

THE EFFECTIVENESS OF TWO TECHNIQUES IN TEACHING CONTENT
WORDS TO EFL STUDENTS AT TURKISH UNIVERSITY

A THESIS PRESENTED BY

ÖZGE TILSIM RAİF

TO THE INSTITUTE OF ECONOMICS AND SOCIAL SCIENCES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS
IN TEACHING ENGLISH AS A FOREIGN LANGUAGE

SILKENT UNIVERSITY

JULY 1999

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ABSTRACT

Title: The Effectiveness of Two Techniques
 In Teaching Content Words to EFL
 Students at a Turkish University

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This relationship study aimed at investigating the effects of the mnemonic keyword technique on recall of vocabulary items in comparison to a dictionary-meaning supplied group. The study was conducted at Middle East Technical University, Department of Basic English. The participants were thirty-two Pre-Intermediate level students in two intact classes.

The research questions focused on the significant difference, if any, in short-term and long-term recall of vocabulary items with respect to the implementation of teacher-supplied mnemonic keywords and teacher-supplied

dictionary definitions in the instruction of vocabulary items.

The study was conducted on two Pre-Intermediate level classes and each class was randomly assigned to be treated with one of the two techniques. Thus, two groups were formed: "Pre-Intermediate Keyword Group" and "Pre-Intermediate Dictionary Definition Group". To determine the words to be used in the experiment, a checklist of sixty words was given to a randomly selected class of sixteen Pre-Intermediate students who did not further participate in the experiment. These sixty vocabulary items were chosen by the researcher with the help of the class instructors of the experiment and control groups. The guidelines for the selection of these words were the coursebooks and materials dealt with at the Pre-Intermediate level at the Department of Basic English, Middle East Technical University. The words were nouns which were similar to those that the students would learn at that level. However, the list was based on the assumption that the students were not familiar with these items. The 40 items that were most recognised by the sixteen students were eliminated, leaving 20 items to be used in the experimental process.

The researcher dealt with the instruction of the vocabulary items for both the keyword group and the dictionary-definition group. The keyword group received copies of a list of the twenty vocabulary items with

their Turkish equivalents and key words for each one. The dictionary-definition group received a copy of the same vocabulary items supplied with dictionary definitions along with an example sentence for each item. Both classes were then subjected to an immediate recall test designed as a matching test dealing with the vocabulary items. After a period of three weeks the students were given the same matching test in a different format to test long-term retention.

T-test scores were calculated to analyse which technique was more effective on students' short-term and long-term retention of the target vocabulary through the comparison of the means of each group. The immediate posttest results found high raw scores in both groups, which did not differ significantly from each other.

The results also support the finding that neither technique can be considered superior to the other in promoting vocabulary retention at the pre-intermediate level. In fact, both techniques were unsuccessful in promoting the long-term retention of most of the vocabulary items tested.

BILKENT UNIVERSITY
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The committee has decided that the thesis of the student
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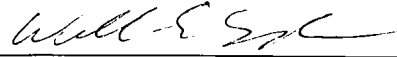
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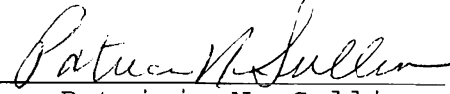
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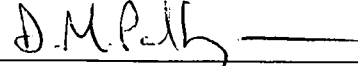
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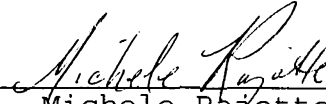
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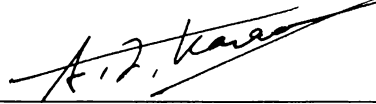


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CHAPTER 1:INTRODUCTION

Introduction

"Without grammar very little can be conveyed, without vocabulary nothing can be conveyed" is the sentence Wilkins (1972, cited in Carter & McCarthy, 1988) used to relay his unhappiness with the neglect of vocabulary in the years the audio-lingual approach was favoured (p.111). Vocabulary teaching has generally been integrated into other skills such as reading or writing in second language acquisition. Thus, as Carter and McCarthy (1988) claim, vocabulary study has been neglected by linguists, applied linguists and language teachers (p.1). It is, however, a skill that can be treated independently. Today teachers and researchers agree on the necessity of vocabulary teaching as they are becoming aware of the benefits of having a good command of basic vocabulary. Recent research findings prove the important role core vocabulary plays in the development of the reading, writing, listening, and speaking skills (Coady, 1997; Hatch & Baker, 1993, cited in Laufer, 1997; Nation, 1990).

The size and complexity of the vocabulary learning task for ESL/EFL students points to the importance of direct vocabulary teaching, especially at the beginner level (Richards, 1976). Therefore, students need

guidance as to how to store a vocabulary item that will result in long-term retention of that item. When lexis learning is incorporated into different fields of language, the learner may not be aware of the variety of techniques that can be used to help them retain a word. It is important that students recognise various approaches in vocabulary learning so as to be able to select the ones which best suit them in future encounters with unfamiliar lexical items.

There are a number of ways that vocabulary can be taught along with a number of techniques that can be used to promote long-term retention of lexical items. This research study will examine the effectiveness of the teacher-supplied keyword technique and the teacher-supplied dictionary-definition technique.

Background of the study

The problems that students face with vocabulary and their complaints about having to store too many words in their memories is the reason as to why I have selected vocabulary recall as the topic of my research. Over the years students have often confronted me with this question: How can we keep all these words in our minds? Therefore, this research study will investigate the effects on the learners of two techniques that can help

students resolve this problem: the keyword technique and the dictionary-definition technique.

In the keyword technique, learners create an unusual association between the word form and its meaning. Learners refer to their native tongue and think of a word that sounds like the one they are learning. This L1 word is considered the key word through which learners link the meaning of the target word and an image and create a mental picture to help recall the word. For example, for a Turkish learner of English, the word "engine" could be associated with an image of an elf sitting on the hood of a car because "cin", which means elf in Turkish, is pronounced similarly to the "-gine" part of the word "engine". It is claimed that the more striking the mental image is the more effective it is in helping learners recall the target words (Nation, 1990).

Another approach to learning words is to look them up in a dictionary. The meaning or meanings of the word are listed along with their part of speech. A good dictionary will also supply example sentences for each meaning of the word. Learners will often write down the definitions and try to use the word in sentences of their own to enhance their retention of these words.

Through this study it will be possible to assess which technique helps the learner recall a higher number of lexical items. Vocabulary is a part of a language,

which never ceases to expand. It is not possible to say that the process of learning vocabulary has been completed since new lexical items are bound to appear in all areas of a language - reading, listening, and writing. Therefore, if a learner knows a technique that results in a higher level of retention, some of the problems of learning language can be solved.

As an instructor I found that most of the students at the Department of Basic English (DBE, hereafter), Middle East Technical University (METU, hereafter) try to memorise the dictionary meanings of all the unknown words and this often results in a low retention level, especially with vocabulary items of low frequency. This problem, along with that of vocabulary not being treated as an area of language learning in itself, needs to be addressed in order to help overcome the problems students face with vocabulary learning and retention.

Statement of the problem

The teaching of vocabulary items at the DBE, School of Foreign Languages (SFL, hereafter), METU is incorporated in the reading skills strategies and mainly revolves around the vocabulary in-context approach, which is an indirect technique of vocabulary teaching and an incidental way of learning vocabulary through reading passages (Paribakht & Wesche, 1997; Seal, 1991). These

passages contain target vocabulary items in sentences and the students are expected to guess their meanings from hints such as punctuation marks, connectors and relative pronouns given in the sentences they are used in or in the surrounding sentences. This approach is highly appraised and extensively practised at the DBE, METU. Yet there are students who fail to reach the level of lexical competence expected of them since guessing word meanings by use of contextual clues is far more difficult than is generally realised. Laufer (1997) points out that guessing can be impaired by any of the following factors: (a) non-existence of clues, (b) lack of familiarity with the words in which the clues are located, (c) presence of misleading or partial clues, and (d) incompatibility between the reader's schemata and the text content.

One other technique used at the DBE is the prefix, root, and suffix technique. Learners are taught Latin affixes and roots and using these students can learn unfamiliar words by relating them to known words or to known prefixes and suffixes. Nation (1990) states that to make use of prefixes and roots, learners need to be able to break new words into parts, they need to know the meanings of the parts, and they need to be able to form connections between the meaning of the parts and the dictionary meaning of the new words. According to

Nation, these skills can be acquired at higher levels of language learning and can not be applied at all levels.

Purpose of the study

The purpose of the study is to determine which of the two techniques, the keyword technique and the dictionary-definition technique, is more effective in helping students recall words.

Significance of the Study

Since time is a great constraint it is not possible for the instructors to teach a variety of different techniques to help these students. The findings of this study may help instructors at METU implement useful techniques, which will enhance the learner's ability to retain vocabulary items that do not have contextual references. The use of in-context vocabulary teaching at the DBE, as stated above, can be backed up with a variety of techniques to aid students in establishing long-term retention. The results of the experiment dealing with the keyword technique and the dictionary-definition technique will hopefully provide some information about which one is more suitable for the DBE Pre-Intermediate students at METU.

Research Questions

The study will address these questions:

1. Is there a significant difference in the results of the immediate-recall test of vocabulary items between the Keyword Technique group Dictionary-Definition group?
2. Is there a significant difference in the results of the delayed-recall test of vocabulary items between the Keyword Technique group Dictionary-Definition group?
3. Is there a significant difference between the results of the immediate-recall test and the delayed-recall test of the Keyword Technique group?
4. Is there a significant difference between the results of the immediate-recall test and the delayed-recall test of the Dictionary-Definition group?

CHAPTER 2: LITERATURE REVIEW

Introduction

As noted in the previous chapter, this study investigates the difference, if any, between the effectiveness of "teacher-supplied keyword technique" and "teacher-supplied dictionary definition" in the teaching of EFL content vocabulary in terms of the students' immediate and long-term recall. As background to this issue, the first part of this literature review considers the general attitudes toward vocabulary teaching/learning over the past three decades. The next section takes a look at learners' lexical storage. Next, approaches to vocabulary teaching/learning, followed by the techniques and methods used in vocabulary teaching and learning are reviewed. The final section presents recent research on the use of mnemonic techniques, and dictionary usage in vocabulary teaching/learning.

General Attitudes Toward Vocabulary Teaching and Learning

Many researchers and practitioners in the field of English language teaching agree that vocabulary instruction had been neglected until the late 1970's to the extent which led Judd to state that "vocabulary has been neglected to secondary status in favour of syntax" (1978, p.71). At that time, a revival of interest in vocabulary was spurred by lexical research projects and

explorations in lexical semantics that were accompanied by developments in vocabulary teaching (Carter, 1987; Carter & McCarthy, 1988; Zimmerman, cited in Coady & Huckin, 1997).

Seal (1991) claims that the following three recent developments in the theory and practice of teaching can be attributed to the resurgence of interest and activity in lexical matters:

- 1) The notion that second language learners develop their own internal grammar in predetermined stages that cannot be disturbed by grammar instruction,
- 2) The shift toward communicative methodologies that emphasise the use of language rather than the formal study of it,
- 3) Within the domain of teaching English for Academic Purposes, teachers have become increasingly aware that non-native students are significantly disadvantaged in their academic studies on account of the small size of their second language vocabularies (pp.297-98).

Therefore, the assumption that lexical development takes place automatically and unconsciously (Maigushca, 1993) and that vocabulary can be left to take care of itself (Elly & Mangubhai, 1981; cited in Nation, 1990)

began to lose its validity, along with the attitude held in the 1960s which is conveyed in the following statement:

In learning a second language, you will find that vocabulary is comparatively easy, in spite of the fact that it is vocabulary that students fear most. The harder part is mastering new structures in both content and expression (Gleason, 1961, p.7; quoted in Carter, 1987, p.145).

This indifferent attitude toward vocabulary has changed. With the emergence of the instrumentalist view, which did not give so much importance to grammar and syntax in the acquisition of a second language, the belief that good vocabulary knowledge results in good comprehension became prominent (Nation, 1990). Laufer (1997) gives the results of a recent survey carried out by Coady, Magoto, Hubbard, Graney and Mokhtari (1993) which shows that the increased knowledge of high-frequency vocabulary leads to an increase in reading proficiency. Moreover, Ulijn and Strother's (1990) claim is that a complete conceptual and lexical analysis may be necessary for reading comprehension, whereas a systematic analysis is not. Understanding a text's words and its subject matter are the indispensable conditions for reading in L2. Background knowledge for reading strategies and syntactic knowledge are the least

important factors for reading comprehension. Studies by Deville and Laufer (both cited in Laufer, 1992) put forth that ninety-five percent lexical coverage is required for reading at an academic level. A quote from Nation (1993) strengthens this view: "The instrumentalist view sees vocabulary knowledge as being a prerequisite and causative factor in comprehension" (p.115).

Since the change in attitude toward vocabulary teaching and learning, new and growing ranges of teaching techniques have been presented complementary to new theories of second language acquisition. Moreover, there has been a great increase in the awareness of both teachers and learners of the importance of vocabulary development (Channell, 1988).

With the growing interest of vocabulary development, the question of what is involved in knowing a word became one of the focuses in the research field of vocabulary. Richards (1976) was the first to define "word knowledge" and in 1987 Carter presented a similar list to Richards' to define the main characteristics for knowing a word:

- 1) It means knowing how to use it productively and having the ability to recall it for active use, although for some purposes only passive knowledge is necessary and some words for some users, are only ever known passively.

- 2) It means knowing the likelihood of encountering the word in either spoken or written contexts or, in both.
- 3) It means knowing the syntactic frames into which the word can be slotted and the underlying forms and derivations which can be made from it.
- 4) It means knowing the relations it contracts with other words in the language and with related words in an L1 as well.
- 5) It means perceiving the relative coreness of the word as well as its more marked pragmatic and discoursal functions and its style levels.
- 6) It means knowing the different meanings associated with it and, often in a connected way, the range of its collocational patterns.
- 7) It means knowing words as part of or wholly as fixed expressions conveniently memorised to repeat-and adapt-as the occasion arises (p.187).

These characteristics offer some assistance to vocabulary teaching in a system where learners tend to see words as the "building blocks upon which a knowledge of the second language can be built" (Seal, 1991). Regarding the strong attitude that learners hold toward vocabulary, it is essential that instructors, as well as

learners, have a clear understanding of what it is to know a word.

Lexical Storage

A study by Henning (1973, cited in Nation, 1990) investigated how language learners at different levels store vocabulary. The results were that learners at low levels stored words according to sounds. An example of this is horse and house. Learners often confuse the meanings of these words because they tend to store these two words in the same mental lexicon since they both begin with the sound 'h' and otherwise sound similar. However, the storage process of learners of a higher level was based on the meanings of the words; i.e., horse and cow.

The results of this study lend themselves to further insight on lexical storage and its enhancement. In order to enhance storage; i.e., to commit words into memory, one must understand the words. After the meaning of the words have been established in the learner's mind, he or she must be taught a variety of strategies which will aid the storage process of the words (Nattinger, 1988). We must bear in mind that function words and content words differ in their level of storage, as do different types of content words. Research shows that function words are committed to memory faster due to their frequencies.

Research also shows that concrete nouns are easier to store since they carry a definite image. Thus, most of the problems occur with content words, which do not lend themselves to images. Since they are too abstract and occur infrequently, most vocabulary problems are inclined to center around them (Burling, 1982). In support of this view, Nattinger (1988) points out that the form of a word helps learners remember the meaning of the word "for we see or hear a particular 'shape' and try to remember what that shape means" (p.64).

Results based on research by Stevick (1976) imply that words are stored and remembered in a network of associations. Therefore, form and sound, meaning, and sight of a word are tied together in our mental lexicon. The results of an investigation carried out by Cowan (1992) indicate that learners of an L2 language are dependent on the visual images of words. Hence, to know the meaning of a word is to know its associations, and to teach words more effectively lexical items must be presented in a network of associations from which learner's can store and recall by aid of certain memory strategies (Nattinger, 1988).

The keyword technique is one of the strategies that can be employed as one of the memory strategies. In learning a word, evidence shows that L2 is affected by the learners L1. Borrowing and interference between the

two languages proves to be very common and results of various experiments conclude that "when some kind of cognitive operation other than simple recall of the phonetic form is called for, it does become extremely difficult to keep two languages apart. In this sense, forms in one language clearly evoke the corresponding related forms in the other language" (Mearea, 1980, p.232). Based on the knowledge concerning the interference of L1 in L2 learning, the keyword technique plays an important role in storing lexical items in our memories.

Approaches to Vocabulary Teaching and Learning

This section will be dealing with direct and indirect vocabulary teaching and learning and the psychological perspectives of implicit and explicit vocabulary learning. The first sub-section will concentrate on two approaches to how vocabulary is dealt with in class and the implications they hold on the learner. The second sub-section will deal with processing of vocabulary learning in relation to psychological second language acquisition theories.

Direct and Indirect Vocabulary Teaching and Learning

Nation (1990) draws attention to the distinction between direct and indirect vocabulary learning. Word

building exercises, guessing words from context, learning words in lists, and vocabulary games are the in class implementations of direct vocabulary learning. That is to say, the focus of the students' attention is on vocabulary. In indirect vocabulary learning the attention of the learners is focused on some other feature such as the message conveyed by the speaker or the writer. Nation's (1990) belief is that there is place for both approaches, since it is difficult to teach all of the complex vocabulary in a text, while Richards (1976) stresses the critical role direct vocabulary learning has on the expansion of learners' vocabulary. Since it is a complex task, students need guidance to define the boundaries of what and how they have to learn.

Seal (1991) adds to Nation's (1990) concept of direct and indirect vocabulary learning by looking at it from the perspective of teaching. Unplanned vocabulary teaching, which is what Seal believes occurs in most ESL classrooms, is the unsystematic teaching of vocabulary. Here, problematic vocabulary items that come up without warning in the course of a lesson are dealt with. Hatch and Brown (1995) also define unplanned vocabulary teaching as 'on-the-spot' vocabulary instruction.

Seal (1991) classifies planned vocabulary into two; explaining that the first is similar to unplanned vocabulary teaching. In this approach, the teacher

predicts that certain key vocabulary items are going to hinder the smooth process of the lesson; therefore, he or she devises an approach to deal with them. The second type of planned vocabulary teaching is what Seal refers to as the "vocabulary lesson". Here, as in Nation's (1990) direct vocabulary teaching, the primary objective of the activities in the course of a lesson is the presentation and practice of lexical items, where words are presented to the students in a thorough and systematic way.

Explicit and Implicit Vocabulary Learning

Whether vocabulary is naturally learned, as in Krashen's (1989) theory that "language is subconsciously acquired" (p.440), or has to be taught in order to be learned is an important question in applied linguistics. This leads us to consider the implicit and explicit vocabulary learning hypotheses.

Channell (1988) distinguishes language acquisition and learning. Unlike Carter's (1987) seven-levelled definition of what it is to know a word, Channell presents two stages of having acquired a word: 1) When the word can be recognised and understood both in and out of context; 2) when a word can be used naturally and appropriately to situation (p.84). Learning is the process which leads to the acquisition of words

(Channell, 1988). Channell also considers productive and receptive use of vocabulary that has been acquired.

Receptive acquisition, which precedes productive acquisition, is the stage in which the learner comprehends indirect vocabulary items. From there, the learner distinguishes important vocabulary and adds production to comprehension.

In order to reach the productive level of acquiring vocabulary, learners employ input and output channels in the process. The input channels involve the categorisation of sound patterns and recognition of orthographic patterns. The output channels are the speech output for pronunciation and the spelling output for orthographic sequencing.

The employment of the input and output channels of a learner can be attained through two learning styles. The first is implicit learning, which takes place without guidance. Through implicit learning, students mainly learn high frequency words since the input channels encounter these more than low frequency words. Thus, the output channels produce them faster; "the more patterns are repeated, the more frequent they are, the better they are acquired" (Ellis, 1995; p.14).

Explicit learning is active learning that is controlled. In explicit learning, students are taught strategies such as the keyword technique to help them

connect the form and meaning of words. Once students are taught explicit skills, they are able to use their metacognitive knowledge to choose a suitable learning strategy and become more successful (Ellis, 1995).

Explicit learning requires explicit strategy instruction. The following section will focus on the keyword technique and the dictionary-definition technique as two strategies that students can use to help them recall words.

Techniques Used in Vocabulary Teaching/Learning.

Within the framework of the general approaches to vocabulary teaching/learning some of the techniques are as follows: Pictorial Schemata, Definition, Explanation, Examples and Anecdotes, Word Roots and Affixes, and Context. There is also a category of Mnemonic techniques which embody techniques such as Visual aids, Lexical Sets, Keywords, Method of Loci, Peg word, Story making, First letter, and Chain Type (Celcia-Murcia, 1991).

This chapter will continue by looking at the attitudes toward the keyword technique and the role of dictionaries and their definitions in the EFL classroom.

The Keyword Technique

Mnemonic systems help connect the new lexical item to be remembered with an item already existing in memory. Moreover, mnemonic systems share the goal of implanting

an unfamiliar object, idea or word form into short-term or long-term memory through an association with a familiar object (Keller, 1978). The keyword technique is one of the mnemonic strategies that can be employed in learning vocabulary and is regarded as a highly effective way in remembering a word (Nation, 1990). Ellis (1995) indicates that by using various mnemonic techniques such as the keyword method, learners can enhance their retention of new words.

In learning a word, evidence shows that L2 is effected by L1. Borrowing and interference between the two languages is very common and results of various experiments conclude that "when some kind of cognitive operation other than simple recall of the phonetic form is called for, it does become extremely difficult to keep two languages apart. In this sense, forms in one language clearly evoke the corresponding related forms in the other language" (Meara, 1980, p.232). Based on this knowledge concerning the interference of L1 in L2 learning, the keyword technique can play an important role in storing lexical items in learners' memories.

A common belief among the advocates of the keyword technique and of other mnemonic techniques, is that it should not be seen as a substitution for other vocabulary teaching/learning techniques such as inferring or context, but rather as a helpful addition that enhances

storage (Hulstijn, 1997; Nattinger, 1988; Nation, 1990); and thus the meaning of mnemonic: to assist memory. As Nattinger (1988) indicates:

Words in our mental lexicon are tied to each other not only by meaning, form and sound, but also by sight-we link similar shapes in our mind's eye-and by other parts of the contexts in which we have learned or experienced them (p.64).

However, in spite of the fact that the keyword technique is accepted to be beneficial in enhancing the retention of words in the memory, Hulstijn (1997) points out that it has little appeal and that it is rarely used in the instruction of L2 languages in the Western world. Other researchers such as Nation (1990) and Nattinger (1988) also believe that there is a resistance toward introducing this technique in the classrooms because it is, at first, regarded as a "strange" and "unnatural" technique that is "not serious enough".

The Dictionary-definition Technique

In second language acquisition it is very common to use the dictionary as an aid to learning the meanings of unknown words. Hulstijn (1997) elaborates this technique for learning new lexical items by adding two more stages to it in order to increase retention: infer + look up + write down. Although consulting a dictionary after

inferring and then noting the word down fosters an elaborate processing of the word, which should, in turn, facilitate its retention in memory, Hulstijn claims that this procedure offers no guarantee for the retention of the link between the word's form and its meaning.

Referring to a recent study by Watanabe, Coady (1997) infers that second language learners often fail to recognise explanations and unless they notice the word and the relationship between its form and function, intake does not take place. Moreover, often a word will have more than a single meaning, thus learners systematically misinterpret dictionary entries. Wallace (1988) states that over-frequent use of dictionaries make students tired and it a time consuming process.

Recent Studies on Mnemonic Techniques

A recent study by Yayli (1995) examines the effectiveness of the keyword technique. The subjects of Yayli's study belonged to three Intermediate level intact classes. There were two experimental groups and one control group. One of the experimental groups was provided with the keyword whereas the other group was taught the system of generating a keyword and was asked to implement it during the course of the experimental test. The control group was subjected to sessions of rote-learning. Twenty target vocabulary items chosen

according to the criteria Atkinson (1975) suggests were given to the student in all three groups.

All of the chosen words were concrete nouns with no more than two syllables. Keywords and pictorial images were supplied to one of the experimental groups enabling the students to make connections between the words and the pictures. Yayli (1995) used rote-rehearsal techniques for the control group and a pre-test and post-test were given with the learning session taking place between these. Immediate and long-term retention tests provided results for this study, which was aimed at showing the effectiveness of the keyword technique in concrete vocabulary items. The findings of this study did not point out any significant difference in the results between the three treatments that were implemented.

A follow-up study to Yayli's (1995) was conducted by Kilinc (1996). Kilinc (1996) claims that the use of mnemonic techniques in teaching vocabulary should not be limited to concrete words. He aims at presenting abstract words, verbs and adjectives by using mnemonic audio-visual materials.

The study was conducted in four intact classes, two of beginner level and two of upper-intermediate level. The mnemonic audio-visual method was instructed to one group of each level while the other groups were required

to learn the vocabulary items by using their dictionaries. Each group was given twenty minutes to learn the same twenty target vocabulary items.

To test immediate recognition and recall, the students were first given a pre-test before the treatment and immediately given a post-test after the treatment. The post-test consisted of the same items placed in different order. To measure long-term retention, the same test was given to all the groups after a period of two weeks. The findings suggested that the mnemonic audio-visual technique is superior to the traditional dictionary look-up technique for recognition and recall. Moreover, the results showed that the treatment of mnemonic audio-visual technique worked well for the learning of both concrete and abstract words.

Conclusion

The two studies mentioned in this chapter dealt mainly with the mnemonic techniques encompassing the use of different methods and aids. However, they lack experimental evidence on whether words, regardless of the distinction of whether they are concrete or abstract, can be retained equally well without audio-visual aids and pictures. The effectiveness of the keyword technique when the keyword is supplied by the teacher is not dealt

with in either of the studies. This study aims at finding the effectiveness of teacher-supplied keywords.

CHAPTER 3: METHODOLOGY

Introduction

This is an experimental study focusing on the effectiveness of alternative methods of teaching second language vocabulary. A mnemonic technique using "keywords", which enables students to create images in their minds, is compared to the classic teacher-supplied dictionary-definition technique. The study was conducted at Middle East Technical University (METU). Two other studies of a similar nature have been conducted at METU, although, as mentioned in the previous chapter, the focal points of each were different than that being examined in this study.

This study focused on Pre-Intermediate level learners. Abstract and concrete words were not taken into consideration since it was noted that in previous studies the distinction between the two categories was not clearly defined and words that were categorised as abstract could also fall into the concrete category. In this study, the instruments used for measuring recall were tests in which the subjects were instructed to match the target English words with Turkish definitions. The instruments were applied to two groups. One group was trained on the keyword technique and the other group, on the dictionary-definition technique. Keywords and

dictionary definitions for the items to be learned were supplied to the respective groups by the researcher.

Subjects

The subjects were from the Middle East Technical University, Department of Basic English. Three intact pre-intermediate classes were chosen randomly. One of the classes was used for the screening test, one as the teacher-supplied keyword group, and the other as the teacher-supplied dictionary-definition group. Each class comprised sixteen students and their majors varied across the departments of the university.

Design of Materials

Selection of Items

Vocabulary items were chosen after textbooks used at the pre-intermediate level were examined to exclude any words occurring in the texts from the initial checklist. A list of 60 words was selected on the assumption that the students had not encountered them before. A screening test was administered in one of the classes in order to determine which words were unknown. This list was presented in a checklist format in which the students were asked to put a check next to all the words they had seen before or felt they were familiar with.

Twenty-one of the 60 items were not checked and 14 items were checked only once by students in the screening group. The selection of the 20 items to be used in the study itself were based on the following criteria from Atkinson (1975):

- 1) The words were not more than two syllables.
- 2) There was a concrete Turkish key word available for each English word.
- 3) The English words were not similar in sound or spelling to their Turkish translation and cognates were avoided.

The 21 items which no students claimed to recognise were analysed and the following five were eliminated: tariff, gamut, bevy, affinity, and stowaway. The word tariff was eliminated due to the fact that it had a cognate in Turkish. Gamut and bevy were left out due to their narrow range of use in English. Since the majority of the words that were unfamiliar to the students were comprised of one or two syllables, affinity and stowaway were eliminated so as to maintain consistency in the number of syllables in each word. This also coincided with Atkinson's first principal. In the next stage, the list of 14 words which had been recognised only once was analysed and the following four words were added to complete the list of 20 vocabulary items that was to be used in the study: pact, tinsel, hearse, and twitch.

Preparation of the Instruction Materials

Keyword Instruction Material

A sheet with the target words, their direct L1 equivalents, and a keyword was prepared (Appendix A). The order in which the words were presented was random. The equivalents in the L1 were taken from the Redhouse Bilingual English-Turkish Dictionary (1990). The Keywords were created by the researcher based on similarities of sound between the target word and the keyword.

Dictionary Definition Instruction Material

From the list of 20 items, 19 of the items were defined using the definitions supplied in the Collins Cobuild Dictionary for Learners (1994) since Collins is the official dictionary used at the DBE and all the students are familiar with it. The examples supplied were taken from this dictionary as well, and were at times modified. The definition for the one remaining word (femur) was not found in Collins Cobuild so The Random House Dictionary of the English Language (1987) was referred to (Appendix B). The consistency in the level of difficulty of the definitions was taken into account.

Preparation of the Testing Material

Each test (pre, immediate-recall, and delayed-recall) was designed as a matching test. There were 20 target words and 25 definitions. The 20 words were written on the left column of the paper with spaces to the left of them for responses. The 25 definitions, which were given in Turkish, were written on the right column of the page. The students were required to write the letter of the definition they chose next to the word given. The definitions were L1 translations of the Collins Cobuild Dictionary definitions. They were translated by the researcher into L1 and were translated back into English by a translator in order to assess their quality.

Procedure

The experimental procedure consisted of the following steps: 1) delivering a letter of application to the chairperson of School of Foreign languages, Department of Basic English, METU, 2) requesting permission from three teachers to conduct the experiment in their classrooms, 3) screening of the initial word list (15 March), 4) pre-testing and treatment (21 April), 5) delivery of immediate-recall tests (21 April), 6) delivery of delayed-recall tests (5 May).

After delivering a letter informing the chairperson of the DBE, METU of my wish to conduct an experiment and receiving permission to do so, I interviewed several teachers who were teaching reading and writing courses that semester and notified them of my aims and procedures in conducting this experiment. Three teachers agreed to assist and volunteered their classes for the experiment.

One of the classes selected served the purpose of identifying the 20 unknown vocabulary items. This screening test took 15 minutes, a time allowing the students to put checks next to the words which they knew.

Treatment and Testing Procedures

The treatment sessions focused on the 20 target vocabulary items. Each session took 20 minutes. Prior to the treatments, the groups were required to take a pre-test of the vocabulary items (Appendix C). The students were given 10 minutes to complete the pre-test, which was used to determine whether these students were familiar with any of the target vocabulary items. The results supported the conclusions from the earlier screening test that these items were unknown to the students.

In the keyword group, the researcher first familiarised the students with the technique that was to be implemented. Examples of three vocabulary items, which were not on the list, (Appendix D) were put up on the

blackboard and the students practised generating appropriate keywords and images. Next, the instructor handed out prepared photocopies with the 20 items and their keywords (Appendix A). For each one of the target vocabulary items, their Turkish translation equivalent was also presented. The researcher read this list out loud so that the students could recognise the pronunciations of the words. This was essential since the keywords were mainly based on sound similarity to the target words. Five minutes were allocated to the students to visualise these vocabulary items by the help of these keywords.

The dictionary-definition group was presented with the same 20 target vocabulary items and their definitions in English along with a sample sentence containing the word, illustrating its meaning and part of speech (Appendix B). The researcher read out the words and their definitions. The students were asked to read over the list one more time on their own for a period of five minutes.

The treatment sessions were followed by an immediate-recall test (Appendix E). The order of the definitions on the immediate-recall test and the pre-test were different.

The same test, but again with different ordering of definitions, that was given as the pre-tests and the

immediate-recall post-tests were administered to both groups after a three-week period (Appendix F). This delayed-recall test was given in order to measure long-term recall. Both the immediate and delayed-recall tests were completed in 15 minutes.

Data Analysis

Data analysis compared learning differences between the keyword and dictionary-definition groups' in short-term and long-term recall of vocabulary items. The researcher calculated the means and standard deviations of both groups, for both tests, and then used t-test calculations to compare the means of the two groups on each test. The researcher also used the t-test to assess the results of the means of the immediate-and delayed-post-tests within the groups themselves.

CHAPTER 4: DATA ANALYSIS

Overview of the Study

This study aimed at investigating the effects of the teacher-supplied keyword technique and the teacher-supplied dictionary-definition technique in two intact classes at a Turkish university. A total of 32 students participated in the experiment. Twenty vocabulary items, which were chosen according to the criteria set by Atkinson (1975), were used to test the immediate and the delayed-recall of the students. The experiment took place on two separate days. The first session, which involved the pre-test, the treatment, and the immediate-recall test, lasted one class session of 50 minutes. The next session, which involved the delayed-recall test, lasted 15 minutes.

The three sets of tests required the students to match the target language vocabulary items with L1 definitions that were direct translations of definitions taken from the Collins Cobuild Dictionary for Learners.

To analyse the difference, if any, between the teacher-provided keyword and the teacher-provided dictionary-definition group, t-test calculations were carried out with the results of the immediate post-test and the delayed post-test .

Data Analysis Procedures

The analyses of the study were carried out in the following four stages: the analysis of the checklist, the scoring of the pre-test, the scoring of the immediate post-test, the scoring of the delayed post-test. The first two steps did not consist of any statistical calculations. They were carried out to establish the frequencies of the familiar words and to understand which words were randomly selected.

The scoring of the pre-test, immediate post-test , and delayed post-test for recall was done on a five point per correct answer scale. Non-answers were counted as incorrect. Therefore, since there were 20 words the total score amounted to 100. The statistical analysis approach for both tests was to calculate the mean and standard deviation of each group. The t-test results enabled the researcher to compare the means between the two groups.

The next stage was to compare the results of the immediate-recall test and the delayed-recall test across the groups. Using the means and standard deviations t-test scores were calculated. This enabled the researcher to see whether one treatment proved better than the other in terms of immediate and delayed-recall.

The aim of the analysis was to test the following null hypothesis: There is no significant difference in

the recall of items in connection to the two treatments implemented on the subjects.

Results of the Study

Results of the Initial Pre-tests

The results of the pre-tests conducted prior to the treatment for both groups showed that only two words were answered correctly by more than two students in each group and that the remaining items were either left unanswered, answered incorrectly or that only one student in each group managed to find the correct match for each of the items out of the 20. This result led the researcher to conclude that the subjects randomly assigned the correct answers. The initial pre-test supported the validity of the results obtained from the checklist.

Results of the Immediate Recall Tests

The calculations of means and standard deviations provided data for the calculation of the t-test. An examination of the means and standard deviations shows that there is a slight difference between the means of the dictionary-definition group and the keyword group. In order to see if this difference in means was significant, t-test calculations were carried

out. Below are the representations of the t-test results.

Table 1.

T-Test Results for the Immediate Recall Tests

Group	M	SD
Keyword	73.75	19.01
Dict. Def.	74.68	19.61
Between Groups	<u>df</u>	<u>t</u>
	30	0.13

Note. P \leq .10

According to the results of the t-test for the immediate-recall tests, there is no significant difference between the two groups' recall of vocabulary items. Both groups' recall of the vocabulary items were high, as shown by the means of 74.68% and 73.75%.

Results of the Delayed-recall tests

The next step in the analysis was to score and analyse the results of the delayed-recall tests.

Table 2 displays the means and standard deviations of the delayed-recall tests of the keyword and the dictionary-definition group. The results show that the mean of the keyword group is higher than the dictionary-definition group. In order to clarify whether the

difference in mean was significant, a t-test was carried out.

Table 2.

T-Test Result for the Delayed-recall Tests

Group	M	SD
Keyword	38.12	10.46
Dict. Def.	31.25	24.86
Between Groups	<u>df</u>	<u>t</u>
	30	.60

Note. P£.10

The result shows that there is no significant difference between the two groups' recall of vocabulary in the delayed-recall tests.

Results of the Immediate and Delayed Tests for Comparison Within Groups

The next stage of the analysis was to compare the means of the immediate-recall test and delayed-recall test within each group to see whether there was a significant difference between the recall level of the vocabulary items in relation to each technique.

Table 3 presents the results of the calculations for the comparisons of the means within each group.

Table 3.

T-test Results of the Immediate and Delayed Tests for
Comparison Within Groups

Group	Dic. Def.		Keyword	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Imm. Re.	74.68	19.68	73.75	19.01
Del. Re.	31.25	24.8	38.12	10.46
Within Groups	<u>df</u> 30	<u>t</u> 5.49*	<u>df</u> 30	<u>t</u> 6.57*

Note. *p<.001

Note. Imm. Re.=Immediate Recall; Del. Re.=Delayed Recall

Table 3 indicates that in both groups there was a significant difference between immediate and delayed results. Based on the decline in the means, it can be said that recall declined significantly over the three-week period.

CHAPTER 5: CONCLUSION

Introduction

The purpose of this study was to determine which of the two techniques, the keyword technique and the dictionary-definition technique, was more effective in helping students recall words. The study was conducted at Middle East Technical University, Department of Basic English.

The subjects were students from three intact pre-intermediate classes that were chosen randomly. One of the classes were subjected to the screening test and were not involved in the remaining procedures of the experiment. The remaining two classes were assigned as the teacher-supplied keyword group, and the teacher-supplied dictionary-definition group. Each class comprised sixteen students, who had different majors.

The procedure of the study was as follows: both classes received a pre-test, their treatment, and an immediate-recall test during their first sessions. The pre-test aimed at making sure that the subjects did not know the words prior to the treatment. The immediate-recall test was implemented directly after the treatments. The second session, which involved the implementation of the delayed-recall test, took place three weeks after the first session.

The data collection instruments were the immediate-recall tests and the delayed-recall tests. They were graded on a 5 point per word scale and their means and standard deviations were calculated. Then a t-test was carried out for each set of results. This enabled the researcher to compare the means of the results between the two groups and within the groups.

General Results

This study focused on four questions. The results of the data analyses provided answers for these questions. The first question dealt with the findings obtained from the immediate-recall tests. The result of the t-test for the immediate-recall tests showed that there was no significant difference between the two groups in relation to their level of recall. The means for both groups were quite high. This result was an expected by the researcher, due to the fact that both the keyword technique group and the dictionary-definition group had taken the test immediately after presentation of the words and the treatment.

The second research question was whether there was a significant difference in the results of the delayed-recall test between the keyword technique group and the dictionary-definition group. Contrary to the expectations of the researcher, the t-test proved that there was no

significant difference. Moreover, the calculations of the means of both groups displayed that there was a sharp decrease in the recall of the vocabulary items. These results implied that neither technique proved to be better than the other.

The remaining two questions dealt with the comparison of the results of the immediate-recall tests and the delayed-recall tests within the groups. The t-test carried out with the results of the keyword technique group showed that there was a significant difference between the results of the immediate-recall test and the delayed-recall test. The same result was obtained from the t-test calculations for the dictionary-definition group. The decline in the means and the significant differences of the immediate-recall tests and the delayed-recall tests within the two groups indicates that neither of the techniques proved to be more effective than the other.

The results obtained from the tests were unexpected, since most of the research carried out by Presley, Levin and Delaney, (1982); cited in Nation, (1993) indicated that the keyword technique was 25% more effective than various other techniques. Literature on the keyword technique also suggests that the more words are analysed and are enriched by associations or images, the longer they will stay in the memory. When compared to the

dictionary-definition technique, the keyword technique did not result in higher recall of words in a class of pre-intermediate students at METU.

The study carried out by Yayli (1995) at DBE, METU aimed at finding out whether the keyword technique is superior to other techniques. Yayli's experiment involved three techniques; provided keyword technique, student-generated keyword technique, and rote-learning technique. The results of this study showed that there was not any significant difference between the three treatments implemented. Yayli's study was similar to this study in that one of the groups in both studies were supplied with the keyword during their treatments. Thus, the similarity in the results may be attributed to this.

The follow up study conducted at DBE, METU by Kilinc (1996), however, suggested that the mnemonic audio-visual technique is superior to the dictionary look-up technique. The study by Kilinc was different to this study in that this study did not provide visual aid. This difference in treatment may have caused the diversity in the results.

Levin et al. (1992) compared the keyword technique of verbal and visual cues with the contextual verbal cue technique. All the results of the four experiments carried out showed that the subjects of the keyword technique performed better than the subjects of the

contextual verbal cue technique. This study supports the findings of Kilinc's (1996) study and the similarity in the two studies suggests that visual aid helps subjects recall items better than verbally supplied words in both the keyword technique and the contextual verbal cue technique.

The experiment conducted for this study differed from Yayli's (1995) and Kilinc's (1996) in that the test was designed as a matching test in which the subjects had to match the 20 English vocabulary items with 25 Turkish definitions. This was done in order to eliminate the possibility of one group being advantaged over the other, because the keyword technique group was supplied with the Turkish equivalents of the words along with the keywords and the dictionary-definition group was supplied with the English definitions of the words. Therefore, by designing the test this way, the researcher ensured that neither of the two groups was familiar with the answers. However, this design was much harder for the students, since it required translation skills to some extent. Therefore, the reason for the low recall might be attributed to the test design.

Limitations

This study was carried out in two pre-intermediate classes at the DBE, METU. The experiment involved a

total of 32 subjects. This number is low and can not lend itself to generalisations. Furthermore, it is limited to only one level of learners; thus, the results can not be attributed to learners of other levels such as beginner, elementary, intermediate, and upper-intermediate level students.

As mentioned in the previous section, the design of the test could have led to the low recall of the words. The subjects were required to use translation skills in the immediate-recall and delayed-recall tests. The subjects did not receive any practice in doing this, so, they were unfamiliar with the test design and what was required of them.

Implications

The data obtained from this study lead to several questions for further research. This study may be replicated with a larger number of subjects of different levels of language proficiency in order to increase the generalisability of the findings.

This research study focused was conducted during the second semester of the academic calendar of the DBE, METU. A similar experiment could be conducted at the beginning of the academic year and could be carried over to the second half of the year to observe the effects of the two techniques in the long term. A study as such

could provide insight as to which technique is superior when it is introduced and practised several times.

Another suggestion for further research is to increase the number of vocabulary items. With the increase of items, the treatment duration will increase and the effects of longer treatment sessions could be assessed.

Finally, researchers may want to classify students according to their learning preferences. This would lead to interesting results based on the choice of techniques the students make themselves.

Conclusion

This study aimed at finding which technique; the keyword or the dictionary-definition, was superior at a Turkish university. The results did not show any significant differences. However, the limitations mentioned previously should be taken into consideration and further study could carry interesting implications that might help the instructors' and learners' approach toward teaching and learning words.

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Appendix A
Keyword Instruction Material

<u>ENGLISH</u>	<u>TURKISH</u>	<u>KEYWORD</u>
1) OTTER	1) SUSAMURU	1) OTYER
2) HALO	2) IŞIK HALKASI	2) HALAY
3) MOAN	3) İNİLTİ	3) OZON
4) DREGS	4) TORTU	4) ELEK
5) SENTRY	5) NÖBETÇİ	5) ENTARİ
6) VEIL	6) DUVAK, PEÇE	6) MEYİL
7) TWITCH	7) SEĞİRME	7) VİNÇ
8) TINSEL	8) GELİN TELİ	8) TENSEL
9) BINGE	9) İÇKİ ALEMİ	9) BİLİNÇ
10) USHER	10) YER GÖSTERİCİ	10) AŞIRMA
11) BLEMISH	11) LEKE	11) TEFTİŞ
12) PERİL	12) TEHLİKE	12) PERİ
13) HAMPER	13) KAPAKLI SEPET	13) AMBAR
14) BIAS	14) TARAF TUTMA	14) KALAS
15) FEMUR	15) UYLUK KEMİĞİ	15) FERMUAR
16) TRUCE	16) ATEŞKES	16) TAARRUZ
17) FLURRY	17) HAFİF SAĞNAK	17) FUZULİ
18) PRAM	18) BEBEK ARABASI	18) ANNEM
19) PACT	19) SÖZLEŞME	19) PAKET
20) HEARSE	20) CENAZE ARABASI	20) ÖRTÜ

Appendix B
Dictionary - Definition Instruction Material

- 1.BINGE You go on a binge when you go somewhere and
 drink a lot of alcohol.
 e.g. The groom went on a binge with his friends
 the night before the wedding.

- 2.TINSEL Small pieces of sparkling, coloured paper
 attached to long pieces of thread.
 e.g. We used tinsel to decorate the house on
 New Years Eve.

- 3.HEARSE A large car that carries the coffin at a
 funeral.
 e.g. The hearse of Atatürk was driven through
 the streets of Istanbul.

- 4.BLEMISH : A mark that spoils the appearance of something.
 e.g. She was born with a blemish on her face.

- 5.OTTER A small animal with a long tail.
 e.g. Otters swim well and diet on fish and
 plants.

- 6.PERIL A great danger.
 e.g. The Kosovars are in great peril.

- 7.FLURRY A small amount of wind or snow that moves
 suddenly and quickly.
 e.g. A flurry of wind blew the bald man's hat
 off.

- 8.MOAN A low and miserable cry because you are in
 pain or suffering.
 e.g. The child gave a moan when the doctor
 put the needle in his arm.

- 9.HALO A circle of light that is drawn in pictures
 round the heads of saints or angels to show
 that they are holy.
 e.g. My son drew a picture of an angel but
 forgot to draw the halo above its head.

- 10.PACT A formal agreement between two or more people
 or governments to do a particular thing or to
 help each other.
 e.g. Turkey signed a military pact with Israel.

11. USHER A person who shows people where to sit, for example at a wedding or concert.
e.g. The usher led us to our seats in the dark.
12. PRAM A baby's bed on wheels.
e.g. I saw a very young girl pushing a pram.
13. HAMPER A large basket with a lid used especially for carrying food.
e.g. We prepared a big hamper and went to Eymir.
14. SENTRY A soldier who guards a building or a camp.
e.g. This is the place where sentries keep watch.
15. TRUCE An agreement between two people or groups to stop fighting for a short time.
e.g. The two countries made a truce during the religious holiday.
16. DREGS The last drops of liquid left at the bottom of a container, with any solid bits that have sunk to the bottom.
e.g. He was so thirsty that he drank all the water in the glass, even the dregs.
17. FEMUR The longest, largest, and strongest bone in the body starting from the thigh to the knee.
e.g. A soccer player's professional life comes to an end if he breaks his femur.
18. BIAS A person shows bias when they are unfair in their judgements or decisions, because they allow themselves to be influenced by their own opinions rather than considering the facts.
e.g. There is an intense bias against women in most cultures.
19. VEIL A piece of thin, soft material that women sometimes wear over their heads.
e.g. The bride's head was covered in a white veil.
20. TWITCH : A little, sudden muscle movement.
e.g. Her hands showed twitches of nervousness.

Appendix C
Pre-Test

_____ 1. flurry	A. Kişinin bir yere gittiğinde çok alkol tükettiği duruma verilen ad.
_____ 2. bias	B. Aziz ve meleklerin resmedilirken kutsal olduklarını göstermek amacıyla başlarının üzerine çizilen daire.
_____ 3. hearse	C. Özellikle yiyecek taşımak amacıyla kullanılan saz ya da kamıştan yapılmış üzeri örtülebilen büyük kap.
_____ 4. moan	D. Ani ve küçük kas hareketi.
_____ 5. truce	E. Kişinin hak ve hukuka uygun olma durumu.
_____ 6. dregs	F. Uzun ipliklere iliştilmiş küçük, renkli ve parlak kağıtlar.
_____ 7. otter	G. Kadınların bazen başlarına örttükleri ince, yumuşak kumaş parçası.
_____ 8. blemish	H. Vücudumuzda kalçayla diz arasında bulunan en uzun, büyük ve kuvvetli kemik.
_____ 9. halo	I. Yeni doğan çocukları taşımaya yarayan tekerlekli araç.
_____ 10. sentry	J. En az iki kişi veya hükümet arasında karşılıklı yardımlaşma veya herhangi bir konuda işbirliği yapmaya yönelik resmi anlaşma.
_____ 11. peril	K. Kişinin sergilediği tutum, davranış veya tavır.
_____ 12. hamper	L. İki insan veya grup arasında kısa bir süre için kavgaya ara vermek üzere varılan anlaşma.
_____ 13. femur	M. Düğünlerde veya konserlerde davetlileri salona yerleşmelerine yardımcı olan görevli.
_____ 14. veil	N. Kişinin gerçekleri gözardı edip kendi düşüncelerini ön plana çıkartarak vardığı haksız yargılar veya kararlar.
_____ 15. pact	O. Bir kabın içindeki sıvının kalan son damlaları ve dibe çökmüş katı tanecikleri.
_____ 16. tinsel	P. Birşeyin görüntüsünü bozan iz ya da nokta.
_____ 17. binge	Q. Tabut taşıyan büyük araç.
_____ 18. usher	R. Büyük zarar veya yokolmaya neden olabilecek durum.
_____ 19. twitch	S. Yeni anlam veya kelimeler bulan ve kullanan kimse.
_____ 20. pram	T. Bir kişinin acı veya eziyet çekerken çıkardığı alçak tonda hüzünlü ağlama sesi.
	U. Uzun kuyruklu bir hayvan.
	V. Bir kampı veya binayı koruyan ordu görevlisi.
	W. Ani ve kısa süren hafif rüzgar veya kar.
	X. Maden cevherini ayırma işinde kullanılan demir tava.
	Y. Sükut ve düzeni korumakla görevli olan kimse.

Appendix D
Words Used in Keyword Practise Session

Crease

Engine

Paddock

Appendix E
Immediate-Recall Test

_____ 1. flurry	A. Ani ve küçük kas hareketi.
_____ 2. bias	B. En az iki kişi veya hükümet arasında karşılıklı yardımlaşma veya herhangi bir konuda işbirliği yapmaya yönelik resmi anlaşma.
_____ 3. hearse	C. Kişinin gerçekleri gözardı edip kendi düşüncelerini ön plana çıkartarak vardığı haksız yargılar veya kararlar.
_____ 4. moan	D. Kişinin bir yere gittiğinde çok alkol tükettiği duruma verilen ad.
_____ 5. truce	E. Kişinin hak ve hukuka uygun olma durumu.
_____ 6. dregs	F. Uzun ipliklere iştirilmiş küçük, renkli ve parlak kağıtlar.
_____ 7. otter	G. Kadınların bazen başlarına örttükleri ince, yumuşak kumaş parçası.
_____ 8. blemish	H. Vücudumuzda kalçayla diz arasında bulunan en uzun, büyük ve kuvvetli kemik.
_____ 9. halo	I. Kişinin sergilediği tutum, davranış veya tavır.
_____ 10. sentry	J. Aziz ve meleklerin resmedilirken kutsal olduklarını göstermek amacıyla başlarının üzerine çizilen daire.
_____ 11. peril	K. Birşeyin görüntüsünü bozan iz ya da nokta.
_____ 12. hamper	L. İki insan veya grup arasında kısa bir süre için kavgaya ara vermek üzere varılan anlaşma.
_____ 13. femur	M. Düşünlerde veya konserlerde davetlileri salona yerleşmelerine yardımcı olan görevli.
_____ 14. veil	N. Özellikle yiyecek taşımak amacıyla kullanılan saz ya da kamıştan yapılmış üzeri örtülebilen büyük kap.
_____ 15. pact	O. Bir kabın içindeki sıvının kalan son damlaları ve dibe çökmüş katı tanecikleri.
_____ 16. tinsel	P. Yeni doğan çocukları taşımaya yarayan tekerlekli araç.
_____ 17. binge	Q. Tabut taşıyan büyük araç.
_____ 18. usher	R. Büyük zarar veya yok olmaya neden olabilecek durum.
_____ 19. twitch	S. Yeni anlam veya kelimeler bulan ve kullanan kimse.
_____ 20. pram	T. Bir kişinin acı veya eziyet çekerken çıkardığı alçak tonda hüzünlü ağlama sesi.
	U. Sükut ve düzeni korumakla görevli olan kimse.
	V. Bir kampı veya binayı koruyan ordu görevlisi.
	W. Ani ve kısa süren hafif rüzgar veya kar.
	X. Maden cevherini ayırma işinde kullanılan demir tava.
	Y. Uzun kuyruklu bir hayvan.

Appendix F
Delayed-Recall Test

_____ 1. flurry	A. Ani ve küçük kas hareketi.
_____ 2. bias	B. Aziz ve meleklerin resmedilirken kutsal olduklarını göstermek amacıyla başlarının üzerine çizilen daire.
_____ 3. hearse	C. En az iki kişi veya hükümet arasında karşılıklı yardımlaşma veya herhangi bir konuda işbirliği yapmaya yönelik resmi anlaşma.
_____ 4. moan	D. Kişinin bir yere gittiğinde çok alkol tükettiği duruma verilen ad.
_____ 5. truce	E. Kişinin hak ve hukuka uygun olma durumu.
_____ 6. dregs	F. Uzun kuyruklu bir hayvan.
_____ 7. otter	G. Uzun ipliklere iştirilmiş küçük, renkli ve parlak kağıtlar.
_____ 8. blemish	H. Kişinin sergilediği tutum, davranış veya tavır.
_____ 9. halo	I. Yeni doğan çocukları taşımaya yarayan tekerlekli araç.
_____ 10. sentry	J. Düğünlerde veya konserlerde davetlileri salona yerleşmelerine yardımcı olan görevli.
_____ 11. peril	K. Vücudumuzda kalçayla diz arasında bulunan en uzun, büyük ve kuvvetli kemik.
_____ 12. hamper	L. Özellikle yiyecek taşımak amacıyla kullanılan saz ya da kamıştan yapılmış üzeri örtülebilen büyük kap.
_____ 13. femur	M. Kişinin gerçekleri gözardı edip kendi düşüncelerini ön plana çıkartarak vardığı haksız yargılar veya kararlar.
_____ 14. veil	N. İki insan veya grup arasında kısa bir süre için kavgaya ara vermek üzere varılan anlaşma.
_____ 15. pact	O. Tabut taşıyan büyük araç.
_____ 16. tinsel	P. Sükut ve düzeni korumakla görevli olan kimse.
_____ 17. binge	Q. Bir kabin içindeki sıvının kalan son damlaları ve dibe çökmüş katı tanecikleri.
_____ 18. usher	R. Maden cevherini ayırma işinde kullanılan demir tava.
_____ 19. twitch	S. Yeni anlam veya kelimeler bulan ve kullanan kimse.
_____ 20. pram	T. Kadınların bazen başlarına örttükleri ince, yumuşak kumaş parçası.
	U. Bir kişinin acı veya eziyet çekerken çıkardığı alçak tonda hüzünlü ağlama sesi.
	V. Ani ve kısa süren hafif rüzgar veya kar.
	W. Birşeyin görüntüsünü bozan iz ya da nokta.
	X. Büyük zarar veya yokolmaya neden olabilecek durum.
	Y. Bir kampı veya binayı koruyan ordu görevlisi.