaniel and Pressley, 1984; Atkinson, 1975; Mastropieri et all., 1990; Doğan, 1995).

The delayed recall test was given to the student three weeks after the post-test to measure long term retention. We compared the post-test and delayed test, scores of the students within the groups. Although both groups' results decreased, the decrease in control group's results were more than those of the experimental group. The scores they got in the post and delayed tests showed significant difference between the groups. This may mean that forgetting was greater in the control group.

Although literature supports the keyword method's facilitation of initial learning of vocabulary, recent research has not been as supportive of the keyword method for long term retention (Johnson, Adams and Bruning, 1985; Mc Daniel, Pressley and Dunay 1987). Johnson et. al (1985) argue that it may be difficult to use the keyword method for long term retention, especially with moderately complex, abstract, native language vocabulary (cited in Troutt-Ervin 1990:33). Although Wang, Thomas and Quelette (1992) found that forgetting was greater in keyword groups, our results have shown that the control group who were taught by rote rehearsal technique, showed less performance than the experimental group who were taught by keyword method. That is, forgetting was greater in the control group.

The purpose of the vocabulary comprehension test was to determine the effects of the experimenter provided keyword method on vocabulary comprehension compared to rote rehearsal technique. There were two parts in the vocabulary comprehension test: Multiple choice type vocabulary comprehension test and, fill-in-the-blank type vocabulary comprehension test. There were 30 questions in each part. The top score was considered as 60 when the comprehension tests were taken into consideration as a whole.

We first looked at the vocabulary comprehension test as a whole. According to the post-test scores, the experimental group showed a 28,7 points increase as opposed to the 21.8 points increase for the control group. The results were similar when we analysed the results of the comprehension tests separately. In the multiple choice type vocabulary comprehension test the experimental group showed a 17.3 points increase as opposed to the 14.3 points increase for the control group. In the fill-in-the-blank type vocabulary comprehension test the increase was 11.1 for the experimental group and it was 7.5 for the control group. The experimental group achieved more improvement in terms of vocabulary comprehension. The difference was significant between the control and the experimental groups. This results is supported by some studies (McDaniel and Pressley, 1989; Mastropieri, Scruggs and Fulk, 1990). McDaniel and Pressley (1989) found that the keyword method provided more comprehension, as a result of greater recognition of vocabulary items.

To measure delayed comprehension we analysed the results of delayed comprehension test. As we did for the experimental group, first we looked at the delayed vocabulary comprehension test as a whole. The experimental group showed a 3.4 points decrease as opposed to the 4.2 points decrease for the control group. The results were similar when we analysed the results of the comprehension tests separately. In the multiple choice type vocabulary comprehension test the experimental group showed a 2 points decrease as opposed to the 2.85 points decrease for the control group. In the fill-in-the-blank type vocabulary comprehension test the decrease was 1.3 for the experimental group and it was 1.9 for the control group. The results have shown that the control group showed less performance than the experimental group. The scores they got in the post and delayed tests showed significant differences between the groups. In the literature, studies did not include such a comparison between the students who were

5. SUMMARY AND CONCLUSIONS

5.1. Summary

The aim of this study was to determine whether there were differences in terms of vocabulary recall and comprehension between the experimental group which was taught vocabulary by the experimenter provided keyword method and the control group which was taught by rote rehearsal.

During the study, experimental group was provided with visual stimuli and keywords while the control group was given vocabulary in form of a list and was asked to memorise.

To measure the immediate and long term vocabulary recall performance 30 target vocabulary words which were not known by the students were chosen. Although the groups were equal in terms of vocabulary recall performance before the treatment, the immediate recall post-test scores implied that the experimental group benefited from the treatment. As a result it can be said that providing visual stimuli and keyword was more effective than giving merely a vocabulary list to facilitate vocabulary recall.

The comprehension test consisted of two parts; a multiple choice and a fill-in-the-blank test. For the multiple choice part, 30 words were tested. In the second part, fill-in-the-blank part, the same 30 vocabulary words were divided into six parts with 5 questions in each part and 7 words were given. The students had to fill in the blanks with the correct words that they would choose from the seven words given in the boxes.

The post-test scores showed that there was a significant difference between two groups for the vocabulary comprehension test ($t=2.79$, $p=0.01$). Experimental group scored higher in both parts of the comprehension test and the difference was statistically significant ($t=2.39$, $p=0.02$, $t=2.58$, $p=0.01$). As a result it can be said that that the treatment applied to experimental group was more effective than the one applied to control group in terms of vocabulary comprehension for both tests.

The same test which was used as a vocabulary recall pretest and immediate posttest was used as a long term recall test after three weeks to measure delayed recall.

Although both groups forgot some of the words in the long run, there was still a statistically significant difference between the experimental and the control group (t=11.11, p=0.001). That is, experimenter-provided keyword method was more effective than the procedure applied to control group for long term retention.

The same comprehension post-test was given to the students after 3 weeks as a delayed test. Although there was a decrease in the scores of both experimental and control group, experimental group scored higher in both parts of the comprehension test and the difference was statistically significant (t=3.13, p=0.03; t=3.47, p=0.01). The experimental group was more successful in delayed vocabulary comprehension as well.

The visual pictorial images prepared by the experimenter were entertaining and humorous. It is thought that this has also been a motivating factor for the experimental group to recall and retain target vocabulary.

5.2. Conclusion

In this study, the following research questions were answered in the following ways:

1- Is the experimenter-provided keyword method more effective than rote rehearsal technique in terms of immediate recall of vocabulary.

Both groups improved after the treatment. However the improvement in the experimental group was considerably higher compared to that of the control group in terms of immediate vocabulary recall. This conclusion was also observed by Troutt-Ervin, 1990; McDaniel and Pressley 1984; Atkinson, 1975; Doğan, 1995.

2- Is the experimenter-provided keyword method effective than rote rehearsal technique in terms of immediate comprehension of vocabulary.

There were significant differences between two groups after the treatment for both parts of vocabulary comprehension test. Although there were significant improvements for both groups, results indicated that mnemonically trained students outperformed control students on both comprehension tests.

As a result, it can be said that the experimenter provided keyword method is an effective way to improve students' immediate vocabulary comprehension.

3- Is the experimenter provided keyword method more effective than rote rehearsal technique in terms of delayed vocabulary recall?

The independent sample t-test results showed that there was a significant difference between two groups. The experimental group retained more vocabulary than the control group. Although there was forgetting for both groups in three weeks after the treatment, the comparison of pretest and delayed test scores showed that the improvement is significant.

4- Is the experimenter-provided keyword method more effective than rote rehearsal technique in terms of delayed vocabulary comprehension?

The forgetting was significant between post and delayed test scores for both groups. However, the control group forgot more words than the experimental group. The scores of the control group were lower than the scores of the experimental group for both tests.

Finally, it can be said that, the experimenter-provided keyword method is an effective way to improve students vocabulary recall and comprehension.

Our students in the experimental group showed better performance than the control group because of the strategy applied to learn vocabulary items.

The students in the experimental group were able to recall and comprehend more vocabulary by the visual link between the vocabulary and the keyword.

The teacher generated the keywords and this was a model for students. They may apply this strategy to learn new vocabulary by generating their own keywords.

The teachers may use the keyword method as a supplementary technique in their classes, and they may teach their students some other memory strategies.

5.3. Suggestions For Further Studies

In this study, intermediate level subjects were used. Further studies can be conducted with elementary, upper intermediate and advanced level students to see if there will be differences in the results.

In further studies the long term effects of the keyword method can be studied by longer periods.

In this study the experimenter used some humorous keywords, but the effect of the humorous keywords was not found statistically since there was not a comparison between humorous and non-humorous keywords. In further studies the effect of the humorous keywords can be studied by comparing them with non-humorous keyword.

Students learned to provide a link between the vocabulary and the keyword for vocabulary learning. They may use the keyword method by generating their own keywords in their future studies for vocabulary learning.

Studies have shown that students showed less performance in student generated keyword method compared to experimenter-provided keyword method. Therefore, we may say that, to recall and to comprehend more vocabulary, students need to be taught by keyword method which is an effective strategy for vocabulary learning. Further studies may focus on to find the effects of the keyword method after the students are taught how to generate their own keywords.

APPENDIX A

VOCABULARY PRE-POST AND DELAYED RECALL TEST

WRITE THE TURKISH EQUIVALENTS OF THE FOLLOWING WORDS

tile :.....

proceedings :.....

warrant :.....

propensity :.....

avidity :.....

deference :.....

endow :.....

elucidate :.....

delicate :.....

evasive :.....

ingenious :.....

humiliate :.....

tangible :.....

grave :.....

hack :.....

heal :.....

discrepancy :.....

confinement :.....

elegy :.....

deter :.....

surmount :.....

enlist :.....

grieve :.....

Curb :.....

indignant :.....

salutary :.....

delirious :.....

potent :.....

interim :.....

commodity :.....

APPENDIX B

VOCABULARY COMPREHENSION PRE-POST AND DELAYED TEST 1

1- This _____ invention of yours should make you rich.
a) delirious b) ingenious c) indignant d) evasive

2- His brief rule as Prime Minister brought few _____ benefits to the poor.
a) tangible b) interim c) evasive d) eligible

3- Vigorous efforts should be made to alert people to the _____ effects which may stem from an excessively noisy environment
a) ingenious b) potent c) delicate d) grave

4- For some illnesses, penicilin is considered to be more _____ than other medicines.
a) evasive b) tangible c) potent d) interim

5- This is a very _____ machine, and maintenance and repairs are costly.
a) grave b) delicate c) tangible d) potent

6- He was _____ at what I said.
a) indignant b) ingenious c) delirious d) adverse

7- The full report isn't ready yet, but you can see the _____ report.
a) severe b) evasive c) tangible d) interim

8- I know that she loves me but, she gave me an _____ answer when I proposed.
a) adamant b) evasive c) ingenious d) apt

9- He was so ill he became _____.
a) delirious b) delicate c) contagious d) tangible

10- The environmentalist pressure groups protested the power plants which pollutes the _____ mountain air in Palandöken.
a) tangible b) eligible c) salutary d) delirious

11- We have a _____ to search the premises.
a) tile b) warrant c) confinement d) commodity

12- The _____ of the meeting were kept secret.
a) assets b) proceedings c) compromises d) discrepancies

13- Cashiers must generally account for _____ between money taken in and the amount recorded on register tapes.
a) discrepancies b) proceedings c) deferences d) propensition

14- Coal, oil and iron are _____ that no country can do without.
a) solidarities b) futilities c) confinements d) commodities

15- John's record in making important decisions was not a good one. He had a _____ for making mistakes.
a) proceeding b) deter c) propensity d) deference

16- A young person's _____ to an old person is expected in many culture
a) futility b) avidity c) deference d) propensity

17- The monkeys' _____ to a small cage was necessary because of the contagious disease.
a) confinement b) regression c) discrepancy d) warrant

18- Could you check the roof? I think some of the _____ are loose.
a) bricks b) layers c) tiles d) commodities

19- His _____ to make money and bacome the richest man in the town will damage the relationships with his friends and family.
a) elegy b) avidity c) redundancy d) futility

20- An _____ is a sad poem, often about someone who has died.
a) enlist b) obedience c) avidity d) elegy

21- That space has already been _____ for building a new hospital.
a) allocated b) deplored c) endowed d) nominated

22- The South African government has declared a state of emergency to _____ the escalation of violence.
a) curb b) withstand c) surmount d) elucidate

23- We have many obstacles to _____ before we can start this project. The success of the project depends on whether we can overcome them.
a) obsess b) sustain c) surmount d) humiliate

24- Japanese people still have been _____ for their relatives and friends who were killed in Hirosima during the Second World War.
a) grieving b) deploring c) healing d) thrilling

25- The unceasing efforts of CIA _____ the attempts for the assessination of the president.
a) consoled b) rotated c) sustained d) elucidated

26- His wounds are _____, he feels much better now.
a) deterring b) healing c) endowing d) curbing

27- Nothing about her prior career may hint that she _____ herself with her unacceptable behaviours at the meeting.
a) nominated b) endowed c) humiliated d) pursued

28- When the Cyprus crisis burst out, volunteers were _____ the armed forces as a military precaution.
a) tortured b) enlisted c) endowed d) grieved

29- His failure did not _____ him from trying again.
a) curb b) heal c) pursue d) deter

30- Tom _____ the box apart with the dull axe.
a) thrilled b) hacked c) tortured d) knitted

APPENDIX C

VOCABULARY COMPREHENSION PRE-POST AND DELAYED TEST 2

deference	warrant	elegy
avidity	proceeding	confinement
propensity		

1- I refused to discuss the matter out of _____ to my employer.

2- Their _____ to such a small area could not be carried out without the use of force.

3- All of us recognize our own _____ to evil.

4- The championship at the end of the season was the result of their _____.

5- The _____ is a sad poem, often about someone who has died.

proceedings	avidities	warrants
commodities	elegies	discrepancies
tiles		

6- Two _____ was issued for his arrest.

7- The _____ were published in the newspaper.

8- There were some _____ in his various accounts.

9- The best land is reserved for such _____ as coffee , cotton and bananas.

10- The brick houses in the city were roofed in reddish-brown _____ .

hacked	endowed	deterred
humiliated	healed	enlisted
elucidated		

11- The wound will be _____ by this oinment.

12- She had _____ him in front of his friends.

13- They were _____ into the 21st Regiment

14- Benn was not _____ by the hostile reaction.

15- The murderers were so evil that they _____ off the heads and hands of their victims.

surmount	enlisted	elucidated
endowed	hacked	curbed
grieved		

16- He personally _____ a ward in Manhattan General Hospital.

17- Children whose instricts are to rebel often get _____ by their teachers.

18- She manageⅡd to _____ every obstacle that came her way.

19- He has _____ for the dead baby for many years.

20- The lesson _____ the points that have been made in the previous lecture.

evasive	tangible	potent
delirious	salutary	indignant
interim		

21- Many taxpayers are _____ at what they regard as an illegal use of public funds.

22- They hope to create Ⅱ _____ companⅡies for a short time.

23- She is deliberately trying to avoid talking about herself, she is giving _____ answers.

24- She was _____ with the fewer.

25- "The accident was a _____ experience; I'll never drink and drive again.

tangible	delirious	ingenious
grave	Ⅱsalutary	delicate
potent		

26- They competed with each other to find the most _____ and original punishment.

27- The police need _____ proof of his guilt before they can act against him.

28- The situation poses a _____ threat to peace.

29- The schools have been _____ instruments of westernization.

30- Bees have a _____ sense of smell.

HUMILIATE

HAMİ

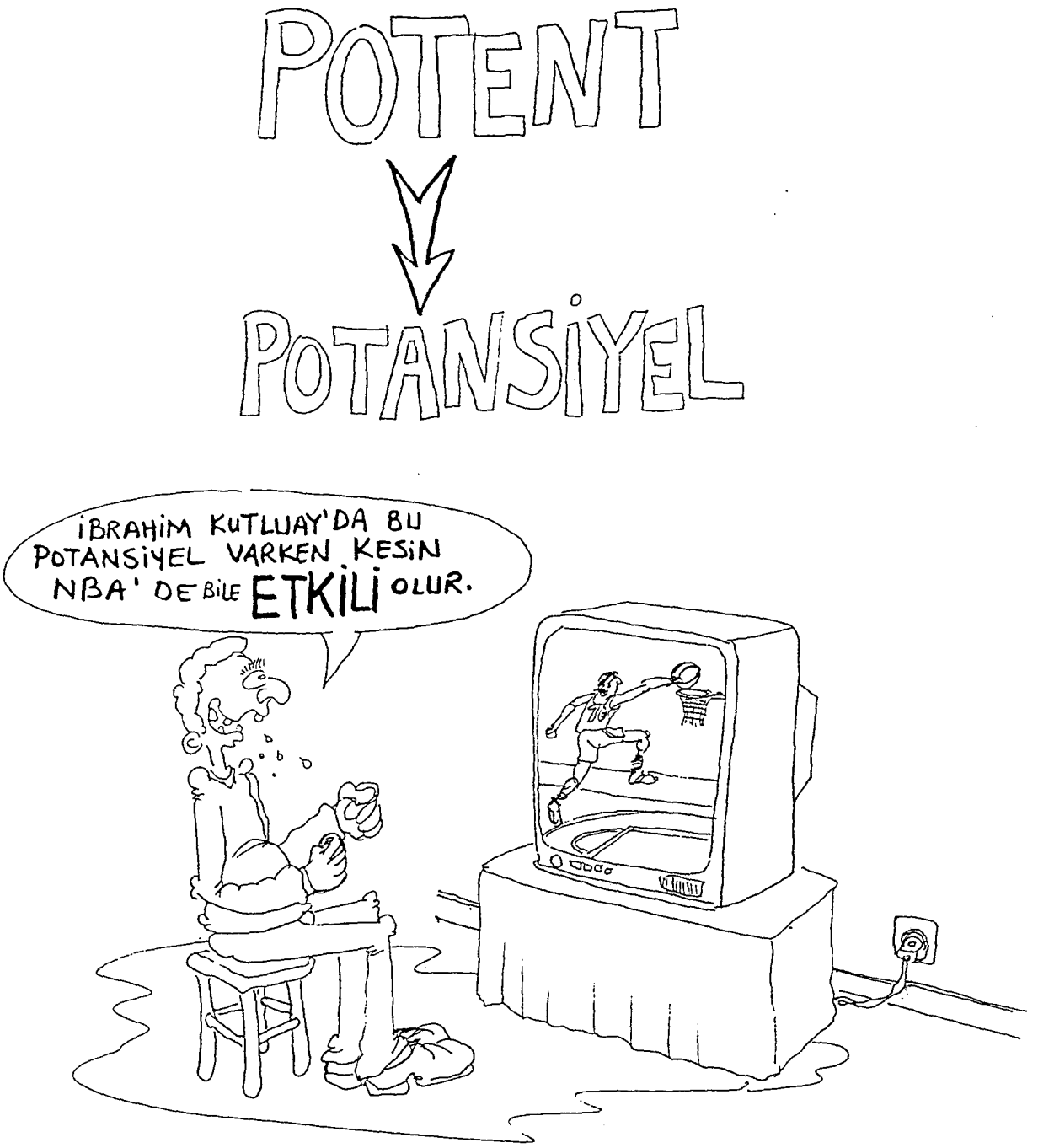
APPENDIX D 3


ENLIST
ER LİSTESİ
BAK ER LİSTELERİ ÇIKMIŞ ASKERE ALINACAĞIZ.

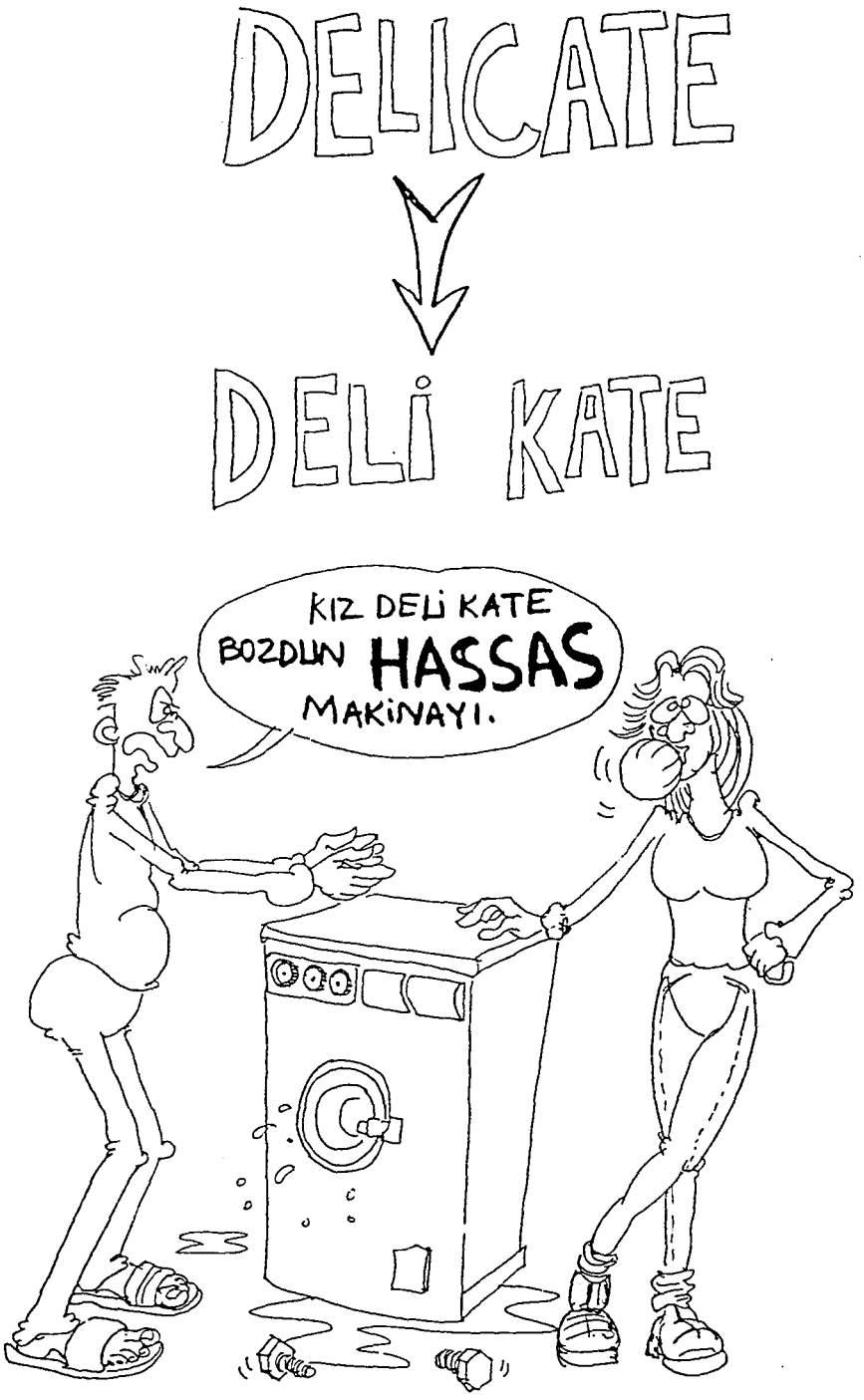

DETER
YETER
PEKİ O ZAMAN BEN DAHA FAZLA ISRARCI OLMAYAYIM...
YETER! O ARSAYI ALMAKTAN VAZGEÇTİM TAMAM.

ELUCiDATE

EEE LUSi



APPENDIX D 8

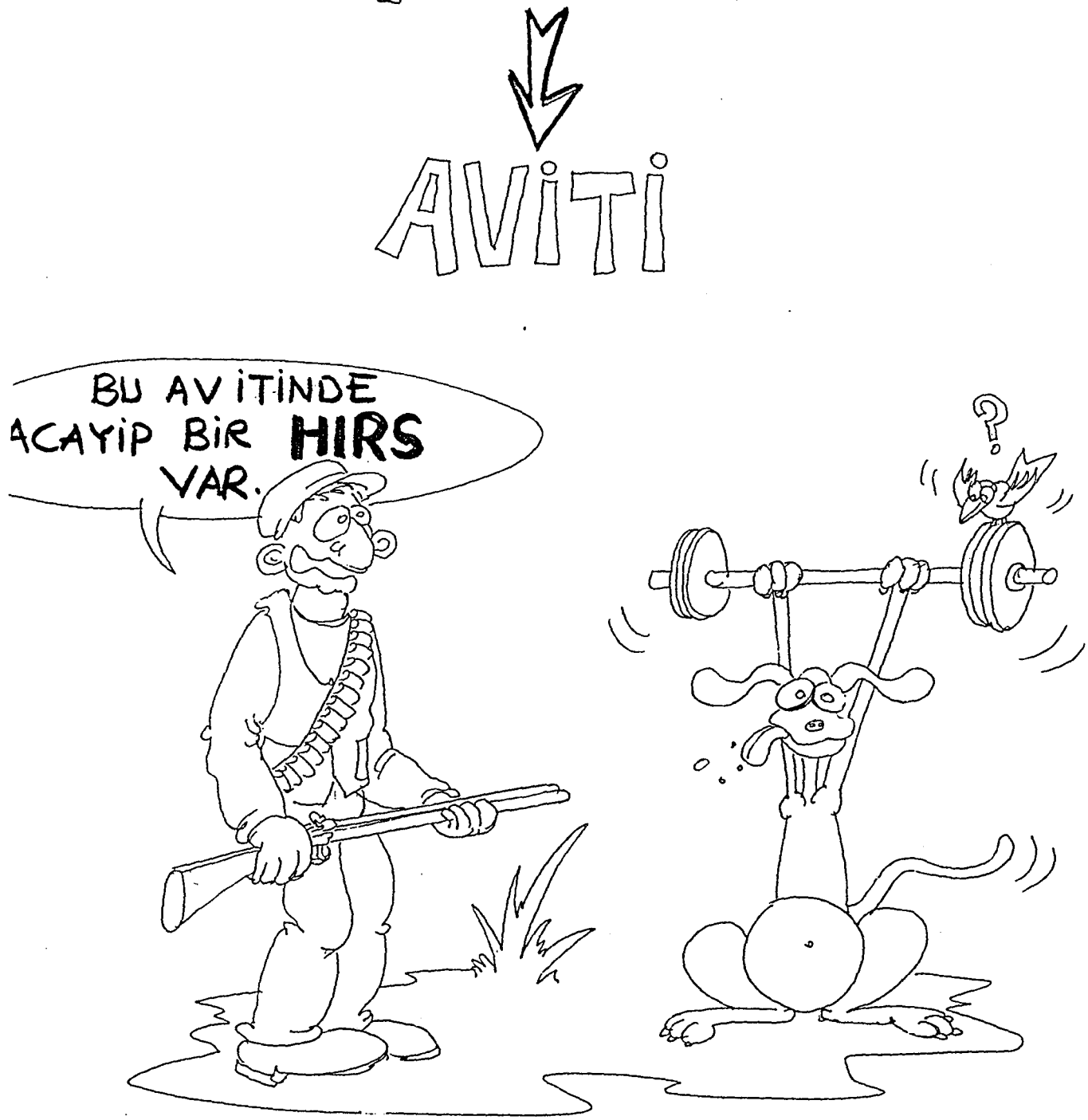


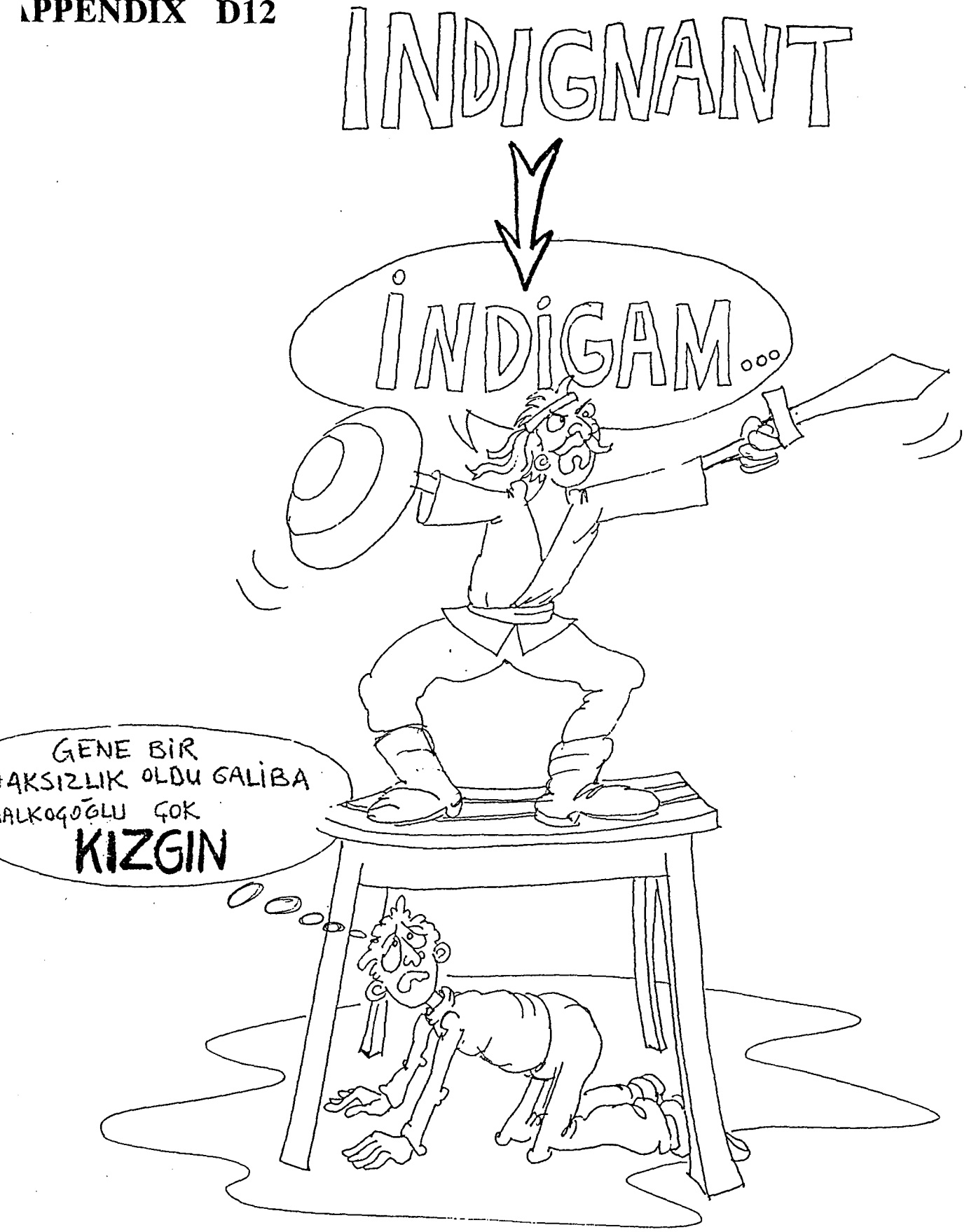
INGENIOUS

YİNGENİ

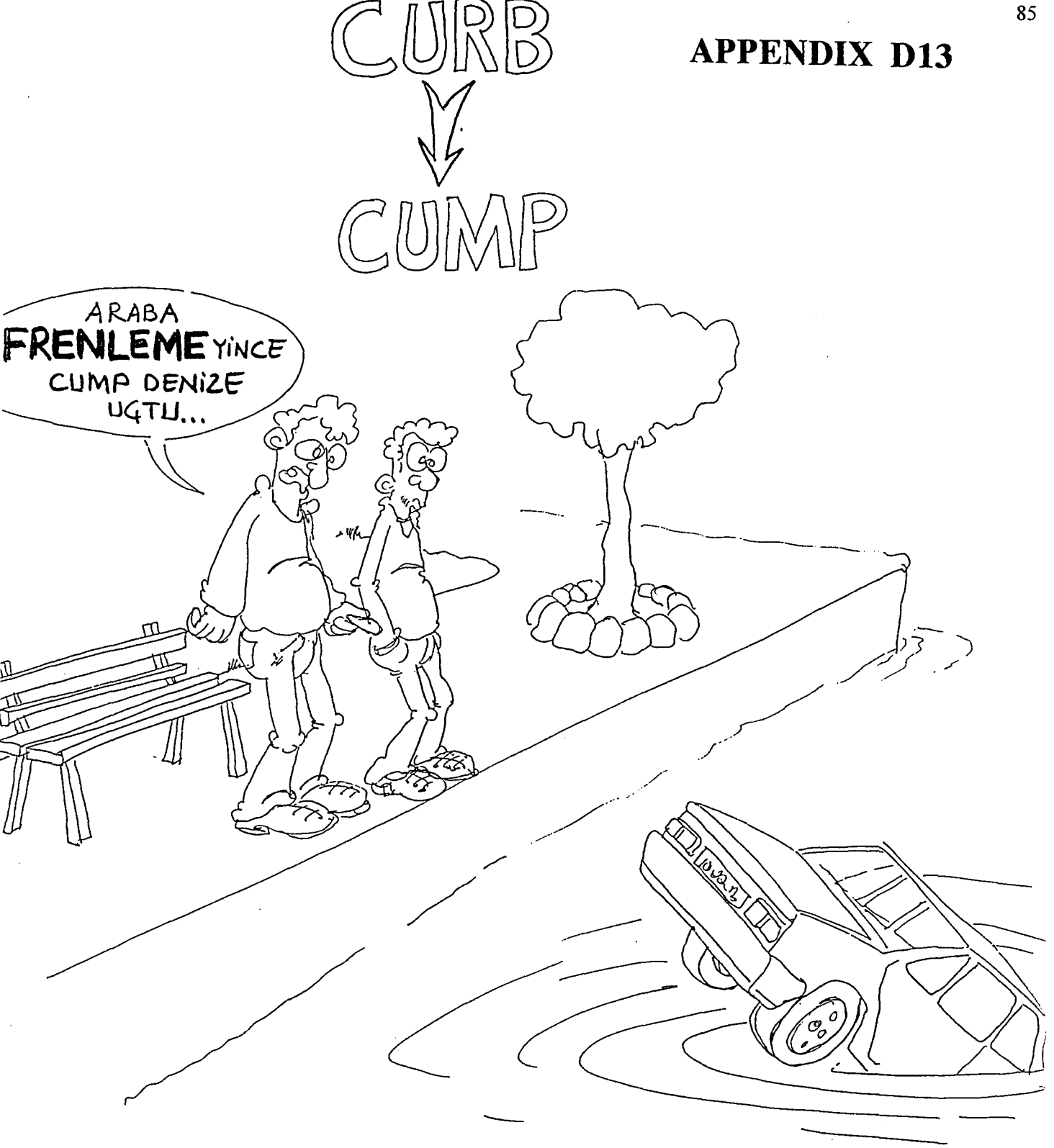
AVIDITY

APPENDIX D11




INDIGNANT
İNDİGAM...
GENE BİR
AKSIZLIK OLDU GALİBA
ALKOGOĞLU ÇOK
KIZGIN

APPENDIX D13



APPENDIX D14

PPENDIX D15

DELIRIOUS

APPENDIX D16

ENDOW

APPENDIX D17

APPENDIX D18

SURMOUNT

SUR

EVASIVE

EVA-SİVEREK

APPENDIX D21

APPENDIX D22

SALUTARY

SALATALIK

APPENDIX D23

CONFINEMENT

APPENDIX D24

APPENDIX D25

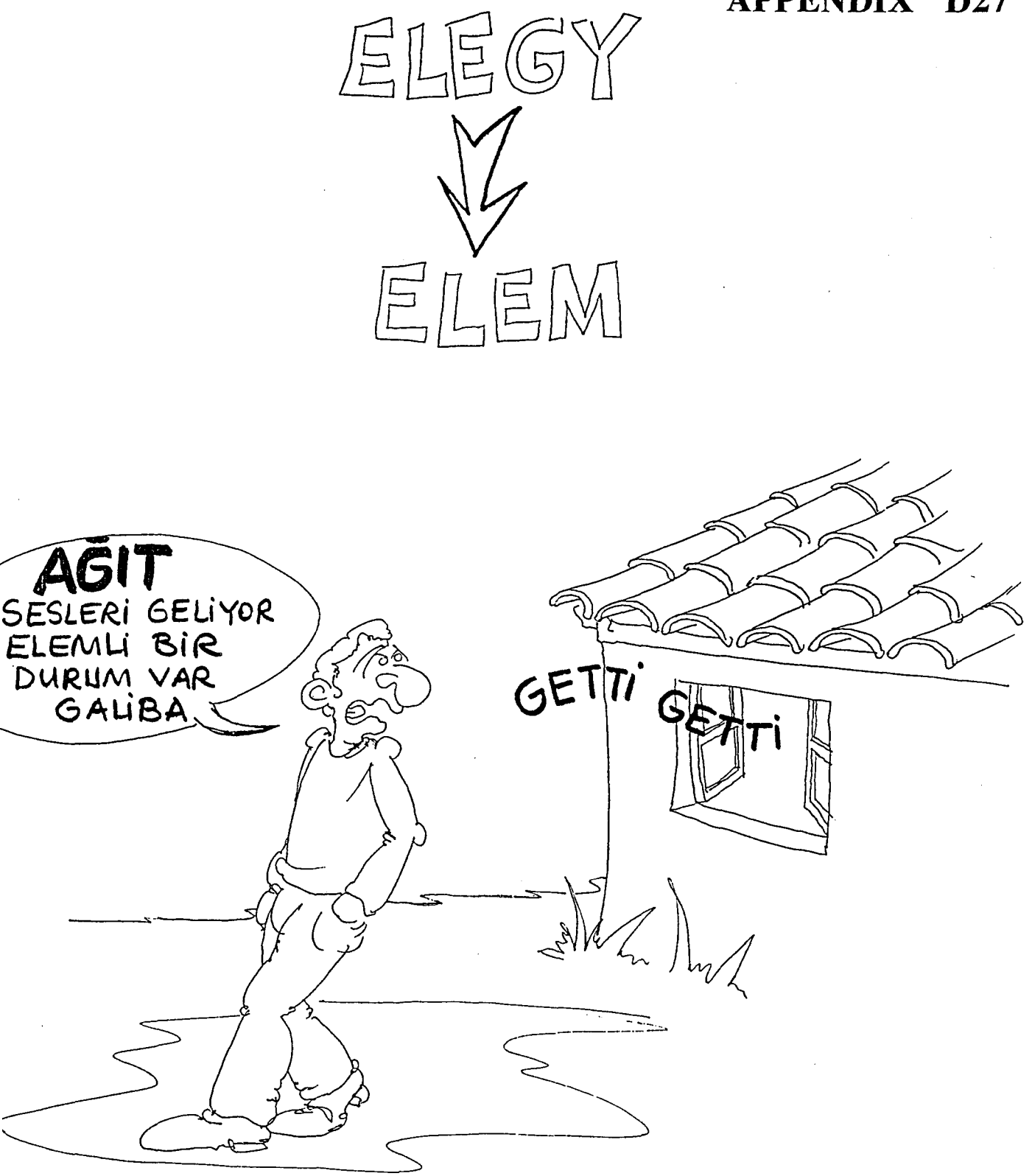
DEFERENCE

DEFTER

PROPENSİTY

↓

PROPAN



DISCREPANCY

DISPANSER

APPENDIX D2

COMMODITY ↓ KOMİDİN

APPENDIX D30

APPENDIX E.1

The Results of the Recall Tests Administered to the Subjects (Experimental Group)

Tests	Recall Pretest	Immediate Recall Posttest	Delayed Recall Test
Subjects 1	0	23	17
2	0	29	21
3	0	28	23
4	0	30	24
5	0	30	20
6	0	28	20
7	0	30	25
8	0	26	18
9	0	24	16
10	0	30	22
11	0	27	20
12	0	27	20
13	0	19	15
14	0	28	21
15	0	15	10
16	0	28	20
17	0	20	12
18	0	25	21
19	0	24	19
20	0	29	21
Average	0	26	19.25

APPENDIX E.2

The Results of the Recall Tests Administered to the Subjects (Control Group)

Tests	Recall Pretest	Immediate Recall Posttest	Delayed Recall Test
Subjects 1	0	13	10
2	0	16	4
3	0	15	6
4	0	10	4
5	0	17	7
6	0	19	13
7	0	22	13
8	0	12	5
9	0	7	2
10	0	19	5
11	0	17	7
12	0	9	4
13	0	16	11
14	0	19	8
15	0	7	6
16	0	12	6
17	0	14	5
18	0	18	9
19	0	17	9
20	0	20	10
Average	0	14.95	7.2

APPENDIX E.3

The Results of the Comprehension Test Administered to the Subjects (Experimental Group)

Tests	Pretest	Immediate Posttest	Delayed Test
Subjects 1	7	34	35
2	9	32	30
3	8	48	41
4	10	47	44
5	10	52	45
6	8	46	35
7	8	35	31
8	10	34	33
9	8	40	42
10	10	38	34
11	10	40	32
12	9	36	30
13	10	27	19
14	9	47	40
15	7	26	30
16	9	45	45
17	9	24	26
18	6	30	30
19	8	32	32
20	11	37	28
Average	8.8	37.5	34.1

APPENDIX E.4

The Results of the Comprehension Test Administered to the Subjects (Control Group)

Tests	Pretest	Immediate Posttest	Delayed Test
Subjects 1	7	32	34
2	9	43	33
3	9	28	26
4	8	30	24
5	9	36	28
6	9	40	31
7	10	37	37
8	11	24	21
9	11	22	17
10	8	23	21
11	10	32	23
12	7	25	22
13	11	25	20
14	10	29	29
15	10	26	22
16	9	26	28
17	10	26	23
18	8	42	36
19	9	39	29
20	8	35	31
Average	9.15	31	26.75

APPENDIX E.5

The Results of Multiple Choice part of the Vocabulary Comprehension Test Administered to the Subjects (Experimental Group)

Tests	Pretest	Immediate Posttest	Delayed Test
Subjects 1	4	20	20
2	5	20	21
3	5	27	22
4	7	28	24
5	6	29	28
6	4	26	20
7	4	22	22
8	5	20	17
9	4	23	25
10	5	24	24
11	6	25	21
12	5	21	15
13	6	15	11
14	6	27	22
15	4	14	16
16	3	26	26
17	5	14	14
18	2	19	16
19	4	20	20
20	6	22	18
Average	4.8	22.1	20.1

APPENDIX E.6

The Results of Multiple Choice part of the Vocabulary Comprehension Test Administered to the Subjects (Control Group)

Tests	Pretest	Immediate Posttest	Delayed Test
Subjects 1	4	21	18
2	5	23	20
3	6	18	16
4	3	21	16
5	5	22	18
6	4	20	15
7	6	20	20
8	6	15	12
9	6	15	8
10	5	14	14
11	6	21	17
12	4	20	17
13	4	19	13
14	6	19	19
15	5	18	16
16	5	14	15
17	5	16	17
18	4	24	20
19	4	22	15
20	5	22	21
Average	4.9	19.2	16.35

APPENDIX E.7

The Results of Fill-in-the-Blanks part of the Vocabulary Comprehension Test Administered to the Subjects (Experimental Group)

Tests	Pretest	Immediate Posttest	Delayed Test
Subjects 1	3	14	15
2	4	12	9
3	3	21	19
4	3	19	20
5	4	23	17
6	4	18	15
7	4	13	9
8	5	14	16
9	4	17	17
10	5	14	10
11	4	15	11
12	4	15	15
13	4	12	8
14	3	20	18
15	3	12	14
16	6	19	19
17	4	10	12
18	4	11	14
19	4	12	12
20	5	15	10
Average	4	15.3	14

APPENDIX E.8

The Results of Fill-in-the-Blanks part of the Vocabulary Comprehension Test Administered to the Subjects (Control Group)

Tests	Pretest	Immediate Posttest	Delayed Test
Subjects			
1	3	11	16
2	4	20	13
3	3	10	10
4	5	9	8
5	4	14	10
6	5	20	16
7	4	17	17
8	5	9	9
9	5	7	9
10	3	9	7
11	4	11	6
12	3	5	5
13	7	6	7
14	4	10	10
15	5	8	6
16	4	12	13
17	5	10	6
18	4	18	16
19	5	17	14
20	3	13	10
Average	4.25	11.8	9.9

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