Kingdom of Saudi Arabia

Ministry of Higher Education

Taif University

Faculty of Education

Dept. of Curricula & Educational Technology

The Effectiveness of Keyword-based Instruction in Enhancing English Vocabulary Achievement and Retention of Intermediate Stage Pupils with Different Working Memory Capacities

A Thesis Submitted in Partial Fulfillment of the Requirements for Master's Degree of Education

(Curricula & Methods of Teaching English)

By

Mona Abdullah Bakheet Al-Zahrani

Supervised by

Dr. Mervat Mohamed Saleh El-Hadidy

Associate Professor of Curricula and Methods of Teaching English

Faculty of Education - Taif University

2011

بسم الله الرحمن الرحيم

Kingdom of Saudi Arabia

Ministry of Higher Education

Taif University

Faculty of Education

Dept. of Curricula & Educational Technology

Approval Sheet

The Effectiveness of Keyword-based Instruction in Enhancing English Vocabulary Achievement and Retention of Intermediate Stage Pupils with Different Working Memory Capacities

By

Mona Abdullah Bakheet Al-Zahrani

COMMITTEE

1- Prof. Ali Abdulsamea Qoura   External Member   ------------

Prof. of Curricula and Methods of Teaching English, Faculty of Education, Taibah University

2- Dr. Mahmoud Mohamed Mohasseb   Internal Member

Associate Prof. of Curricula and Methods of Teaching English, Faculty of Education, Taif University

3- Dr. Mervat Mohamed El-Hadidy   Member and Supervisor

Associate Prof. of Curricula and Methods of Teaching English, Faculty of Education, Taif University

Date of Discussion: 24 / 5 / 2011 .

Acknowledgements

Abstract

The current study aimed at investigating the effectiveness of keyword-based instruction in enhancing English vocabulary achievement and retention of intermediate stage pupils with different working memory capacities. The study adopted a quasi experimental design employing two groups (experimental and control). The design included an independent variable (keyword method), two dependent variables (vocabulary achievement and vocabulary retention) which were measured by the achievement vocabulary test and a classification variable (working memory capacity) which was measured by working memory tasks.

The sample of the study consisted of 3rd intermediate grade pupils from two intermediate schools in Taif (N=96). The pupils were divided into two groups experimental and control. The experimental group (N=47) was taught the vocabulary of the first term of English language book of 3rd intermediate grade through keyword method. The control group (N=49) was taught the same vocabulary through traditional method. The two group's scores were analyzed using Two-way ANOVA. Results revealed that keyword method had a positive effect on the learners' vocabulary achievement and retention. Also, results showed that pupils with high WMC were better than pupils with medium and low WMC in both vocabulary achievement and retention. Finally, the results revealed that the interaction between keyword method and WMC had a main effect on both dependent variables (Vocabulary achievement and retention).

Table of Contents

List of Tables

List of Figures

List of Appendices

Chapter One

The Problem of the Study

Chapter One

The Problem of the Study

Introduction

Language is one of the most essential means of communication between communities and individuals. Anyone who wants to convey messages or feelings whether orally or in a written form should use language. It is known that English language is considered by many people to be one of the important languages all over the world because it is an international one. Thus, learning and teaching English as a second language (ESL) / as a foreign language (EFL) has become necessary in all countries that don't use English as a first language. In order to achieve the process of learning English, one must acquire its vocabulary, grammar, pronunciation and the four skills: listening, reading, speaking, and writing.

Vocabulary teaching and learning represents one of the major challenges that faces EFL / ESL teachers and learners. Most ESL/EFL learners have difficulties in communicating with English language because of their limited vocabulary. In order to overcome these challenges they should use effective strategies that enhance vocabulary achievement and retention .

Vocabulary can be taught either directly through explicit instruction or indirectly through implicit instruction such as reading and discussion. Nevertheless , it appears that direct instruction is more effective and efficient than indirect for the acquisition of a particular vocabulary (Marefat & Shirazi, 2003; D'Alesio, et al. 2007 and Min, 2008).This direct teaching requires giving attention to the information in order not to be forgotten. Beside the attention, language learners need all information of language to be learnt - including vocabulary - transferred into long-term memory (LTM). This process is called encoding.

"It has therefore been of interest to the cognitivists how this 'encoding' process could be achieved, how LTM operates and how information can be retrieved from this store, reversing the path and transferring information from LTM to shot-term memory (STM) or working memory (WM). Therefore, learners need appropriate strategies to achieve success" (Mayer, 1998 cited in Hauptmann, 2004, p. 39).

Thus, in order to learn vocabulary of any foreign language effectively and not to be forgotten, learners should store them in their LTM to be able to retrieve them later on when needed. One of the strategies which is used to encode vocabulary in LTM effectively is mnemonic strategies. Mnemonic strategies are systematic procedures for enhancing memory. Their particular use is in developing better ways to take in information so that it will be much easier to remember (Mastropieri & Scruggs , 1998).Mnemonics help learners to minimize the load on working memory in order not to lose what they learn previously. They include many methods such as keyword method , pegword method, and first letter method. The keyword method is mostly used in teaching and learning vocabulary. It facilitates the storing of new vocabulary in LTM and recalling them later on by WM.

On the other hand, different working memory capacities (WMCs) play an important role in the process of encoding such new vocabulary. Mendonça (2003) mentions that learners with high WMC are better able to both comprehend and produce new vocabulary than those who have low WMC.

Therefore, learners need to apply strategies that help them to lessen the burden on WM in order to obtain larger WMC and use it in learning. The present study tried to examine one of these strategies , i.e. keyword method and its effectiveness in enhancing vocabulary achievement and retention in the light of different WMCs .

Background of the Problem

Vocabulary has a crucial role in English language academic achievement. Literature mentioned that there is a great link between vocabulary and reading comprehension of ESL / EFL learners. This direct link greatly impacts academic growth and performance (Glowacki, et al. 2001; Gaudio, 2003 and Chang, 2006) .

One of the goals of teaching English as a foreign language (TEFL) for the intermediate school pupils in Saudi Arabia is learning the assigned vocabulary that will enable learners to express themselves in different life situations. Hulstijn & Laufer (2001) assured that those who are in the intermediate and advanced levels of EFL must acquire many thousands of vocabulary in order to learn the language. That's why EFL teachers should focus on teaching vocabulary effectively whether directly or indirectly.

In order to investigate the situation of vocabulary achievement and retention of 3rd intermediate grade pupils, the researcher asked one of EFL teachers at 46th intermediate school to give her a sample (N=15) of pupils' writing on one of the units (Save Our Planet) from English language book of 3rd intermediate grade (*Say It in English*).The researcher found that pupils were able to use only nine vocabulary out of total learned vocabulary of the whole unit (N=31) with proportion of 29,03%. This might be due to whether the ineffective vocabulary learning or teaching strategies which lead pupils to forget what they learned throughout that unit.

Therefore, learners should use effective vocabulary strategies to develop their vocabulary knowledge that facilitate English language learning and help them to be successful learners. The study of Thu (2009) in Taiwan was conducted to examine language learning strategies employed by successful learners of English as a foreign and as a second language. It is found that strategies for vocabulary learning outnumbered those for other language skills and areas investigated.

There are several strategies for vocabulary teaching and learning. The results of some researches (Marefat & Shirazi, 2003; Issariya, 2004; Al-Jarf, 2006 and Yek, 2006) showed that memory strategies are the most effective strategies that facilitate learners' vocabulary achievement. The role of memory is crucial in any kind of learning because all learning is, in fact, remembering. Marzona (2004) assures that if academically oriented experiences are not stored in permanent memory, they are not added to academic background knowledge.

One of the strategies that enhances memory is mnemonic strategies. There are several studies and researches (e.g. Bielsker, et al. 2001; Zutaut, 2002; Alfi, 2004 and Ali, 2007) that investigated the effectiveness of mnemonic strategies in science learning generally and in vocabulary learning particularly. The results of these researches and studies showed that mnemonic strategies enhance retention and retrieving of the learned materials. These strategies include several methods such as pegword method , keyword method, loci method and first letter method. Most researches (e.g. Abdel-Majeed, 2000; Hauptmann, 2004 and Abdul Razak, 2008) agreed that keyword method is highly used with vocabulary learning. The results of these researches showed that the application of keyword method had been successful factor in helping learners with the new vocabulary development and retention .

Lin (2002, p.65) pointed that " *there are several problems facing learning English vocabulary. These include forgetting new vocabulary because learners do not use them in their daily life since they are not surrounded by English speakers.*" Also, learners have trouble memorizing and remembering the spelling of new vocabulary coupled with difficulty in pronunciation. Al-Atoom (2004) mentioned that the concept of forgetting is related to remembering which limits the retrieving of what has been learned previously from LTM and then transferring it to working memory (WM). The material to

be remembered is found in the memory although we fail in retrieving it. He added that a lot of studies agree that our inability in remembering the information raced back to the failure of encoding them, inaccuracy of storing them and the decrease of the attention during processing information.

Thus , the attention is an important factor during storing vocabulary and it is related to working memory capacity (WMC). The differences in WMC influence the attention of the individuals as mentioned by Tuholski et al. (2001). Also, reading comprehension which is heavily based in vocabulary is related to WMC as a result of the attention which must be given to the decoding of relating new vocabulary (Molloy, 1997).

Furthermore, Mendonça (2003) concluded that there was a relationship between WMC and vocabulary retention. The higher capacity were better in both comprehending and producing new vocabulary. Soriano & Bajo (2007) agreed with the previous result and asserted that individuals with low WMC showed greater direct forgetting tasks effects than individuals with high WMC. Dmitsak (2007) claims that since people with low WMC can not hold as much information in their WM, they may derive particular benefit from encoding strategies that reduce memory load and one of such is mnemonic strategies .

From the previous presentation, it is noticed that although literature paid great attention to the importance of vocabulary achievement and retention, keyword method and the different WMCs, there is no Arabic study investigated the relationship between these three variables together to the farthest knowledge of the researcher. This motivated the researcher to conduct this study which investigated the effectiveness of keyword-based instruction in enhancing English vocabulary achievement and retention of 3rd intermediate grade pupils with different WMCs.

Statement of the Problem

Based on literature and result of the pilot study, the problem of the study can be stated as follows:

3rd intermediate grade female pupils seem to face difficulty in English vocabulary achievement and retention. This difficulty might be a result of ineffective vocabulary teaching methods and their inadequacy of pupils' different WMCs which affect their vocabulary achievement and retention.

Questions of the Study

This study aimed at answering the following major question :

what is the effectiveness of keyword-based instruction in enhancing English vocabulary achievement and retention of 3rd intermediate grade pupils with different WMCs ?

This question was divided into the following sub-questions :

1. How effective is the keyword-based instruction in enhancing English vocabulary achievement of 3rd intermediate grade pupils with different WMCs ?

2. How effective is the keyword-based instruction in enhancing English vocabulary retention of 3rd intermediate grade pupils with different WMCs ?

3. What is the effect of the interaction between teaching method (keyword method-traditional method) and WMC (high-medium-low) on English vocabulary achievement of 3rd intermediate grade pupils?

4. What is the effect of the interaction between teaching method (keyword method-traditional method) and WMC (high-medium-low) on English vocabulary retention of 3rd intermediate grade pupils?

Purpose of the Study

This study was intended to :

1. Investigate the effectiveness of keyword-based instruction in enhancing English vocabulary achievement of 3rd intermediate grade pupils with different WMCs.

2. Investigate the effectiveness of keyword-based instruction in enhancing English vocabulary retention of 3rd intermediate grade pupils with different WMCs .

3. Measure the effect of interaction between teaching method (keyword method-traditional method) and WMC (high-medium-low) on English vocabulary achievement of 3rd intermediate grade pupils.

4. Measure the effect of interaction between teaching method (keyword method-traditional method) and WMC (high-medium-low) on English vocabulary retention of 3rd intermediate grade pupils.

Significance of the Study

1. Directing the attention of EFL teachers and learners towards the effectiveness of keyword method in vocabulary achievement and retention.

2. Enriching teaching activities that improve retention of English vocabulary through the designed worksheets.

3. Providing a teacher's guide that helps teachers to use keyword method in teaching new vocabulary of 3rd grade intermediate English language course, 1st term.

4. Directing the attention of EFL curriculum designers to integrate both visual and verbal materials in an interacting way in order to enhance long-term retention.

5. Shedding the light on working memory capacity concept and its role in learning English vocabulary

Limitations of the Study

The study was limited to:

1. A random sample of 3rd intermediate grade female pupils from two of the governmental intermediate schools in Taif.

2. The vocabulary of the units 1-7 except 4 (revision unit) in the English language book of 3rd intermediate grade (*Say It in English*) in the 1st term of the academic year 1431-1432 H.

3. Measuring vocabulary achievement at the following levels: (knowledge, comprehension and application) as they are the most familiar to the pupils' level and age. These levels have been analyzed by the researcher from the instructional objectives of 3rd grade intermediate English language course.

Methodology

A) Subjects:

The subjects (N=96) were randomly selected from two intermediate schools in Taif : 3rd intermediate school and 22nd intermediate school which were also randomly selected. Pupils in the 3rd intermediate school (N= 47) represented the experimental group. On the other hand, pupils in the 22nd intermediate school (N= 49) represented the control group. The subjects' mean age was 15 years and 6 months (Appendix 1, p.149).

B) Design of the Study :

The current study adopted a quasi experimental design employing two groups. One group was the control group which was taught English vocabulary through traditional method. The second group was the experimental group which was taught the same vocabulary through keyword method.

9

This design included the following variables : an independent variable which was keyword method, two dependent variables which were vocabulary achievement and vocabulary retention and a classification variable which was working memory capacity. The following figure shows the design of this study :
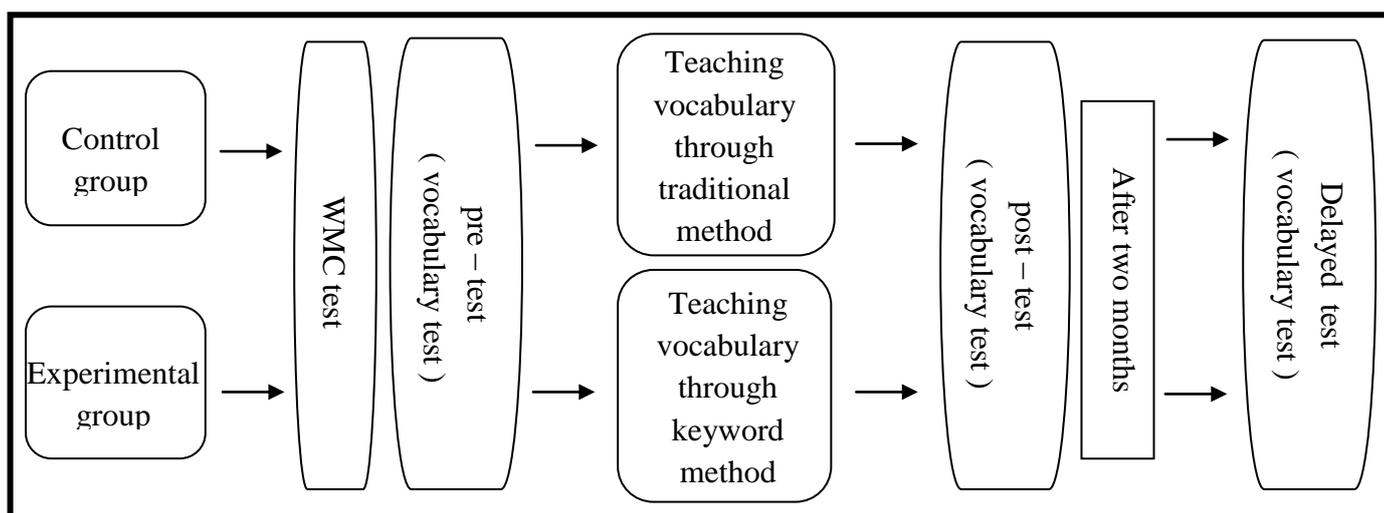
Figure (1.1) : Design of the Study

C) **Instruments of the Study:**

1. A vocabulary achievement test designed by the researcher and used as a pre - post test to measure vocabulary achievement and used as a delayed test to measure vocabulary retention .

2. Working memory tasks test by (Shalaby, 2010) used to measure working memory capacity.

D) **Procedures of the Study:**

To answer questions of the study and to test its hypotheses, the following procedures were followed:

1. Reviewing the literature related to English vocabulary achievement and retention, keyword method and working memory capacity .

2. Identifying the vocabulary that was included in the selected units and redesigning them by using keyword method .

3. Preparing the teacher's guide that showed the procedures for teaching English vocabulary by using keyword method and validating it by jury members.

4. Preparing vocabulary achievement test and establishing its validity and reliability .

5. Selecting the participants for the study and dividing them according to the design of the study .

6. Administering WMC test to both groups of the study (experimental and control) and dividing them into pupils with high WMC, pupils with medium WMC and pupils with low WMC .

7. Pre-administering the vocabulary achievement test to the groups of the study.

8. Teaching the list of vocabulary to the experimental group by using keyword method and to the control group by using traditional method.

9. Post-administering the vocabulary achievement test to the groups of the study .

10. Administering the vocabulary achievement test again to the groups of the study after two months from the post-administering .

11. Processing the results of the study groups statistically by using the computerized Statistical Package for Social Sciences (SPSS).

12. Discussing the results and providing conclusions, recommendations and suggestions for further research.

Definition of Terms

A. Mnemonic Strategies

Mastropieri and Scruggs (1998) mention that mnemonic strategies are systematic procedures for enhancing memory. Takac (2008) defines

mnemonics as the techniques which are based on cognitive processes and used to enhance retention of the new material that one would otherwise forget.

The researcher defines them as methods that enhance the acquiring of new vocabulary and storing them in the LTM effectively in order to retrieve them later on . In this study, they are represented in the keyword method.

B. Keyword Method

Nation (2001) states that keyword method involves two steps for learning vocabulary. The first step is to think of a first language word (the keyword) which sounds like the beginning or all of the unknown word from the foreign language. The second step is to think of a visual image in which the meaning of the unknown word and the meaning of the known word is combined.

Gaul (2004) describes it as a paired-associated strategy that requires the use of a acoustically similar word, the keyword, and the creation of a visual image. This visual image is created by searching for a relationship between the keyword and the new vocabulary.

The researcher defines it as a mnemonic method for teaching new English vocabulary by relating it to familiar English vocabulary which represents the keyword , then associating the new English vocabulary with the keyword via an interacting visual image.

C. Vocabulary Achievement

The Online Free Dictionary by Farlex (2009) defines achievement as " *something accomplished successfully, especially by means of exertion, skill, practice, or perseverance.*"

Saputra (2007, p.17) defines vocabulary achievement as " *students' scores which taken by measuring their abilities in the following :*
- students can achieve the vocabulary .
- students can apply the vocabulary that have been achieved in English."

The researcher defines vocabulary achievement as the pupils' scores which are gained in the vocabulary achievement test that measures their skills in recognizing, understanding and applying English vocabulary that has been taught to them.

D. Vocabulary Retention

The Online Free Dictionary by Farlex (2009) defines retention as " *an ability to recall or recognize what has been learned or experienced.*"

Mohammed (2009 , p.16) defines vocabulary retention as " *the ability to keep the acquired vocabulary and retrieve it after a period of time to use it in different language contexts.*"

The researcher adopted Mohammed's definition as an operational definition of vocabulary retention in this study.

E. Working Memory Capacity (WMC)

Just & Carpenter (1992 , p. 123) defines WMC as " *the maximum amount of activation available in working memory to support either of the two functions: storage and processing.*"

Unsworth & Engle (2008) mention that WMC can be understood as the ability to simultaneously maintain information for later recall and process it. It can also be defined as " *the limitations in the ability to use controlled processing to maintain information in an active, quickly retrievable state*" (Engle, 2001, p. 301).

The researcher defines WMC as the number of cognitive units which can be retained and processed by pupils simultaneously in the given working memory tasks.

Chapter Two

Review of Literature and Related Studies

Chapter Two

Review of Literature and Related Studies

Introduction

This chapter aims at reviewing the literature related to the variables of the study. It covers three main issues: vocabulary achievement and retention, keyword-based instruction and working memory capacity.

Also, this chapter sheds the light on the studies related to the above three main issues, i.e. the variables of the study. In addition, it presents the researcher's comment on those studies.

Vocabulary Achievement and Retention
Definition of Vocabulary

Vocabulary is one of the language aspects that has to be learned when people are learning a foreign language. By learning new vocabulary, learners can improve their listening, speaking, reading and writing skills . Folse (2008) mentioned that English language learners need a continuous knowledge of vocabulary in order to improve comprehension and production in the foreign language. He added that while a basic level of vocabulary will allow learners to communicate some ideas to a certain degree, better communication can be happened when learners have acquired more vocabulary.

It is important to define the term vocabulary because it is the basic foundation in any language and through reviewing the literature, the researcher found the following definitions that share some similarities. Hornby (2000) in Oxford Advanced Learner's Dictionary of Current English states that vocabulary is all the words that someone knows or uses, the words that are typically used when talking about particular subject or a list of words

with the explanation of their meanings in a book for learning foreign language.

Saputra (2007) gives a comprehensive definition of vocabulary and describes it as all the words that are used in a language, have meanings and consist of some parts like verbs, idioms, pronunciation, … etc.

Merriam-Webster Online Dictionary (2010) has three definitions of vocabulary as follows :

1- "*a list or collection of words or of words and phrases usually alphabetically arranged and explained or defined*."

2- " *a sum or stock of words employed by a language, group, individual, or work or in a field of knowledge*."

3- " *a list or collection of terms or codes available for use*."

Also, the American Heritage Dictionary (2010) defines vocabulary as :
" *the sum of words used by, understood by, or at the command of a particular person or group*."

Based on the previous definitions of vocabulary, it is obvious that vocabulary is considered as the most important part for any language. It is impossible for the learners to read, write, listen and speak a foreign language without having enough knowledge of vocabulary. Learning new vocabulary does not only mean memorizing the form of the word but also understanding its meaning in order to use it appropriately. Thus, vocabulary is all the words in any language that have meaning and used by people to express themselves in different situations.

Types of Vocabulary

There are three classifications of vocabulary. One is according to its use in the four skills, the other is according to its frequency and the last is according to the specialized text where it is found.

Gairns & Redman (1991), Nation (2001) and Pikulski & Templeton (2004) divide vocabulary according to its use into two types: receptive and productive / expressive vocabulary.

A. *Receptive vocabulary* means words that learners can recognize and comprehend in the context of reading and listening material.

B. *Productive / Expressive* vocabulary means words that learners can recall and use appropriately in speaking and writing to expressive themselves and to convey their messages.

Gairns and Redman (1991) state that these two types are often called passive and active vocabulary. Furthermore, Pikulski & Templeton (2004) add two other types to the above types which are :

C. *Meaning / Oral vocabulary* which refers to the combination of listening and speaking vocabulary.

D. *Literate / Written vocabulary* which refers to the combination of reading and writing vocabulary (Figure 2.1).

It is noticed that the above classification takes into consideration the four skills of language and its types : listening and reading (receptive skills), writing and speaking (productive skills), that's why vocabulary is classified into receptive and productive. Nevertheless, the same vocabulary can be either receptive or productive according to its use in any of the previous skills.

Nation (1994, cited in IKAH 2007) divides vocabulary according to the basis of frequency into two types: high frequency vocabulary and low frequency vocabulary.

A. *High frequency vocabulary* consists of words that are used very often in normal language in all four skills and across the full range of situation of use. Nation & Newton (1997) mention that the high frequency vocabulary covers 85% of the vocabulary on any page of any book no matter what its subject is. Thus, learning this type of vocabulary helps in learning a foreign language and communicating with it successfully .

B. *The low frequency vocabulary* on the other hand, consists of words that are used rarely in common activity of a language in all four skills too. It covers a small proportion of any text.
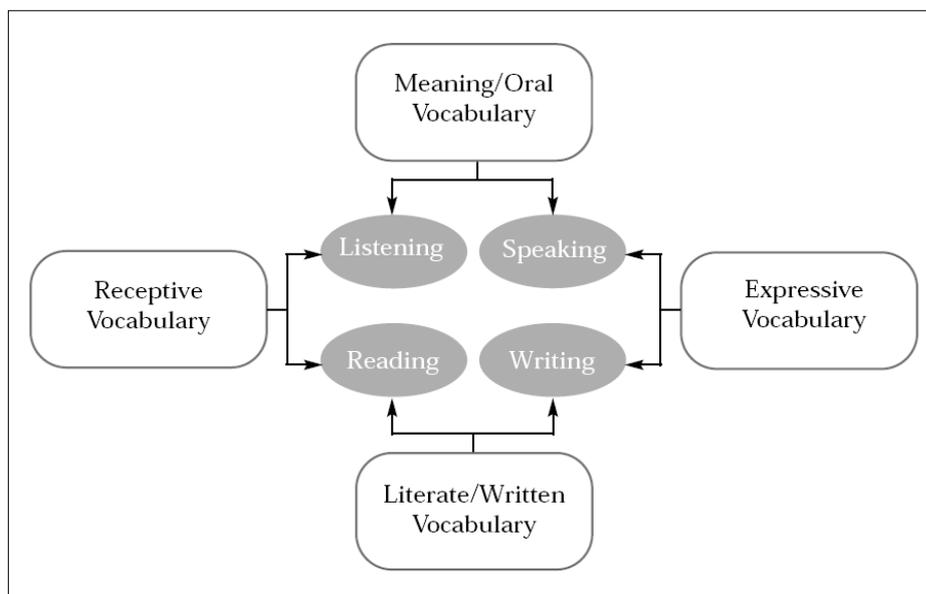
Figure 2.1 : Types of Vocabulary (Pikulski &Templeton, 2004)

The matter of vocabulary frequency is actually relative. What is considered to be high frequency vocabulary to one person may be considered as low frequency vocabulary to another one especially what is regarded with one's specialization. Nation & Newton (1997, p.239) mention that " *the division between high frequency vocabulary and low frequency vocabulary is arbitrary and the researchers do not agree about where the division should be made.*"

The last type of vocabulary is suggested by Fraser (2006). He states the following types of vocabulary which is found in a specialized text.

A. *Technical vocabulary* which is most obviously associated with specialized vocabulary . It can be divided into three categories: fully technical vocabulary whose meaning is clearly technical and not known in general language, crypto-technical vocabulary which has multiple meanings and a hidden

technical meaning if it is found in a specialized text and lay-technical vocabulary which is obviously technical but it is known by a normal person.

On the other hand, Nation (2001) asserts that technical vocabulary is specific to a particular topic, field or discipline and has four categories. These categories depend on form and meaning. In the first category the form and the meaning of the vocabulary are rarely appear outside the specialized field. In the second category the form is used in both inside and outside the specialized field but with other meaning. In the third category the form is also used in both inside and outside the specialized field but the meaning it has is accessible through their use outside the field. In the fourth category the form of the vocabulary is more common in the specialized field than elsewhere but the meaning has little or no specialization.

So, technical vocabulary can be distinguished from non-technical vocabulary through form in category 1 and through form and meaning in category 2,3 and 4.

B. *Academic vocabulary* which are common in academic texts and not so common elsewhere. Nation (2001) mentions that academic vocabulary can be sometimes called sub-technical vocabulary. He also says that learners studying English for academic purposes spend the time of learning in a good way when they learn academic vocabulary because it is a kind of high frequency vocabulary.

C. *General vocabulary* includes vocabulary which is not technical and not academic and most of it is high frequency vocabulary.

From the above explanation, it is noticed that every researcher classifies vocabulary differently but such classifications do not oppose each other because they are based on different sides and aspects of vocabulary. We see in Nation (2001) how he integrates the last two classifications and divides the vocabulary into three types: high frequency vocabulary, low frequency vocabulary and specialized vocabulary which contains academic and technical

vocabulary. So, the different classifications of vocabulary can be interrelated with each other.

Aspects of Knowing a Word

Vocabulary knowledge is important because it represents all the words that must be known to access the background knowledge, express our ideas, learn about new concepts and communicate effectively. Vocabulary knowledge is related to academic success because learners who have large vocabulary can understand new ideas and concepts more quickly and deeply than learners with limited vocabulary (Sedita, 2005). Vocabulary knowledge involves much more than learning word meanings. The concept of vocabulary knowledge is a complex concept with various definitions, depending on research purposes and it is concerned with the question, what does it mean to know a word? (Nation, 2001; Lin, 2008 and Chen, 2009). A learner might know, for example, the definition of a word, but be unable to use it in a context, or might be able to use it in the same situations, but actually have a misunderstanding of its meaning (Papadopoulou, 2007). This complexity has five aspects as Nagy & Scott (2000) indicate. These aspects are :

1- Incrementality : it means that one's knowledge of words grows gradually and takes place in many steps.

2- Polysemy : meaning that words have more than one meaning. The more frequent a word is in the language, the more meanings it is likely to have.

3- Multidimensionality : it means that word knowledge consists of several qualitatively aspects of knowledge as it will be discussed later.

4- Interrelatedness : means that the knowledge of any given word is not independent of the knowledge of other words.

5- heterogeneity : meaning that knowing a word depends on the kind of word and the knowledge that a person already has about the word.

As indicated before, knowing a word has many aspects to deal with. These aspects are the answer of the question what does it mean to know a word? Chen (2009) claimed in his study that Richards 1976 outlined eight aspects of knowing a word which work as a general framework for assessing vocabulary knowledge. These aspects are stated as follows:

1. Knowing a word will continue to grow as the learners reach adulthood.

2. Knowing a word means knowing the degree of probability of coming across that word in speech or print. For many words the learners also know the kind of words that are mostly associated with those words.

3. Knowing a word implies knowing the limitations on the use of the word according to the different functions and situations.

4. Knowing a word means knowing the syntactic systems associated with the word.

5. Knowing a word involves knowledge of the underlying form of a word and the derivations that can be made from it.

6. Knowing a word entails knowledge of the associations between that word and other words in the language.

7. Knowing a word means knowing the semantic value of a word.

8. Knowing a word means knowing many of the different meanings associated with that word.

Nation (2001) explains that knowing a word, at the general level, involves form , meaning and use. He distinguishes between the receptive and the productive knowledge (Table 2.1). His classification of word knowledge is similar to the distinction between the receptive skills of listening and reading and the productive skills of speaking and writing. Lin (2008) assures that these aspects of word knowledge are interrelated although they are written separately.

Table 2.1. General Aspects of Word Knowledge (Nation, 2001, p. 27)

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

*. R = receptive , P = productive .

As shown in the previous discussion, vocabulary learning is a complex process. It involves a range of aspects of knowledge which can not be

acquired at the same time. Vocabulary knowledge as it is used in this study includes pupils' abilities to recognize words through context and pictures, to understand word meaning and to use words correctly in different written contexts.

Vocabulary Instruction and Learning

1) Vocabulary Instruction

Teaching vocabulary is essential in teaching language in general and teaching foreign languages in particular. For this reason, there is a crucial need for more vocabulary instruction at all grades by all teachers. The number of words that students need to learn is exceedingly large (Sedita, 2005 and Souleyman, 2009). Effective vocabulary instruction helps students develop word knowledge as Huck (2006) and Butler (2007) indicate. There are some specific guidelines for effective vocabulary instruction as stated by Bromley (2002). Theses guidelines are : (a) teacher should show an attitude of interest and excitement about language and words, (b) assess student knowledge and the word's importance before teaching it, (c) vary when teaching new words, (d) activate students' schema and metacognition, (e) note multiple meanings of words and provide paraphrased meanings, (f) teach word structure and relate new words to other words, (g) invite students to interact with each other about new words, (h) model and teach word learning as an active strategy for independence, and (i) do not overlook the internet as a way to motivate word learning.

Vocabulary instruction has two methods : direct / explicit instruction and indirect / implicit instruction. Direct instruction means teaching specific words directly by giving the meanings of the new words and analyzing these words. While indirect instruction means teaching words unintentionally for example through extensive reading (Sedita, 2005 and Corbett, 2009). Both methods are important in teaching vocabulary, but direct instruction is more

effective for vocabulary development than those that rely exclusively on indirect method (Hunt & Beglar, 2005 and Bastanfar & Hashemi, 2010).

A number of principles for direct instruction of vocabulary have been suggested by Schmitt (2008). These principles are :

• Build a large sight vocabulary.

• Integrate new words with old ones.

• Provide numerous encounters with a word.

• Promote a deep level of processing.

• Make new words "real" by connecting them to the student's world in some way.

• Encourage independent learning strategies.

• Diagnose which of the most frequent words learners need to study.

• Provide opportunities for elaborating word knowledge.

• Provide opportunities for developing fluency with known vocabulary.

• Examine different types of dictionaries, and teach students how to use them.

Although direct instruction of vocabulary has its effectiveness, every vocabulary program needs to have direct and indirect elements which may be most effective if integrated together as Schmitt (2008) has pointed to. For this reason, the researcher has prepared some vocabulary exercises to be done by pupils in worksheets after teaching them the vocabulary directly by using keyword method.

2) Vocabulary Learning

As there are two methods in teaching vocabulary, there are also two ways of learning vocabulary. English language learners learn vocabulary both indirectly/implicitly and directly/explicitly. They learn indirectly through the experiences they have daily with oral and written language. On the other hand, they learn directly when they are provided with specific word instruction and are taught specific word-learning strategies (Robson 2009).

Attention is an important factor in learning and it is found in both ways of vocabulary learning. Perhan (2008) explains that in the case of direct learning attention is overtly directed towards the learning goal which is learning vocabulary, while with indirect learning attention is still present, but not consciously directed towards remembering new vocabulary items. Although indirect vocabulary learning is a process that leads to vocabulary acquisition, direct vocabulary learning has a great advantage of learning new vocabulary in depth. He adds that learners' attention can be drawn to many aspects of vocabulary at the same time, i.e. orthographic, phonological, morphological, syntactic, semantic, and collocational features. Also, Laufer, 2005 (cited in Perhan, 2008) provides good reasons to argue that vocabulary learning requires explicit attention because (1) learners often do not pay attention to the exact meanings of individual words when engaged in reading for comprehension; (2) guessing from context is often unreliable, especially if the learner does not know 95% to 98% of the words in the text; (3) new words which learners have encountered in discourse need to be met again relatively quickly to avoid their being forgotten.

Thus, direct learning is fruitful for vocabulary learning especially for school learners rather than for those who study in universities. Learners in advanced levels have a lot of words that enable them to guess the meaning of new words through reading a text. While beginners and learners in intermediate level still need more opportunities to acquire many words directly. That's why the researcher has chosen the direct method in teaching vocabulary for 3rd intermediate grade pupils.

a) Benefits of Vocabulary Learning

Bromley (2002) points out that there are many benefits from learning vocabulary in all grade levels. First, it contributes in comprehension with

proportion of 80 percent because vocabulary knowledge makes it easier for the learners to infer the meanings of unfamiliar vocabulary. Second, it improves the achievement because learners with large vocabulary score higher in achievement test than learners with small vocabulary. Third, it enhances communications because having more vocabulary help learners to speak and write well and to understand what is heard and written easily and deeply. Fourth, it shapes thinking because vocabulary are tools for analyzing, inferring, evaluating, and reasoning either the written work or oral one. Also, Lin (2002) asserts that vocabulary knowledge should be the first when one wants to learn a foreign language.

Thus, it is important for EFL learners to have more English vocabulary in order to learn English language successfully either for academic purposes or for communication with others whose first or second language is English.

b) Vocabulary Learning Strategies (VLS)

Foreign language learners use various strategies to acquire vocabulary of that foreign language. There are numerous researchers who have proposed ways of classifying VLS as will be discussed now. From a general language learning perspective, Oxford, 1990 (cited in D'Onofrio, 2009) has identified two approaches: direct approach which includes memory, cognitive, and compensation strategies and indirect approach which includes metacognitive, social, and affective strategies.

Gu & Johnson (1996) list vocabulary learning strategies as metacognitive, cognitive, memory and activation strategies. Metacognitive strategies consist of selective attention and self-initiation strategies. Learners who employ selective attention strategies know which words are important for them to learn and are essential for adequate comprehension of a passage. Learners employing self-initiation strategies use a variety of means to make the meaning of vocabulary items clear. Cognitive strategies include guessing

strategies, dictionary strategies and note-taking strategies. Memory strategies are classified into rehearsal and encoding strategies. Word lists and repetition (oral and visual) are instances of rehearsal strategies. Encoding strategies include such strategies as association/elaboration, imagery, visual, auditory, semantic, and contextual encoding as well as word structure (i.e., analyzing a word in terms of prefixes, stems, and suffixes). Activation strategies include those strategies through which the learners actually use new words in different contexts. For instance, learners may set sentences using the words they have just learned.

Another VLS taxonomy is proposed by Schmitt, 1997 (cited in Takac, 2008) which is extracted from the taxonomy of Oxford 1990 with an addition of a new category, i.e. determination strategies. He distinguishes the strategies into two groups: *discovery strategies* that is used in determining the meaning of new words when encountered for the first time, and *consolidation strategies* which is used in consolidating word's meaning when encountered again. The discovery strategies contains determination and social strategies and the consolidation strategies contains cognitive, metacognitive, memory and social strategies .

According to Schmitt's taxonomy, learners try to discover the meaning of a new word by guessing it with the help of context, structural knowledge of language, and reference materials such as dictionaries (determination strategies). The second way to discover a new meaning is through employing the social strategies of asking someone for help with the unknown words. Practicing and retaining vocabulary is important beside the initial discovery of a word. Ghazal (2007) mentions that according to Schmitt's taxonomy, learners use a variety of social, memory, cognitive and metacognitive strategies to consolidate their vocabulary knowledge. Cooperative group learning in which learners study and practice the meaning of new words in a

group and talking with native speakers are instances of social strategies. Memory strategies, traditionally known as mnemonics, involve relating the word with some previously learned knowledge by using some form of imagery or grouping. Cognitive strategies in this taxonomy include repetition and using mechanical means such as word lists, flash cards, and vocabulary notebooks to study words. Finally, metacognitive strategies are defined as strategies used by learners to control and evaluate their own learning, by having an overview of the learning process in general.

The last taxonomy of vocabulary learning strategies discussed here, illustrated in Figure 2.2, is Nation's (2001). This taxonomy separates aspects of vocabulary knowledge (planning) from vocabulary sources and learning processes. The planning strategy involves subcategories of strategies which are choosing words, choosing aspects of words, choosing strategies, and planning repetition. Learners should know what their vocabulary goals are, choose what vocabulary to focus on, be aware of the aspects of these vocabulary, choose the strategies that may help them in going about these tasks and make a repeated attention to the vocabulary in order to encourage its remembering. The sources strategy means finding information about words. This information can come from analyzing word parts, from context, from a reference source such as dictionaries and glossaries, and from analogies in other languages. Finally, the processes strategy involves ways of remembering vocabulary. Its major categories include noticing, retrieving, and generating. Noticing strategies include: recording, oral repetition and visual repetition. Retrieval can take several forms: oral/visual, context/de-contextualized, open/hidden, and receptive/productive. Retrieval in these last two forms strengthens the link between the retrieved knowledge and the cue. In the receptive retrieval, the retrieved knowledge is the meaning or the use of the vocabulary and the cue is its written or spoken form. In the productive

retrieval, the retrieved knowledge is the vocabulary form and the cue is its meaning or the use. So, retrieval occur in all four skills of language (listening, speaking, reading, and writing). Like retrieving, generating has many kinds: oral/visual, context/de-contextualized, open/hidden, and receptive/productive. The strategies involved in generating include : word analysis, semantic mapping, using scales etc. Another type of strategies involved in generating is the rule-based generation such as creating context, using vocabulary in sentences, using mnemonic strategies, and using vocabulary in new context through the four language skills.
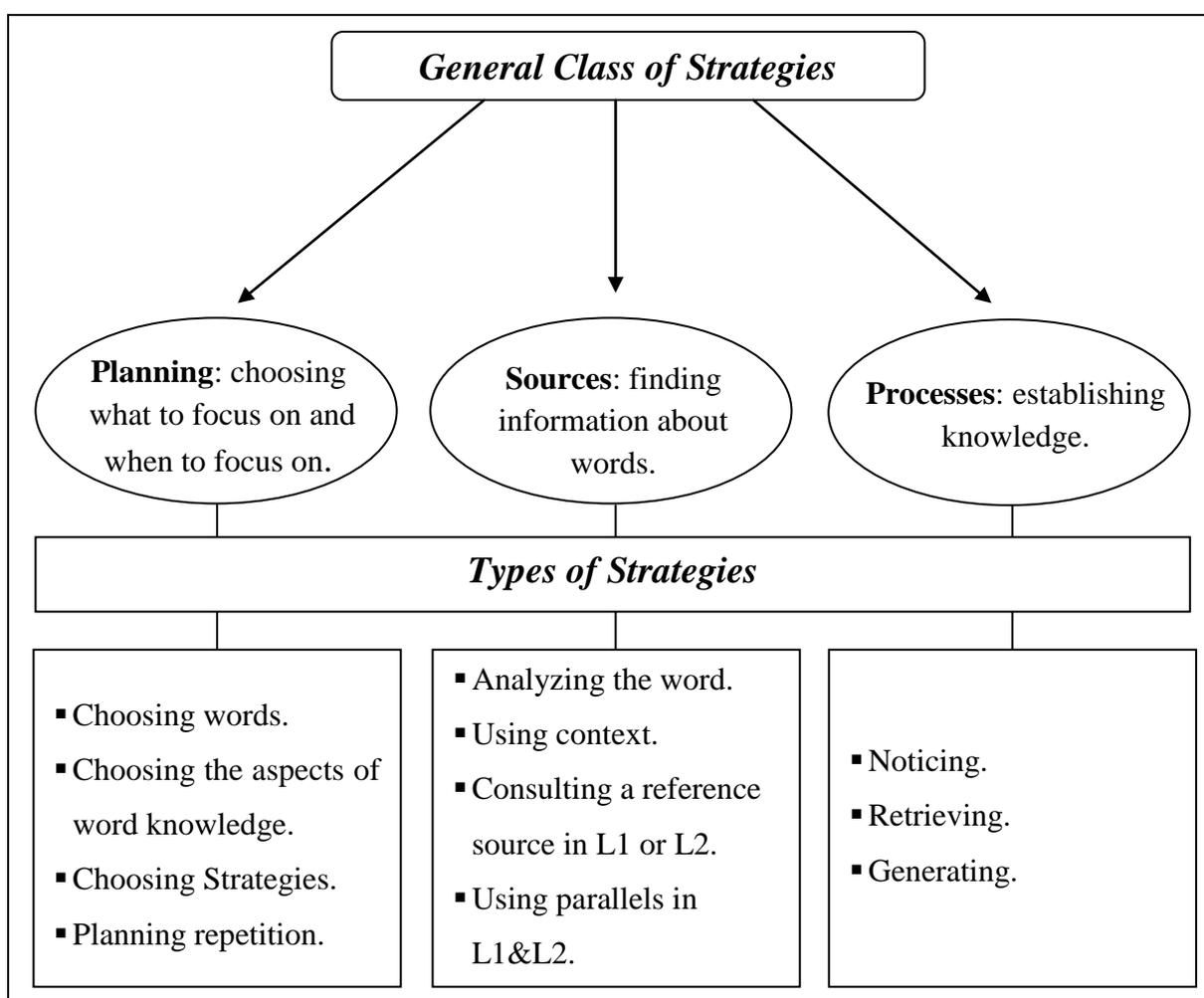
Figure 2.2 A Taxonomy of Vocabulary Learning Strategies in Nation 2001.

Vocabulary Retention

It is Known that as well as the learned material is retained in the memory, the learners can get benefit from it when the time of recalling it comes. This is what we call retention and retrieval. Souleyman (2009) mentions that retention is a function of memory that can be defined as including more complex functions as memorizing or learning, retention, recall, and recognition. He adds that there are processes precede retention which are noticing, intake, and storage in the short term memory and later in the long-term memory.

Vocabulary retention is an essential factor in learning English as a foreign language. Mohammed (2009, p.16) defines vocabulary retention as " *the ability to keep the acquired vocabulary and retrieve it after a period of time to use it in different language contexts*." Zhang (2002) states that one of the biggest challenges for EFL learners is how they can effectively remember, retain, and retrieve the newly learned English vocabulary. There are two kinds of vocabulary retention: immediate retention and delayed retention. Souleyman (2009) defines immediate retention as the level of retention of the newly comprehended piece of information as measured by a test after the experimental treatment immediately. It can also be referred to as medium-term retention. On the other hand, he defines delayed retention as the level of retention of the target piece of information newly acquired through the experimental treatment, as measured by a test on that new information. In this particular case, the delayed test was given to the learners month or more later. Delayed retention can thus be referred to as long-term retention of the items.

Regarding the long-term vocabulary retention, Min & Hsu (2008) state that almost all learners retain a significant amount of receptive vocabulary knowledge over one month but approximately half of them show a significant decline in productive word knowledge.

Eyraud et al. (2000) state that teachers can stimulate students' vocabulary growth and retention by rethinking instructional priorities and taking the following steps. First, teachers should involve their students in a vocabulary-rich environment to promote the incidental learning of vocabulary. Second, they should increase the amount of reading assigned to their students. Third, they should set aside time for explicit/direct vocabulary instruction in which teachers do not only teach word meanings but also provide opportunities for (a) vocabulary reusing in different meaningful contexts, (b) connections between new and known vocabulary, and (c) active student involvement.

Nation (2001) mentions that there are three important processes that may lead to remembering vocabulary. These include noticing, retrieval, and creative (generative) use. Noticing means to give attention to the vocabulary and be aware of it. This noticing has tow important conditions which are motivation and interest of the learners. Retrieval means being able to recall the vocabulary from the memory during the task. Retrieval may be receptive as in listening and reading or productive as in speaking and writing. Generative use means using the vocabulary in new context with different meanings. It can also be receptive or productive.

Studies Related to Vocabulary

There are many researches that investigated the vocabulary and its importance in English language learning and academic success. In this section, the researcher is presenting a review for some related studies to vocabulary instruction and learning, vocabulary achievement and vocabulary retention.

1) Studies Related to Vocabulary Instruction and Learning

Waring & Takaki (2003) examined the rate at which vocabulary was learned from reading the 400 headword graded reader *A Little Princess*. 25

words within five bands of differing frequency of occurrence (15 to 18 times to those appearing only once) were selected. The spelling of each word was changed to ensure that each test item was unknown to the 15 intermediate level (or above) female Japanese subjects. Three tests (word-form recognition, prompted meaning recognition and unprompted meaning recognition) were administered immediately after reading, after one week and after a three months delay. The results showed that words could be learned incidentally but that most of the words were not learned. More frequent words were more likely to be learned and were more resistant to decay. The data thus suggested that very little *new* vocabulary was retained from reading one graded reader, and that a massive amount of graded reading was needed to build new vocabulary.

Issariya (2004) investigated the effect of training in five vocabulary learning strategies (VLS) on Thai university students in an L2 normal heterogeneous classroom. The five VLS were 'Dictionary work', 'Keyword method', 'Semantic context', 'Grouping word families' and 'Semantic mapping'. Sixty-nine mixed ability second, third, and fourth year university students, in both the control group (33 students receiving extra reading work) and the experimental group (36 students receiving VLS training) were from various fields of study. Data were collected utilizing three research instruments namely pre-and post tests of vocabulary learning ability, think-aloud protocols and semi-structured interviews.

The results showed that after introducing vocabulary learning strategies training (VLST) in class, subjects from the experimental group significantly outperformed subjects from the control group in their ability to learn words. It also showed that the students had a positive attitude towards VLST. Moreover, students showed an increased awareness of the need to select a suitable vocabulary learning strategy to help remember different types of words.

Al-Jarf (2006) conducted a study to investigate problems of vocabulary teaching and learning for EFL instructors and students. The pretest showed that freshman students at College of Languages and Translation (COLT) have difficulty in pronouncing, recognizing the meaning of, using and spelling English words. In their first semester, freshman students are required to take a vocabulary course that consists of 50 lessons (2000 words), each consisting of a presentation page and a practice page. To help the students learn, retain, apply and relate word, the instructional approach focused on connecting the printed form of the word with its pronunciation, with its part of speech, English & Arabic meanings, usage, component parts, previously-encountered words and others while presenting the new vocabulary items in each lesson.

Categorization, association, and visualization skills and mnemonic approaches were emphasized. Out of class extensive reading and listening activities were also encouraged. Quizzes required the students to make the above-mentioned connections. Comparisons of pre and posttest results and of the experimental and control groups' test scores revealed significant differences in vocabulary knowledge and skills. The experimental approach proved to be effective in enhancing vocabulary learning by struggling EFL college students.

Yek (2006) investigated the effect of memory enhancing vocabulary learning strategy instruction (MEVLSI) on vocabulary learning. This instruction was a combination of phonics, word grouping, syllabication, back-drill pronunciation, keyword and sentence plus definition explanation method. The subjects consisted of 40 Chinese students, from 10-15 years equally divided into control group and experimental group. For the two - week study, the teacher taught the control group with the traditional vocabulary teaching method, while the experimental group was instructed by using MEVLSI. It was concluded that MEVLSI facilitated participants' vocabulary acquisition.

Nadarajan (2007) attempted to explore the need of providing explicit vocabulary instruction from within a meaningful environment. It also investigated the relevance of focus on forms and focus on form practices in helping second language (L2) learners increase the size and depth of word knowledge. The study involved (129) undergraduates from a writing program, and used a pretest and posttest design to measure gains in L2 learners vocabulary knowledge. The results indicated that the vocabulary gains for both implicit (control) and explicit (treatment) instructional context were not very different though the subjects in the implicit instructional group learned slightly more words compared to the explicit instructional group. However, this had more to do with individual instructor effectiveness and learner proficiency. In terms of word use, L2 learners subjected to explicit focus on forms and focus on form tasks increased their word use while the first language (L1) learners and L2 learners from the control groups did not increase their academic words.

Lin (2008) designed a study to explore adult individual learners' vocabulary learning processes, and to examine their use of vocabulary learning strategies. The data for the research derived primarily from the questionnaires , semi-structured interviews and think-aloud protocols. The study illustrated that participants used a variety of vocabulary learning strategies to learn vocabulary. In total, (49) individual vocabulary learning strategies were identified and classified. Further, the differences between the learners were shown to be not only in *what* strategies they use but also in *how* they employ them. Finally, the study showed that well-organized and planned learning strategy training should be provided to language learners in order to make sure that they can use the strategies effectively, and that language instructors and the language textbook should play an active role in strategy training.

Thu (2009) examined the language learning strategies employed by successful learners of English as a foreign and second language. Two successful English learners, whose first languages were Mandarin, were interviewed, and asked to complete a questionnaire and a self-evaluation tool to indicate their perceived level of language proficiency as well as their learning goals for each individual language skill in the future.

The data from the interviews and the questionnaires showed that these learners utilize a wide range of strategies to learn listening, reading, speaking, writing, pronunciation, grammar and vocabulary. It was also found that strategies for vocabulary learning outnumber those for other language skills and areas investigated. Additionally, practice was reported to be the key to improve all four language skills as well as pronunciation, grammar, and vocabulary.

DeWitt (2010) conducted a study to introduce and develop supplementary English material for vocabulary instruction by providing memory-enhancing strategies for students with and without disabilities. Five inclusive English classrooms were assigned treatments in a within-subjects crossover design where all students received both treatment conditions – traditional instruction and mnemonic instruction. Memory enhancing strategies are mnemonic devices that target specific vocabulary and provide additional practice using a visual representation to increase comprehension. Participants included (103) students in 10th through 12th grade, including (31) students with disabilities. Two general education teachers and two special education teachers participated in this study. Students received instruction in two units for four weeks and were pre and post tested on all vocabulary introduced. Students were given strategy use and satisfaction surveys. Attitudinal and satisfaction surveys were also given to teachers.

Overall findings revealed that students with disabilities performed significantly better on delayed cumulative posttest. 10th grade students in the

mnemonic condition performed descriptively higher on delayed cumulative posttest than 11th and 12th graders. The majority of students responded that, compared to traditional instruction, they preferred and enjoyed the use of mnemonic strategies as well as learned how to generalize to their own learning preferences. Teacher attitudes varied but mostly favored mnemonic instruction.

2) Studies Related to Vocabulary Achievement

Al-Seghayer (2001) conducted a study to examine which of the image modalities - dynamic video or still picture - was more effective in aiding vocabulary acquisition. The participants, (30) students, were introduced to a hypermedia-learning program, designed by the researcher for reading comprehension. The program provided users reading a narrative English text with a variety of glosses or annotations for words in the form of printed text, graphics, video, and sound, all of which are intended to aid in the understanding and learning of unknown words. A within-subject design was used in this study with (30) participants being measured under three conditions: printed text definition alone, printed text definition coupled with still pictures, and printed text definition coupled with video clips. In order to assess the efficacy of each mode, a vocabulary test was designed and administered to participants after they had read the English narrative. Two types of tests were administered: recognition and production. In addition, a face-to-face interview was conducted, and questionnaires were distributed. Results of the both tests were analyzed using analysis of variance procedures. The investigation had yielded the conclusion that a video clip is more effective in teaching unknown vocabulary words than a still picture.

Sildus (2006) examined the relationship between interactive, output-dominant vocabulary practice and students' achievement on vocabulary recall tests. The study, conducted with (272) participants randomly assigned to

experimental and control groups. The interactive practice took the form of video projects, assignments in which teams performed in specific conversational situations captured by video. The participants in the experimental groups prepared video fashion shows, while the students in the control groups completed worksheet assignments. The results revealed that although both groups improved their performance, the experimental group showed a higher gain in scores over time.

Saputra (2007) conducted a research to find out whether there was an influence of Contextual Teaching Learning to the students' vocabulary achievement. The sample of this research utilizes was the first grade students, consisting of (210) students. The sample consisted of two classes with (30) students in each class and the sampling technique was cluster random sampling. The research method applied was Quasi Experimental Design. This research had proved empirically that there was positive influence of using Contextual Teaching Learning on English vocabulary achievement.

Ali (2007) conducted a study to promote Saudi EFL adult beginners' vocabulary achievement, retention and metacognitive awareness via incorporating an additional training for them in generating verbally and visually coded mnemonics into their lexical instruction. Participants were 42 EFL adult beginners enrolled in a six-month English language program at the Training and Community Service Center at Riyadh Teachers' College, KSA. in the academic year (2006-2007). They were randomly assigned to either a treatment or control group; each consisted of (21) students. The treatment group participants were trained to construct and use mnemonics in their vocabulary learning. The think-aloud protocol was used in this training. The control group was instructed in the same way without such training. To maintain the congruence of both groups, participants were offered the same circumstances of practice. The experiment lasted for (16) weeks. The participants' vocabulary achievement and metacognitive awareness were pre-

and post-tested using a Vocabulary Achievement Test and a Metacognitive Awareness Questionnaire successively. A delayed post assessment of their vocabulary retention was administered to both groups. Findings of the study showed that incorporating mnemonics into lexical instruction was more effective than the same instruction without it in vocabulary achievement, retention and metacognitive awareness.

D'Alesio et al. (2007) conducted a study to improve student vocabulary acquisition through a multisensory, direct instructional approach. The study involved three teachers and a target population of (73) students in second and seventh grade classrooms. The intervention was implemented from September through December of (2006) and analyzed in January of (2007). The goal was to gather evidence of a marked improvement in the number of vocabulary words that students recognize, understand, and use. Pre and posttests gathered data on student knowledge of fifty key content area vocabulary words. Three interventions based on brain research were implemented: specially designed graphic organizers, classical music, and Brain Gym® exercises. The study results showed that a multisensory, direct instructional approach improves student vocabulary acquisition. Educators need to increase their knowledge of brain research and implement direct instruction of vocabulary through the use of multisensory methods.

Pittman (2008) examined the effect of implicit and explicit vocabulary instruction on ELL students' scores in vocabulary acquisition and reading comprehension. Participants completed six units: three with implicit vocabulary instruction and three with explicit vocabulary instruction. The scores were analyzed using a dependent t-test on first, the total vocabulary gain (vocabulary acquisition), and second, on the total reading comprehension. Descriptive statistics were also used on students' classroom averages for each of the six units.

The results of this study indicated that not only did explicit vocabulary instruction have a significantly positive effect on the vocabulary acquisition of ELL students, but they also indicated that explicit vocabulary instruction has a positive effect on the overall performance in the classroom. The results of the comparison of implicit and explicit instruction for reading comprehension indicated that there was no significant difference in the two methods. The results of this study have important implications for the classroom and make a strong case for explicit vocabulary instruction.

3) Studies Related to Vocabulary Retention

Yoshii & Flaitz (2002) investigated the effect that annotation type had on incidental vocabulary retention in a multimedia reading setting. Three annotation types were compared: text-only, picture-only, and a combination of the two. The participants were (151) adult EFL learners at beginning and intermediate language proficiency levels. The participants read a story for comprehension purposes using the Internet. Three types of instruments were used for vocabulary retention assessment: Picture recognition, Word recognition, and Definition Supply tests.

The results indicated that the Combination group (annotations with text and picture) outperformed the Text-only and Picture-only groups on the immediate tests. The Combination group also outperformed the other two groups on the delayed tests, however, the differences were smaller than those for the immediate tests. There was no significant interaction between annotation type and proficiency level for either the immediate or the delayed tests.

Al-Hadlaq (2003) investigated the effectiveness of four vocabulary learning tasks on l04 Saudi EFL learners' retention of ten previously un-encountered lexical items. These four tasks were: 1) writing original sentences (WS), 2) writing an original text (i.e. composition) (WT), 3) filling-

in-the-blank of single sentences (FS), and 4) filling-in-the blank of a text (FT). The researcher concluded that composition writing was the most helpful task for vocabulary retention and also for general language learning, followed by FT. Sentence fill-in was considered the least useful activity in this regard.

Hermann (2003) investigated the differential effects of reading and paired -associate learning on vocabulary acquisition and retention in adult ESL learners. The sample (N = 34) comprised two intact groups of university students. Subjects in one group were asked to read the novel Animal Farm while subjects in the comparison group memorized a list of words preselected from the novel. Subjects were then administered two post-tests: one to assess initial lexical acquisition, and another three weeks later to assess lexical retention. Only subjects in the paired-associates group were apprised of the vocabulary test. Although multiple comparisons failed to produce sufficient support for the hypothesis that the reading condition would initially acquire more vocabulary than the word list condition, substantial confirmation emerged for the second hypothesis–that the reading condition would exhibit superior retention rates. These findings suggest that for the purpose of encouraging long-term lexical retention, reading literature is preferable to paired-associate learning.

Marefat & Shirazi (2003) examined the effect of teaching direct learning strategies (memory, cognitive, and compensation) and their subcategories on the vocabulary retention -short term and long term- of EFL learners. Participants of the study were 60 Iranian female English Language Learners between the ages of 15 and 17. Before the treatment phase of the study, a questionnaire was given to the participants to see if they already use these strategies even before receiving any instruction, and also to raise their consciousness on the use of them. After the treatment, the participants took two equivalent tests with an interval of two weeks to find out the difference between their short term and long term retention of vocabulary.

The results indicated that learners' strategy use in short-term retention far outweighs that in long-term retention. The results also portrayed the superiority of *memory strategy* use both in short and long term retention. The next most frequently used strategies were cognitive and compensation strategies respectively.

Al-Ghozify (2008) conducted an experimental research design to test the effect of cognitive vocabulary learning strategies (CVLS) on the vocabulary acquisition and retention of level one students of the Department of English, Faculty of Education, Hajjah, Sana'a University. Sixty students formed the sample. A questionnaire on CVLS administered to the teachers of the department, and pre and post tests on the dependent variable.

The results showed that the performance of the experimental group in the immediate post test was statistically significantly better than that of the control group. The performance of the experimental group in the delayed post test was statistically significantly better than its performance in the immediate post test. The performance of the experimental group in the delayed post test, although better than that of the control group, was not statistically significant.

Min (2008) conducted a quasi-experimental study to compare the effectiveness of reading plus vocabulary-enhancement activities (RV) and narrow reading (NR) -repeated reading thematically related articles- on vocabulary acquisition and retention among English as a foreign language (EFL) secondary school students. Twenty-five third-year male students with intermediate-level English proficiency participated in each instructional treatment 2 hr per week for five weeks. The RV group read selected texts and practiced various vocabulary exercises. The NR group read thematically related supplemental materials besides the selected texts. A Chinese version of the modified Vocabulary Knowledge Scale was employed to assess students' knowledge of 50 vocabulary items. The results showed reading plus focused vocabulary exercises were more effective and efficient than the

narrow reading approach in enhancing target vocabulary acquisition and retention among EFL secondary students.

Chen (2008) conducted a study to compare the effects of different types of printed dictionary use on non-English major learners' academic performance in vocabulary acquisition, retention, and reading comprehension. The 273 participants were selected from six English classes in three departments in a private two-year college in southern Taiwan. These subjects were divided into two groups according to dictionary used: monolingual and bilingual, one class from each department. Of quasi-experiment design, this study comprised five vocabulary acquisition tests, two retention tests, reading comprehension pretest and posttest, and the pre and post Language Attitude questionnaire. The results showed that the bilingual dictionary users outperformed monolingual dictionary users in vocabulary acquisition and retention tests. However, reading comprehend posttest performance was not influenced by the type of dictionary used.

Mohammed (2009) conducted a study to investigate the effectiveness of total physical response storytelling (TPRS) in vocabulary acquisition and retention of EFL preparatory stage students and their attitudes towards English. The sample of the study was randomly selected from first year preparatory school students. It consisted of 80 students and divided into two groups (experimental and control). The experimental group participants were taught the vocabulary by using TPRS while the control group was taught the same vocabulary by the traditional method. The vocabulary achievement and the attitudes scale were administered as pre- and post-test. The same test of the vocabulary achievement was administered to both groups again as a follow up test to measure the vocabulary retention after a month from the treatment. Findings of the study showed that TPRS method was an effective way in enhancing vocabulary acquisition and retention. They also provided evidence to the effectiveness of using TPRS method in helping the students to

change students' negative attitudes into positive ones towards English language.

Comment on Pervious Studies

In the light of the findings of the previous studies, the following points could be highlighted:

1. Using pictures in teaching vocabulary has a positive role in enhancing immediate and delayed retention of vocabulary than using text only as showed in the study of Al-Seghayer (2001) and Flaitz & Yoshii (2002). On the other hand, the results of Al-Hadlaq (2003) did not agree with those two studies and stated that writing text helped learners in enhancing their vocabulary retention. Therefore, studies did not come to a consensus on this point and this lead the researcher to investigate this point again by using keyword method that based on visual pictures.

2. It is noticed that most studies that investigated vocabulary immediate and delayed retention used the same test in both retentions such as Yoshii & Flaitz (2002) , Ali (2007) and Mohammed (2009). This is what the researcher did in the current study which was not in line with Marefat & Shirazi (2003) who use two equivalent tests in their study because of the short interval between immediate and delayed vocabulary retention test (two weeks).

3. The direct teaching of vocabulary is better than the indirect in enhancing vocabulary acquisition and retention as shown in Takaki & waring (2003), D'Alesio et al. (2007), Min (2008), Pittman (2008) and Mohammed (2009). Nevertheless, the results of Hermann (2003), Saputra (2007) and Nadarajan (2007) studies showed the effectiveness of indirect teaching through reading and contextual teaching in enhancing vocabulary achievement and retention. This disagreement could be due to the difference of the content, test type, and the gender of study samples.

4. The involvement of learners in learning English vocabulary is a good factor in enhancing their vocabulary learning as in Sildus (2006) and Ali (2007). This motivated the researcher to use the keyword method which requires the involvement of the learners in learning vocabulary.

5. It is necessary to teach EFL learners the vocabulary learning strategies and practice them as showed in Marefat & Shirazi (2003), Al-Ghozify (2008), Lin (2008) and Thu (2008). This agrees with what the researcher did in the current study because keyword method can be a learning strategy not just a teaching strategy.

6. Memory strategies are the most effective strategies that enhance vocabulary learning and retention as stated in Marefat & Shirazi (2003), Issariya (2004), Al-Jarf (2006), Yek (2006), Ali (2007) and DeWitt (2010). The current study appears to be a complementary for this finding. Keyword method is considered to be one of the memory strategies that might enhance vocabulary achievement and retention.

Keyword-based Instruction

Mnemonics

One of the strategies which is used to encode information in LTM effectively is mnemonic strategies. Mastropieri & Scruggs (1998) define mnemonic strategies as systematic procedures for enhancing memory. Their particular use is in developing better ways to encode information so that it will be much easier to remember. Higbee (2001) mentions that the word Mnemonic (pronounced "nemonik") is derived from *Mnemosyne,* the name of the ancient Greek goddess of memory and it is defined as any technique that aids memory. Hauptmann (2004) states that mnemonics are described as the art of refreshing, improving, or developing the memory by artificial aids. Takac (2008) also defines mnemonics as the techniques based on cognitive processes that are used to enhance retention of the new material that one

would otherwise forget. Dmitsak (2007) mentions that mnemonic strategies are useful because they allow for chunking of information in ways that reduce memory load and are overall more memorable. So, it can be concluded that mnemonics are procedures, techniques, or methods that enhance memory to store the new information and recall it easily at anytime the learners need. This process helps learners to achieve learning successfully.

Mnemonics have some basic principles in order to be more effective. Higbee (2001) states the following principles :

1- Meaningfulness

Mnemonics are used with the abstract, meaningless material and the teacher try to impose meaning on that material in order to be easier to learn. This is can be done by using pattern, rhymes, and association between the meaningful material and the meaningless material that the learner wants to learn.

2- Organization

As mental filing systems, mnemonics must give a systematic way to record and retrieve the material.

3- Attention

Mnemonics need concentration in order to form pictures and associate them. They can enhance the learner's attention because they tend to be more interesting than rote learning.

4- Association

In all mnemonics the teacher or the learner must associate the new material with the material that has been memorized previously.

5- Visualization

Visual imagery plays a central role in the mnemonics because the associations are usually made visually. There are three factors that make the visualization more effective : interaction, vividness, and bizarreness. Interaction means that the new material and the known one are associated in an interacting image

rather than putting the two materials next to each other or one on top of the other. Combining the two materials as a unit help in remembering them because each part in the image serves as a cue to remember the rest of the unit. Vividness means clearness, a vivid visual image is one that is clear, distinct, and strong. It is as similar to actually seeing picture. There are four suggestions that are recommended in making the effective visual association more vivid. These suggestions are : motion, substitution, exaggeration, and familiarity. The last factor that make the visualization more effective is bizarreness. Bizarre means unusual, weird and implausible. Bizarre image tend to be more unique and novel than usual image and it takes more time and effort to form and this help the learner to remember it better. D'Alesio et al. (2007) assures that the use of visuals through color, clip art images, and graphic organizers help students to remember by stimulating more areas of the brain.

Higbee (2001) states that mnemonics can be either verbal or visual. Verbal mnemonics use the words to associate the new items with the old ones. While visual mnemonics use visual imagery to associate the items to be remembered with the already known items. Both mnemonics verbal and visual include several techniques or methods. Higbee (2001) and Hauptmann (2004) state the following mnemonics methods:

1- First Letter Method

This method has two kinds : acronym and acrostic in which the learners use the first letter from the information that must be memorized and recalled and then form either a word (acronym) or a sentence (acrostic).

a) Acronym

It means a word which its letters stand for a word, concept or piece of information, e.g. NATO which stand for **N**orth **A**tlantic **T**reaty **O**rganization and HOMES which stand for the five great lakes in the Midwestern United

States: **H**uron, **O**ntario, **M**ichigan, **E**rie, and **S**uperior. It is used widely to represent associations, organizations and government agencies.

b) Acrostic

It is a series of words, lines or verses in which the first letters from each word form a word or a phrase. The colors of the visible spectrum have been remembered by the acrostic, "**R**ichard **O**f **Y**ork **G**ave **B**attle **I**n **V**ain": **R**ed, **O**range, **Y**ellow, **G**reen, **B**lue, **I**ndigo, **V**iolet.

2- Loci Method

It is probably the oldest and best method to learn vocabulary list. It is used also to remember shopping lists, lists of things to do, naturally ordered material, lists of names and so on. It includes two steps. First, the person memorizes a series of mental images of familiar locations in a logical or a natural order. Second, he/she associates a visual image of each item to be remembered with a location in the series. In the stage of retrieval to be remembered words, the learner walks along the locations and collects the words from them.

3- Keyword Method

It will be discussed later on in this chapter P. 48.

4- Rhyming

In rhyming the learners use musical verses to remember the information. For example the rhyme ," *i* before e except after *c*; or when sounded like a, as in neighbor and weigh", help them to remember how to spell words with *ie* in them.

<u>5- Pegword Method</u>

It is a system that used rhyming words of concrete objects to represent the numbers. It is used in memorizing a list of words. The learners associate each word from the list with each of the peg words in order. The most widely version of the peg word used based on rhymes is the following :

one - bun	six - sticks
two - shoe	seven - heaven
three - tree	eight - gate
four - door	nine - wine
five - hive	ten - hen

For example, the first three peg words could be used to learn a list of words includes : paper, tire, doctor. The learner starts to associate paper with bun; see a person eating a bun made of paper. Then associate tire with shoe; see a person wearing tire on his feet. Finally, associate doctor with tree; see a doctor operating on a tree. To recall the words to be learned in order, the learner recall the peg words and retrieve the words associated with them.

Dmitsak (2007) mentions that some common mnemonics used in the classroom are the first letter method, the rhyming method, the method of the loci, the peg word method, and the keyword method. That's why the researcher only discussed them although there are other mnemonics that are used rarely. In the following section, the Keyword method will be introduced in details because it is one of the current study variables.

Keyword Method - Its Function and Structure

Keyword method is a way of facilitating the link between the form of the new vocabulary and its meaning (Hulstijn 1997 and Nation 2001). The term is firstly used by Richard Atkinson in 1975 (Campos et al. 2003 and

Hauptmann, 2004) in learning vocabulary of foreign language (Russian). Nation (2001) states that this method has been used with many languages such as English speakers learning English, Spanish, Russian, German, Tagalog, Chinese, Hebrew, French, Italian, Greek, and Latin words, Dutch speakers learning Spanish and Arabic speakers learning English. So, it is used in learning the second language and the foreign as well.

Wieland (1990, p.7) mentions that

> *" the keyword method consists of a two-step process. In the first step, a perceptual link is formed between a foreign word and a native language word (keyword or mediator) which resembles the foreign word. In order to form this link, the learner either derives, or is provided with a native language word, some portion of which is orthographically and/or acoustically to a portion of the foreign word. In the second step, a semantic link is formed between the meaning of the keyword and the translation equivalent of the foreign word. This link can be formed by creating an interactive mental image."*

Nation (2001) states that the keyword method involves two steps for learning vocabulary. The first step is to think of a first language word (the keyword) which sounds like the beginning or all of the unknown word from the foreign language. The second step is to think of a visual image in which the meaning of the unknown word and the meaning of the known word is combined. Campos et al. (2003) call the first step verbal and the second step visual. Gaul (2004) defines it as a paired-associated strategy that requires the use of a acoustically similar word, the keyword, and the creation of a visual image. This visual image is created by searching for a relationship between the keyword and the new vocabulary.

It is noticed from the two above definitions of keyword method that the link between the foreign vocabulary and the keyword can be formed by either a mental image or a visual image. The other point which both definitions agree with is that keyword is derived from the first/native language, but Hulstijn (1997) mentions that keywords can be chosen from the foreign language vocabulary with which the learner is already familiar. This is what the researcher did in the current study.

Characteristics of Keyword Method

Nation (2001) states that keyword method has positive effects on both immediate retention and long-term retention (one week to ten years). While Takac (2008) mentions that this method does not guarantee a long-term retention. These contradicting findings may be due to the extent to what the keyword method is effective. There are some important characteristics of keyword method in order to be successful (Higbee 2001 & Hauptmann 2004). These characteristics are :

1- Phonetic similarity

As mentioned in the keyword definition that keyword should be phonetically similar (not necessarily identical) to the target vocabulary. An example for a good keyword is **flower** for the target vocabulary **Florida**.

2- Uniqueness

The association between the keyword and the target vocabulary should be unique in order to avoid the interference with other associations. A girl whose name is Florida smelling a flower is not unique, but eating it is unique.

3- Exaggeration

As mentioned in the visualization- one of the basic principles of effective mnemonics- that bizarreness is an important factor to make it more effective. Thus, to do this bizarreness there should be an exaggeration in the image which represents the association between the keyword and the target vocabulary. A big flower was eaten by a small girl (Florida) is bizarre and unusual.

4- Sensory nature

Smells, sounds, tasting, movements …etc. should be included in the visual image wherever possible. Florida (the girl) is smelling the flower and eating it improves the process of imagination and therefore memory.

5- Interactivity

The connection between the two objects should be the prime of the image. A girl whose name is Florida looking to a flower is not effective, but eating it is more effective and remembered.

6- Simplicity

The simpler the connection, the better. The image of the girl (Florida) eating many kinds of flowers is not simple, but to eat one kind of flower is simple and unique especially if the color of the flower is the same color of her dress.

7- Creativity

Being creative involves the learner much more in the association and increases depth of processing and this lead to good retention.

8- Involvement

Memory is basically linked with conscious experience. The more the learner involve in the experience, the better he/she will remember it. This is can be found more in the learner-generated keywords rather than the teacher-generated keywords.

9- Use of one keyword for different target vocabulary

Circumstantial evidence that is made by Hauptmann (2004) suggests that it is not the isolated keyword but the image that causes vocabulary retention. It therefore seems logical to assume that one keyword can be used for different target vocabulary.

10- Simplified Keywords

A keyword can be embedded in a phrase, a film/book title, a name …etc. in the target language the learner can identify. It is not the keyword itself that aids memory but the imagination it triggers. As an example of that is when presenting the target vocabulary **easy**, the phrase **take it easy** or the film **Easy Riders** is suggested.

11- Using a substitute concrete vocabulary

It is easy to visualize the concrete vocabulary like apple, car and pen, but it is difficult to visualize the abstract one like happiness, peace and justice. The procedures for using imagery to help remember abstract terms is the same for concrete terms except in adding a step using substitute concrete vocabulary to represent the abstract target vocabulary. One way of doing this is to use objects that symbolize the abstract term: for **justice**, one might picture a judge; for **happiness**, a smiling face. A second way of substituting a concrete vocabulary for an abstract one is to use objects names sound like the abstract vocabulary: happy nest for **happiness**; celery for **salary**.

Limitations of the Keyword Method

  In addition to keyword method strengths and power in learning the foreign vocabulary, it also has weaknesses and limitations. Some limitations are valid but the others are not. The valid limitations include : time constraints, abstract material, learning versus retention, imagery ability, and decoding interference. The invalid limitations include : impracticality, not aiding understanding, the memory's overall load, the mediator is a crutch, and it is trick (Higbee 2001 and Hauptmann 2004).

A) Valid Limitations

a) Time

  The visual association in the second step of the keyword method takes a little longer presentation time . This is -as the objection to mnemonics said- is time consuming. Thus, it may be noted that the speed of making visual association can be improved by practice. Also, the most effective way in implementing the keyword method in the classroom is not by asking the learners to provide their own keywords or images, but to have these provided to them by the teacher. In this way the learners spend no more time with the keyword method. Retrieval time is another way in which time may limit the use of keyword method.

b) Abstract Material

  It is discussed before that in dealing with abstract target vocabulary it is supposed to use substitute concrete vocabulary to represent it then using the visual imagery. This has at least three possible limitations:

  1. In forming the image for abstract vocabulary, the time will be longer than the concrete one because of the extra step of thinking of a concrete vocabulary to represent the abstract one. (Clark & Paivio 1987, cited in Higbee 2001)

2. The substitute concrete vocabulary is only a cue to remind the learner of the abstract idea, but not to recall the abstract vocabulary. It is possible to recall the picture of a smiling face and not be able to recall that it represents happiness.

3. It may be very hard to form good concrete vocabulary for some abstract vocabulary or ideas.

c) Learning Versus Retention

It is argued that whether mnemonics help only learning or also help retention. There are two considerations that should be kept in mind concerning the issue of learning versus retention. First, whether mnemonics in general and keyword method in particular help retention depends on how retention is measured. It can be measured by using the amount remembered the method did and the amount forgotten it did. Then using the percentage remembered or forgotten and see if it helps retention or not comparing with other methods.

The second consideration is that this issue of learning versus retention may be an important theoretical distinction to the researcher, but not for the person doing the learning.

d) Imagery Ability

People differ in their imagery ability and in their visual thinking. The adults and the children who have the ability to use imagery benefit more from mnemonics than those who lack this ability. That's why mnemonics-that depend on using visual imagery like keyword method- may have limited usefulness.

Those who have difficulty in using visualization may require some time to develop their ability, but practice can help them acquiring the ability faster. If they failed even after practice they can use verbal mediation than visual.

e) Decoding Interference

One picture can represent more than one vocabulary. The interference problem arises in recalling a concrete vocabulary that has synonyms that could be represented by the same picture. For example the picture of a small *child* could also represent the vocabulary *infant* or *baby*. That is why the high imagery is an important factor in the keyword method in order to avoid such interference.

B) Invalid Limitations

a) Impracticality

It is claimed that mnemonics are not practical since they are mainly used in memory research in the laboratory. But there are some researches (e.g. Abdel-Majeed, 2000 ; Gaul, 2004 and Sagarra & Alba, 2006) who uses mnemonics in the classroom and assure its practicality. The issue of practicality is a relative matter, what is practical depends on individual's interests and needs. For example, one person may see no practical need for using keyword method for learning foreign language, while another one preparing to visit another country may find it very useful. Even the educational uses of keyword method may not seem as practical to someone who is not in a school.

b) Not Aiding Understanding

One of the objections of keyword method is that it dose not help understanding of the subject, it just helps memorizing. This limitation is not accurately, because using the translation into the first language or the visual imagery will do convey meaning. Also, it should not be forgotten that the use of mnemonics in general is to facilitate remembering not for understanding a concept, so they shouldn't be claimed for not achieving what they are not meant to achieve. Saying that mnemonic systems are not worth using because many learning tasks do not involve straight memory is not true. There are many tasks do involve straight learning like math problems which involve

multiplication and leaning foreign language also involve memorizing of its vocabulary.

c) The Memory's Overall Load

Most mnemonics - like the keyword method - increase the amount of material one must remember. They require one to memorize the material to be remembered in addition to the material of mnemonics like images and the keywords. For example, when one wants to memorize 20 vocabulary by using the keyword method, he should also memorize 20 keywords in addition to 20 images. Therefore, it is true that mnemonics do add to the amount of material to be remembered and this may require extra effort. This extra effort occurs only once when one first uses the mnemonics but after that and by practicing, the time and the effort will be decreased.

Another point is that memory capacity is not a function of the amount of material to be learned but it is a function of how this material is organized and meaningful. So, once a person learns the additional material involved in the mnemonics, he will find the advantages of organization and meaningfulness outweigh the disadvantages of having additional material to be remembered.

d) The Mediator is a Crutch

The other criticism of keyword method and other mnemonics is that a person may become dependent on a mnemonic and use it as a memory crutch. Then he will not be able to remember the material without the crutch. Even if this criticism is true , is it bad to be dependent on a mnemonic to remember certain material? Therefore, it is better to remember material using a mnemonic than to forget the material.

e) It Is a Trick

Mnemonics are very often seen as tricks and referred to as an artificial memory. This view leads that the use of mnemonics is unfair because who uses them are not really remembering. To some people understanding the principles of memory and applying via mnemonic is not memorizing. But the

keyword method can be based on sound psychological theory and neurological evidence as in the thesis of Hauptmann (2004).

The existence of the above limitations in the keyword method dose not necessary lead to avoid using it in vocabulary teaching and learning. The researcher in the current study tried her best to overcome some limitations by following some steps:

1- Avoid using the mother tongue in searching for keywords except the names of persons. The keyword is better brought from English language in order not to make mispronunciation for the new vocabulary.

2- Provide the pictures that link between the new vocabulary and the keyword by the teacher instead of generating them by pupils because not all pupils have the ability to draw. Also, this way saves the time of teacher at the classroom.

3- To practice the method by pupils, the teacher asked them to do two or three words as a homework. Then correcting them in the next time with the whole class.

Studies Related to Keyword-based Instruction

Researchers have attempted to investigate the effectiveness of keyword method either alone or combined with other methods in vocabulary learning and retention.

Rodriguez (1999) investigated the effectiveness of rote rehearsal, context, keyword, and context/keyword methods on immediate and long-term retention of English as a foreign language (EFL) vocabulary in natural classroom settings. Eight intact ninth-grade EFL classes were randomly assigned to one of four learning conditions: rote rehearsal, context, keyword, and context/keyword condition. Cued recall was assessed either immediately or after a one-week delay. Results showed that the mnemonic-based methods

(i.e., keyword and context/keyword) proved superior to the non-mnemonic - based methods (i.e., rote rehearsal and context) in both immediate and delayed recall. Additionally, results showed that the context/keyword method produced superior recall to any of the other three methods both immediately and after one week.

Abdel-Majeed (2000) attempted to investigate the use of the keyword method in a normal classroom situation . The sample has been drawn from the population of the students of Faculty of Administrative Sciences and Economics taking English for business and economics at the English Language Teaching Unit (ELTU), University of Qatar. The sample comprised 90 students divided into two groups: an experimental group (45 students) were taught the definition of 20 non-frequent English words and nonsense words using the keyword method and a control group (45 students) who were taught the same words using a contextual method. Two booklets were constructed for each learning condition (keyword and control).

A 20 item definition recall test (recognition) was constructed to test both short term (immediate recall) and long term retention (delayed recall) of the target words. The immediate recall test was administered on the second day immediately following the end of the second teaching session. The delayed recall test was given two weeks later. In both tests, the subjects were instructed to supply the correct Arabic equivalents of the target words. The results showed that subjects in the keyword method performed significantly better than subjects in the control group at the 0.01 confidence level in both the acquisition and retention stages.

Gaul (2004) conducted a study to examine the effect of student-selection of vocabulary terms on immediate and delayed recall of these terms after students applied the mnemonic keyword strategy. The subjects were 50 sixth-grade students from two regular education classrooms in a Southeastern Pennsylvania public school. Students from the experimental classroom

received two treatments, the teacher selection/mnemonic keyword method and the student-selection/mnemonic keyword method, in a counterbalanced design. Students in the comparison group received a picture treatment. The picture treatment was similar to the keyword treatment in that they both consisted of drawing pictures that related the vocabulary words to visual images, however the picture treatment did not contain a keyword or acoustic link. A pretest was administered to all the students. After the treatment the posttest was administered immediately and a delayed recall was administered four weeks after the culmination of the experiment. Results showed that when students selected their own terms for study they scored significantly higher on all measures of immediate and delayed recall. Mixed results were obtained for the mnemonic keyword method for improving the recall of vocabulary terms because under some conditions the mnemonic keyword method alone did not improve recall over the picture comparison.

Hauptmann (2004) investigated whether the keyword method affected the vocabulary retention and motivation of EFL learners. The researcher conducted five experiments from different levels to obtain empirical evidence. The subjects were 62 learners in the experimental groups who were taught vocabulary by using the integrated keyword method and 23 learners in the comparison groups who were taught vocabulary by context with translation. This study tried to answer the question of vocabulary retention, a questionnaire and three interviews to address the issue of motivation. The results showed that the keyword method enhanced vocabulary retention to a great extent compared with comparison groups, and it had a beneficial effect on the motivation of the learners.

Sagarra & Alba (2006) investigated the effectiveness of three methods of learning vocabulary among 778 beginning second language (L2) learners. Rote memorization consisted of memorizing the first language (L1) translation of a new L2 word by rehearsal. Semantic mapping displayd L1

words conceptually related to the L2 word in a diagram. The keyword method involved associating the novel L2 word with an L1 keyword that was acoustically or orthographically similar, and then connecting the L1 keyword with the L1 translation of the L2 word. The results revealed that vocabulary learning techniques requiring deeper processing through form and meaning associations (i.e., the keyword method) yield the best retention. In addition, rote memorization of L1–L2 equivalents was more effective than creating multiple meaning associations (i.e., semantic mapping). This suggested that using the keyword method with phonological keywords and direct L1 keyword-translation linked in the classroom lead to better L2 vocabulary learning at early stages of acquisition.

Fritz et al. (2007) conducted three experiments, in experiment 1, the researcher compared the effectiveness of retrieval practice, the keyword mnemonic and rote rehearsal for learning foreign language vocabulary. Both mnemonic methods produced similar recall and were superior to rote rehearsal. In Experiment 2, participants learned German vocabulary using keywords, retrieval practice or their own method. Retrieval practice and keyword-based recall were similar and superior to self-directed study. In Experiment 3, participants studied using keywords, retrieval practice, a combination or an elaboration strategy. Criterion testing occurred immediately and after a week. For receptive learning, retrieval practice and keywords were equally beneficial but for productive learning, retrieval practice was more effective. Combining strategies produced mixed results with significant benefits only for receptive learning in the delayed test.

Yaakub (2007) examined the effectiveness and the practicality of the keyword method in teaching and learning Arabic as a foreign language within the Malaysian secondary school curriculum. The study conducted an experiment to see whether the memory learning strategy would have an impact on learners in a controlled environment. By using the keyword

method, the first test was conducted on 34 students in Form One. They were almost of the same age and same level of Arabic background. They were provided with the keyword method to learn a number of Arabic words and its function of usage. While the second test using a standard method (that has been used by all schools in Malaysia) was conducted on 27 students in Form Two from the same school. After analyzing the data, the results of the test showed that the application of keyword method had been successful in helping the students with the new vocabulary development.

Dmitsak (2007) conducted a study to examine the relationship between memory encoding techniques and working memory (WM) ability in college students enrolled in Introductory Psychology courses. The participants who were divided into low, medium, and high WM span groups, studied test booklets with psychology terms and definitions, followed by a repeated definition, a mnemonic device (i.e., keyword), or an example. It was predicted that the high WM span participants would perform better than the low WM span participants overall, that the mnemonic condition and the example condition would aide in the learning of the psychology terms more so than the repeated definition condition, that people with a low WM span would benefit more than the people with high WM span from the use of the mnemonic, and that the definition questions would be easier than the application questions on the multiple choice test. This final hypothesis was the only one supported by the data. However, even though there were no differences between encoding conditions, the participants rated the keyword and the example conditions as more helpful than the repeated definition condition.

Ismail (2008) investigated the effectiveness of keyword and context - based methods in developing Preparatory stage Pupils' EFL vocabulary achievement and retention. Instrument designed and used in the study was two equivalent forms of a vocabulary test. Form A of the test was used as a pre test for assessing EFL preparatory stage pupils' vocabulary

achievement. Form B of the test was used as a post test that was administered twice one for assessing pupils' vocabulary achievement and the second administration for assessing pupils' vocabulary retention.

The study adopted the experimental design using three groups: two experimental and one control. Experimental group A was instructed using the keyword method and the other experimental group B was instructed using the context-based method, while the control group was instructed using the traditional teaching method. The three groups received the pre − post administration of the two equivalent forms of the vocabulary test to measure their achievement and retention in vocabulary.

Results of the study showed that there was statistically significant difference between the keyword experimental group and the control group on achievement of vocabulary in favor of the keyword experimental group. Also, there was no statistically significant difference between the context experimental group and the control group on both achievement and retention of vocabulary. In addition, there was statistically significant difference between the keyword experimental group and the context experimental group on achievement of vocabulary in favor of the keyword experimental group. Besides, there was no statistically significant difference among the three groups on the retention of vocabulary.

Richmond et al.(2008) conducted a study to understand whether students could transfer use of a mnemonic under both specific and general transfer conditions. One hundred and eight eighth-grade students were randomly assigned to one of four conditions (e.g., method of loci, peg word, keyword, or free study). Over a 2-week period, students learned their assigned mnemonic device, were tested on their ability to transfer their mnemonic under a specific transfer condition (study metal alloy uses) and a general transfer condition (study Revolutionary War battle events). The results of this study indicated that students who used the keyword mnemonic could transfer

the use of a mnemonic under specific transfer and general transfer conditions. This results provided evidence to researchers and teachers that by teaching the keyword mnemonic to students may increase their repertoire of memory strategies which in turn enhances academic performance.

Brazley (2008) examined the effects of the mnemonic keyword and rote methods of vocabulary instruction on immediate and delayed word recall and application by high school students with learning disabilities. Seven high school students with learning disabilities received vocabulary instruction for 6 weeks using the mnemonic keyword and rote methods of vocabulary instruction. Tests of immediate word recall and application were given as assessments at the end of each vocabulary instruction session. Tests of delayed word recall and application were given as assessments at the end of each week. Scores on all assessments given indicate that there was no significant difference between the effectiveness of the mnemonic keyword and rote methods of vocabulary instruction.

Abdul-Razak (2008) investigated the effectiveness of keyword method in acquisition of Arabic vocabulary among students of national secondary schools in Malaysia. The researcher had conducted a field work and experimental research where data were collected from 6 experiments. 240 subjects are randomly assigned to two conditions : the experimental and control group. 110 Arabic words were selected as the instruments. The experimental subjects were instructed to use the Keyword Method to learn Arabic words while the control subjects are given no-strategy control. Then all of them would be given an immediate and delayed recall tests individually. The findings showed that the experimental subjects outperformed controls in all experiments. Although the experimental subjects outscored the controls in the experiments, in a delayed recall test, the control subjects comprising the second year students performed as well as the experimental subjects. Besides, a self-constructed questionnaire was employed as one of the instruments in

this study and the purpose is to look into students' perception of learning Arabic vocabulary using the Keyword Method. The findings demonstrated that this memory improvement technique had not only helped the students in acquiring vocabulary more easily, but also raised the students' motivation in learning Arabic vocabulary. The findings also indicated that the Keyword Method was extremely helpful in building vocabulary.

Guey et al. (n.d.) intended to explore the effect of a new keyword method on learning English vocabulary for Chinese learners. The study employed English keyword to learn a group of new English words. One hundred and twenty students of Junior College graduates with roughly eight years of learning English as a foreign language (20-21 years old on average) learned the definitions of 18 new English words(arranged in groups)either by keyword method or by direct translation and memory. An English-Chinese paired association task was administered either immediate or 1-week later in a between-subject experimental design. Results showed that both keyword method groups made superior performance on recall, and the interaction between methods and duration on recall was also significant. Results indicated that this new keyword method may be adopted as one of the means for EFL Chinese students to learn English vocabulary.

Comment on Previous Studies

A quick survey of the previous studies related to keyword method reveals the following important points :

1- Keyword method is flexible as it can be used in the elementary, intermediate and secondary stages and in the universities as well. Nevertheless, it is more effective in the early stages of learning the foreign language as shown in the study of Sagarra & Alba (2006) and DeWitt (2010). That's why the researcher selected intermediate stage pupils to teach them vocabulary through keyword method.

2- There is a strong relationship between keyword method and enhancing vocabulary achievement as in the study of Abdel-Majeed (2000), Sagarra & Alba (2006), Yaakub (2007), Fritz et al. (2007), Ismail (2008) , Abdul Razak (2008) and Guey, Cheng & Huang, (n.d.). On the other hand, Dmitsak (2007) opposed that result and showed no effectiveness of the keyword method in enhancing vocabulary achievement.

3- Keyword method has an effectiveness in enhancing vocabulary retention either the immediate retention as in the study of Abdel-Majeed (2000), Hauptmann (2004), and Abdul Razak (2008) or the delayed one as in the study of Abdel-Majeed (2000), Hauptmann (2004). While Gaul (2004), Brazley (2008) and Ismail (2008) do not agree with the results of the previous studies.

4- The integrating of keyword method with other methods of teaching vocabulary is better than using keyword method only as in the study of Rodriguez (1999) and Gaul (2004) .

5- Using unique keyword for each new vocabulary is better than using shared keywords in facilitating the recall stage. That's why the researcher tried her best to avoid repeating the keywords with more than one new word.

6- Employing English keywords to learn the new English words is available as in the study of Guey et al. (n.d.) and this reduces the interference of the mother tongue if the keywords are derived from the first language. The present study agrees with that study in using English keywords to learn the new English words.

7- Keywords can be either provided by the teacher as in Abdel-Majeed (2000) and Hauptmann (2004), or generated by the learners as in Ali (2007) and Gaul (2004). In this study they are provided by the teacher in order to overcome the limitation of time. For practicing the method by students, they are given some new vocabulary and asked them to bring keywords and visual images as a homework in every session.

8- There is a strong relationship between keyword method and raising the learners' motivation towards English language learning as in the study of Hauptmann (2004) and DeWitt (2010). Consequently, this will lead to enhance the learners' performance in learning English language.

Working Memory Capacity (WMC)
The Concept of Memory

In everyday life, people deal with different information and some of which must be kept in mind in order to recall them later on when needed. In fact, these information are stored in and retrieved from memory and this is what happens in learning. Memory is a necessary factor for learning, there is no learning without memory and all what we learn would be useless if we couldn't remember (Higbee, 2001 and Al-Zayaat, 2006). In order to understand human memory, it is important to clarify what the term memory refers to.

Ashman & Conway (1997) mention that memory refers to the ability to retain and recall what has been learned and it also refers to the place where information is retained. Al-Atoom (2004) defines memory as a scientific study of the processes of receiving information, encoding them, storing them, and retrieving them when needed. Sternberg (2008) defines memory as the process by which the past information is retrieved in order to use it in the present time. From the previous definitions, it is viewed that there are three stages or processes of memory, they are referred to as the " Three Rs of remembering " : Recording (encoding), Retaining (storage), and Retrieving (Higbee, 2001). According to Al-Atoom (2004) recording / encoding means giving meanings to the new sensory stimulus by some processes such as rehearsal, organization or summarization, retaining / storage happens in the short-term memory (LTM) and in the long-term memory (LTM) and

retrieving is represented in recalling the previous information or experiences which are encoded and retained in the LTM.

Components of Memory

The first model of memory (Figure 2.3) was proposed by Atkinson and Shiffrin in 1968. This model is called modal model of memory because a number of early models were similar as mentioned in Cowan (2005).
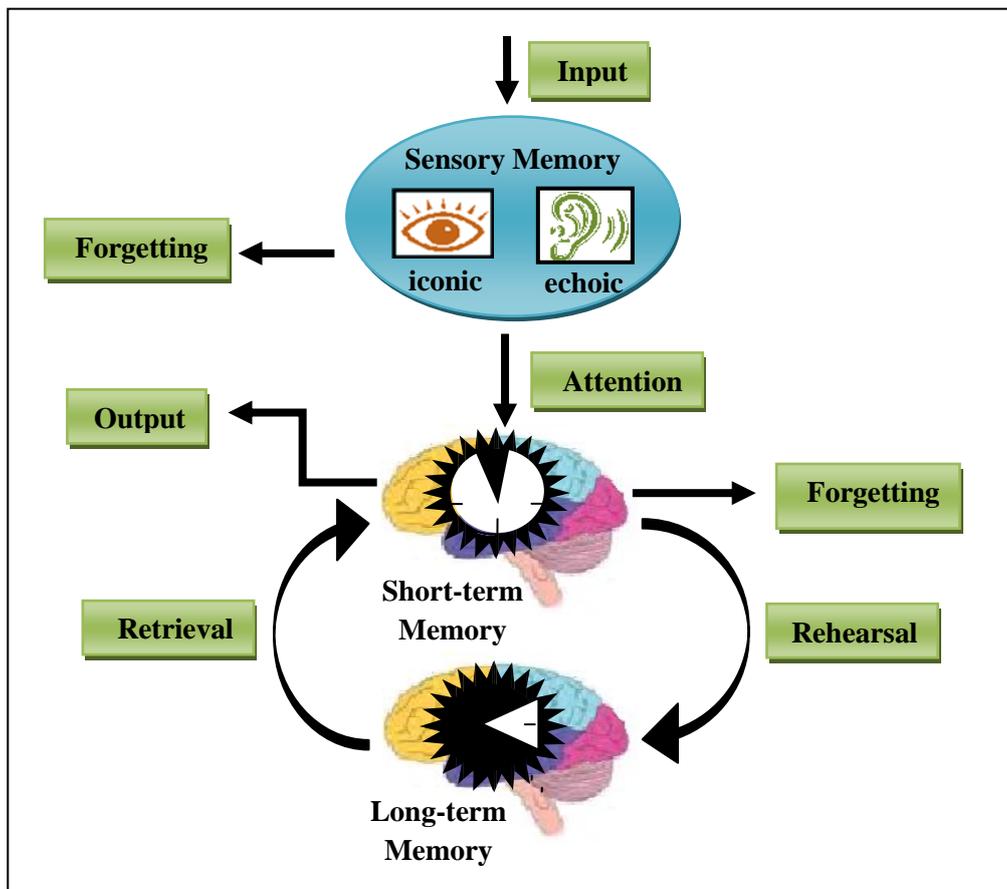
Figure 2.3 : Modal Model by Atkinson and Shiffrin (1968)

This model of memory consists of three components : sensory memory (SM), short-term memory (STM) and long-term memory (LTM). First, the information in the environment passed through the sensory memory and stored for a second. This memory has two kinds, one for vision, called *iconic memory*, and the other one is for hearing, called *echoic memory*. Then, the information passed into the short-term memory where it is processed further.

Finally, the information is encoded into long-term memory (Al-Zaghool & Al-Zaghool, 2003 and Al-Atoom, 2004).

1. Sensory Memory (SM)

Sensory memory represents the first recipient of the sensory inputs from the outside world. Attention is very important to transfer the information from sensory memory to short-term memory. If it is not found the information will be forgotten (Al-Atoom, 2004 and Al-Zayaat 2006).

This memory includes two kinds of memory: iconic memory and echoic memory. The iconic memory is responsible for receiving the real picture of the external visual stimulation as it is in the reality. Other mental processes related to attention occur while visual stimulation is kept in this memory. The information is retained for one-half of a second. Then it is transferred to STM under the condition of attention (Al-Zaghool & Al-Zaghool, 2003 and Mendonça,2003). On the other hand, the echoic memory is responsible for receiving the auditory stimulation and retaining it for short time also. All stimuli that are hearable enter or encode into this auditory sensory memory. (Mendonça,2003 and Al-Atoom, 2004).

2. Short-Term Memory (STM)

Short-term memory is a store which allows a person to hold a limited number of items such as words, or digits for a short period of time (15-18 seconds) . Information in STM is quickly forgotten unless it is processed or repeated. It was rehearsal that would facilitate the transferring of information from STM to LTM to be hold for long time. The more an item is rehearsed, the more likely it is to be transferred from short-term memory to long-term memory. The short-term memory is seen as having limited capacity (7 ± 2) and brief duration (Torres, 2003 and Mizera, 2006).

Information can be encoded in STM through three methods: acoustic coding, visual coding and semantic coding. In acoustic coding, most people encode the stimulation - even the visual one- through its pronunciation. For example, teachers of early stages teach pupils the animals through sounds. While in visual coding, people encode the information through a series of pictures. This kind of coding explains what is called photographic memory. Finally in semantic coding, people encode all the stimulation according to its meaning regardless of its sound or its image (Al-Atoom, 2004).

3. Long -Term Memory (LTM)

The information that is not rehearsed in STM will be lost. While the other information that is processed and rehearsed will be transferred to LTM. This memory is characterized by being a permanent store. It has unlimited storage capacity (Al-Zayaat 2006). The existence of information in LTM continues for long time and it can be retained there throughout person's life. This dose not necessary guarantee recalling it when needed because of some factors such as interference of other information (Al-Zaghool & Al-Zaghool, 2003).

LTM has three kinds: episodic memory, semantic memory and procedural memory. Episodic memory stores a series of experiences that a person has throughout his life. They are related to a specific time, place or event such as names, attitudes, desires and places. Semantic memory stores organized nets of meanings related to thoughts, facts, conceptions and relations. Finally, the procedural memory includes the information which is related to how to implement the procedures for doing anything unconsciously. This kind of memory stores the information as productions or rules and this needs a lot of time and effort but it is easily recalled later on (Al-Zaghool & Al-Zaghool, 2003; Al-Atoom, 2004 and Al-Zayaat 2005).

69

4. Working Memory (WM)

The idea of a passive unitary system, as the one proposed by Atkinson and Shiffrin where short-term memory would be the one and only access to long term memory, was challenged by further researches, mainly by the work of Baddeley and Hitch in 1974 (Weissheimer, 2007). Working memory means the cognitive processes that keep information in the mind during active processing of information. It includes both storing and processing at the same time (Numminen, 2002). WM is used to refer to a limited capacity system which retained information temporarily like STM but its limitation is related not only to storage capacity, but also to the amount of processes that can take place simultaneously (Mendonça,2003). WM as a multi-component system is responsible for active maintenance of information in the face of continuing processing or distraction (Conway et al. 2005). Unsworth et al. (2009) states that working memory refers to a limited capacity system responsible for active maintenance, manipulation, and retrieval of task-relevant information that is needed for ongoing cognition.

Baddeley and Hitch in 1974 proposed an initial multi-component working memory model (Figure 2.4).This initial model consisted of three components: a control system of limited attentional capacity, termed the central executive. This system is assisted by two supplementary storage systems: the phonological loop, and the visuospatial sketchpad (Baddeley, 2003 and Dmitsak, 2007).

The central executive is the most important and complicated component of working memory. It is the central store of the mental sources and it administrates the memory activities, information processes, and controlling attention, and making decisions. It is also responsible for transferring the information to LTM (Al-Zaghool & Al-Zaghool, 2003 and Mendonca, 2003).
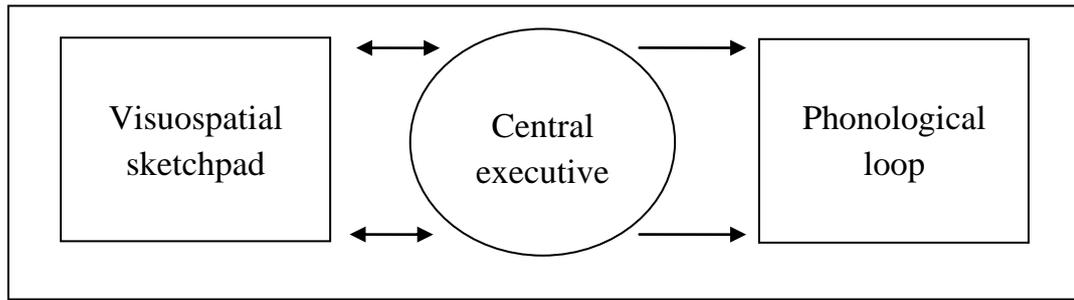
Figure 2.4 : The Initial Three-Component Model of Working Memory
(Baddeley, 2000)

The two other components of the Baddeley and Hitch working memory initial model are the phonological loop, and the visuospatial sketchpad. The structure of the phonological loop contains a phonological store which can hold the phonological information for few seconds before it decays, and an articulatory rehearsal in which the information is activated. The function of this component is facilitating the acquisition of language in two ways : the store should provide relatively free impermanent representation for new phoneme sequences. The other way is that the articulatory system should facilitate learning through rehearsal. This facilitation is likely to occur immediately for phonotactically regular sequences, but might require further effort when the sequences are irregular and unfamiliar (Baddeley, 2003 and Gamal, 2005).

On the other hand, the visuospatial sketchpad component holds the visual and the spatial information and it has limited capacity for three or four objects. Like the phonological loop, it seems possible to assume that the sketchpad might have a role in acquiring semantic knowledge about the appearance of objects and how to use them, and for spatial orientation and geographical knowledge (Baddeley, 2003).

The previous initial model of Baddeley and Hitch has encountered some problems, that's why Baddeley (2000) adds a fourth component which is the episodic buffer (Figure 2.5).This component is responsible for integrating information from the two slave systems and from long-term memory. The

buffer is presented as a completely separate subsystem, but could be regarded as the storage component of the central executive (Baddeley, 2003 and Weissheimer, 2007). According to Baddeley (2000), the episodic buffer has some similarity to the episodic long term memory concept. Nevertheless, the episodic buffer differs from long term memory in its temporary storage and it dose not present any damage in patients who have impaired episodic long term memory.

Working memory plays a crucial role in the performance of a wide range of cognitive tasks, such as comprehension, learning, and reasoning (Kemps et al. 2000). Basic language comprehension involves both lexical access and syntactic representation of the relationships between the lexical items. This needs further processing and the information must be kept in memory. The mechanism for this temporary storage and maintenance of information during the performance of language comprehension and production happens in the working memory (Chung, 2008). Also, Chen (2008) states that language converted from acquisition to retention is influenced by the working memory, frequency, ability of comprehension, and the learning strategies.
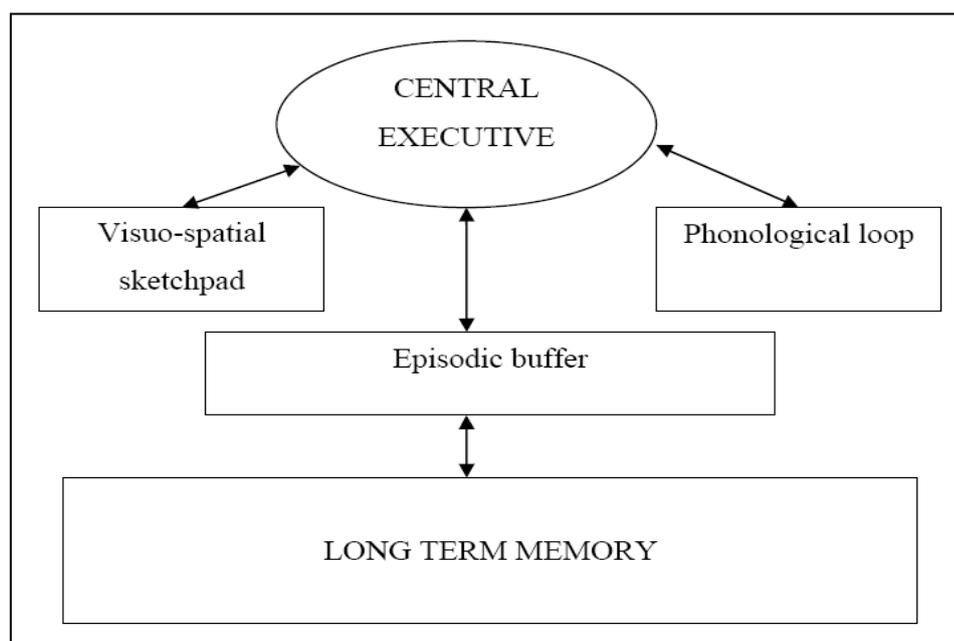
Figure 2.5 : Revised Model of Working Memory
(Baddeley 2000)

So, it is clear that working memory is an important factor in language comprehension and learning. Furthermore, working memory capacity appears to constrain many different aspects of complex cognitive behavior like comprehension and learning in both children and adults (Gathercole, 1999).

Working Memory Capacity (WMC)

Working memory capacity (WMC) acts as a limiting factor of performance in cognitive tasks which are important in the learning process. It changes depending on chronological age as illustrated in Table 2.2 and on cognitive expansion (Ahmed, 2005). WMC also acts an attention control and there are individual differences in the ability to control attention due to WMC. Also, it is not only related to new learning, but it may also enhance people's ability to use what they already know to improve their performance. (Barrett et al. 2004).

Table 2.2 : The Changes of WMC According to the Chronological Age.
(Ahmed, 2005, p.152)

Age with years	Working Memory Capacity by items N.		
	The minimum	The maximum	The mean
Less than 5 years	1	3	2
Between 5-14 years	3	7	5
14 years and above	5	9	7

Just & Carpenter (1992 , p. 123) defined WMC as " *the maximum amount of activation available in working memory to support either of the two functions: storage and processing.*" It is also defined as " *the limitations in the ability to use controlled processing to maintain information in an active, quickly retrievable state*" (Engle, 2001, p. 301). It can also be defined as the ability to hold something in memory while simultaneously carrying out some

form of computation (Casey, 2003). Furthermore, Unsworth & Engle (2008) mentioned that WMC can be understood as the ability to simultaneously maintain information for later recall and process.

It can be concluded from the above definitions of WMC that this capacity is not about storage information only but is about storage and processing information together. Engle (2001) added that WMC is also about retention over a period where there are distractions. So, the attention is an important condition while storing and processing information. Therefore, WMC differences emerged in conditions of intentional but not incidental learning. This indicates that individual differences in WMC occurs in tasks requiring some form of control with little difference appearing on tasks that required processing automatically (Unsworth & Engle , 2005).

WMC and Vocabulary Learning

Through studying the components of working memory and their functions, it is clear that there is a relationship between WMC and language learning. Kaushanskaya (2007) mentions that the phonological loop of WM is seen as a dedicated memory system responsible for learning unfamiliar verbal information. He adds that the learners who have higher scores on various phonological measures (e.g., non-word repetition, phoneme manipulation, etc.) are better in the retention of foreign vocabulary. For instance, Service, 1992 (cited in Kaushanskaya,2007) found that repetition accuracy for English artificial words was a good predictor of learning English vocabulary by Finnish primary school students.

Also, learners with high WMC are better able to both comprehend and produce new vocabulary than those who have low WMC as indicated by Mendonça (2003). He also states that learners with high WMC used vocabulary learning strategies that led them to memorize and produce more foreign words. These strategies less the burden on the working memory.

That's why if the capacity of the working memory is low, learning can be considerably improved by selecting materials or strategies that place less burden on the working memory (Numminen, 2002).

Therefore, the individuals with high WMC tend to have better learning than those individuals with low WMC and this due to the larger capacity they have to store information which is a result of their using of such strategies. From the above explanation it is found that WMC has a crucial role in learning vocabulary.

Studies Related to Working Memory Capacity

WMC is one of limitations of learning process and there are many researchers investigated that thorough their experiments. Following are some of these researches.

Badawi (2002) conducted a study to investigate the effect of working memory capacity and type of information on the encoding strategies and the efficiency of long-term retention. Two hundred and eighty four students from first year at Education College - Suez Canal University were subjected in this study. The instruments used were : semantic information encoding tasks, auditory information encoding tasks, non-semantic information encoding tasks and verbal working memory capacity tasks**.** The results showed that (1) students with high WMC outperformed students with low WMC in using the effective encoding strategy and in long-term retention. (2) the most effective strategy was organizing strategy and the least was rehearsal strategy.

Mendonça (2003) investigated in his study (1) the relationship between working memory capacity and vocabulary acquisition in L2, (2) the strategies higher and lower span individuals made use of to learn L2 vocabulary. Seventeen graduate students of the Graduate Program in English Language and Literature at the Federal University of Santa Catarina (UFSC) were assigned to participate in this study. Participants' working memory capacity

was assessed by means of the Speaking Span Test. Vocabulary acquisition was assessed by the production of a narrative in which individuals attempted to recall and use 20 words and by a receptive test, in which individuals attempted to recognize the 20 taught words given in a list, either translating or providing the definitions of these words. In addition, an interview was used as a means of unfolding what strategies participants used to learn the new L2 words. Statistical results revealed that working memory capacity correlated with L2 vocabulary retention. The results indicated that higher spans were better able to both comprehend and produce new vocabulary items in an L2 than lower span individuals. The results also indicated that both higher and lower spans presented better performance when recognizing new vocabulary than when producing it. Furthermore, the results showed that higher spans had no particular strategy to make use of to retain new vocabulary items. Finally, the findings showed that *reading several times the text* where the word was found was the most frequent strategy used by both higher and lower spans to learn a new L2 word. In other words, most individuals, regardless of their working memory capacity, made use of the context to remember word meaning.

Torres (2003) conducted a study which had two aims. Firstly, it investigated whether there was a relationship between working memory capacity and reader's performance on a main idea construction task (L1 and L2). Secondly, it investigated whether readers' profile of strategy use (L1 and L2) related to their working memory capacity. The participants were 18 MA and PhD students at University of Federal Santa Catarina, all of them had Brazilian Portuguese as L1 and English (advanced level) as L2. Participants read two texts (L1 and L2) and provided verbal reports which were scored for the presence of main ideas. In addition, working memory capacity was measured by the Reading Span Test in L1 and L2. Results indicated that working memory capacity, as measured in L1, correlated with reader's ability

to construct the main ideas in L1 as well as in L2; working memory capacity, as measured in L2, correlated with reader's ability to construct the main idea in L2. To conduct the second investigation, data was displayed on frequency tables and two statistical techniques, namely, the Simple Correspondence Factor Analysis and the Cluster Analysis were performed. The results indicated that high-span readers activated prior knowledge, but were aware of the need to update their knowledge-base assumptions. As a result, they avoided committing themselves to an early interpretation based only on prior knowledge like low-span readers.

Stromfors (2005) explored the impact of working memory capacity and student learning in a dual modality, multimedia environment titled *Visualizing Topography.* This computer-based instructional program focused on the basic skills in reading and interpreting topographic maps. One hundred and fifty-one subjects were randomly assigned to either the audio-visual or the visual-visual condition. The instruments were two versions of the program presented the same instructional content but varied the modality of verbal information: the audio-visual condition coordinated topographic maps and narration; the visual-visual condition provided the same topographic maps with readable text and the Figural Intersection Test to separate subjects into three levels in terms of their measured working memory capacity: low, medium, and high.

The results showed that subjects with low and medium working capacity benefited more from the audio-visual condition than the visual-visual condition, while subjects with a high working memory capacity did not benefit from either condition. Also, results revealed that the audio-visual condition favored females with low working memory capacities. Furthermore, splitting information into two, non-redundant sources, one audio and one visual, may effectively extend working memory capacity and then facilitate students' learning.

Luqta (2007) conducted a study to discover the relationship between working memory capacity, cognitive style and speed of perception and mental processes during problem solving among Jordanian students. A random cluster sample was chosen from the four Amman directories. It was composed of (318) students, (159) males and (159) females. A number of measures were used, namely working memory capacity test, cognitive style test, perception speed test and a problem solving test. The problem solving test was composed of (5) problems presented in a visual form, and another (5) problems presented in a verbal form. Working memory capacity and problem solving tests were pencil and paper tests, while cognitive style and perception speed tests were programmed on a computer so that each item was presented on a monitor and the time of response was recorded in seconds, as well as the type of response.

Results revealed that there were positive significant correlations at (p = 0.05) between all of the variables and problem solving. Also, the results indicated that there were significant differences at (p = 0.05) between imagers and visualizers in the performance of problem solving, in favor of visualizers. Furthermore, the results indicated that the participants in the upper category were better than the participants in the lower category in mental processes during problem solving.

Shanshan & Tongshun (2007) conducted a study to investigate the effect of working memory on listening process and its relationship with listening comprehension. Fifty-nine fresh men from Shanghai Jiao Tong University participated in the study. The subjects native language Chinese（L1）and the foreign language English（L2）were both employed in working memory capacity test in order to examine which one was more efficient in studying the relationship between working memory and the foreign language listening comprehension. The results indicated that working memory was an effective predictor for EFL listening comprehension, i.e. learners with larger working

memory capacity were more likely to have better abilities in listening comprehension. Furthermore, the results showed that although L1 working memory span is significantly correlated with L2 working memory span, L2 working memory span played a more effective role in differentiating learners EFL listening comprehension.

Weissheimer (2007) investigated the relationship between working memory capacity and L2 speech development. It also investigated whether the speaking span test can serve as a predictor of L2 speech development. Forty-five students of University Federal da Bahia were submitted to two data collection phases, each one consisting of a working memory test (*speaking span test*) and a speech generation task, with a twelve-week interval between the two data collections. A control group consisting of ten participants was submitted to two speaking span tests with no interval between them. Participants' speaking samples were analyzed in terms of fluency, accuracy, complexity and weighted lexical density (percentage of weighted lexical items over the total number of linguistic items produced). The results, in general terms, showed that both lower and higher span individuals experienced some increase in L2 speech production scores from phase one to phase two of the experiment. However, only lower span participants had a statistically significant improvement in working memory scores over trials. In addition, the speaking span test was related to the development of complexity in speakers' L2 speech, but not of fluency, accuracy, or lexical density.

El-Seteha (2008) conducted a study that aimed to identifying the reaction between the working memory capacity and reading comprehension disorder and aimed at recording the differences between working memory capacity and children who have reading comprehension disorder and the ordinary children. The sample consists of (90) children. The subjects were forty five children who have reading comprehension disorder and forty five ordinary children. Their ages were between 9 years and one month to 9 years and ten month in

class four. The aids used in the study were reading comprehension test prepared by the researcher, a measure to evaluate child's behavior to choose learning disabilities cases by Moustafa kamel, rapid nervous choose test to choose students learning disability by Moustafa Kamel, mental ability test prepared by Farouk Abd Elfatah and working memory capacity prepared by the researcher. The results pointed that: 1. there was a relation between reading comprehension disorder and working memory capacity in performance to remember shape and the end of sentences. 2.There were difference between children who have reading comprehension disorder and ordinary children. 3.There were differences between female who had reading comprehension disorder and ordinary female, in performance of member letter and shape. 4.There were differences between male who had reading comprehension disorder and the ordinary male in performance of working memory capacity and the result for ordinary male. 5.There were no differences between male and female who had reading - comprehension disorder in performance of working memory capacity Test.

Finardi (2009) examined whether working memory capacity was related to the acquisition and retention of a syntactic structure as it emerged in FL speech. The study departed from the general hypothesis that working memory capacity assessed in terms of a speaking span test used in two versions, one in L1 and another one in FL, would correlate with the retention and acquisition of a syntactic structure in FL speech. Ninety-seven adult learners of English as a foreign language participated in this study,(50) control and (47) experimental. The method used was quasi-experimental and mainly quantitative and correlational. The target language structure investigated was agreeing with *So+aux+I* and *Neither+aux+I* in short responses in FL speech. Retention of a syntactic structure was operationalized as correct use of the target language structure in a focused, immediate test. Acquisition of a syntactic structure was operationalized as accurate use of the target language

structure in an unfocused, delayed test. Overall results showed that working memory capacity (assessed in terms of a speaking span test in both L1 and FL) was related to the acquisition of a complex syntactic structure in L2 speech.

Andersson (2010) examined the contribution of working memory processes in children's foreign language processing of sentences and short stories. A total of 95 children were given measures of working memory when they were 9-10 years old. One to two years later at ages 11-12, tasks tapping foreign language literal comprehension (English) and native language inferential comprehension (Swedish) were administered. The results demonstrated that both central executive and phonological loop processes predicted foreign language comprehension, whereas central executive processes but not phonological loop processes predicted native language reading comprehension. These findings showed that children's foreign language processing was supported by their working memory capacity tested in their native language.

Comment on Previous Studies

In the light of the findings of the previous studies, the following points could be highlighted:

1. There is a strong relationship between WMC and vocabulary acquisition and retention as shown in the study of Badawi (2002) and Mendonça (2003).
2. WMC plays an important role in the cognitive process such as reading comprehension, auditory comprehension and problem solving as in the study of Torres (2003), Luqta (2007), Shanshan & Tongshun (2007) and El-Seteha (2008).

3. Learning English as a foreign language or as a second language is related to WMC of learners as shown in the study of Mendonça (2003), Weissheimer (2007), Finardi (2009) and Andersson (2010).

4. Learning through senses helps in extending WMC and then facilitate students' learning as in the study of Stromfors (2005) and Luqta (2007). That's why the researcher in the current study select keyword method which requires the use of some senses.

5. The good use of WMC through using several learning strategies has a positive role in organizing the learning process and then developing the learners' performance as stated in the study of Badawi (2002), Torres (2003) and Mendonça (2003).

6. The current study agrees with some studies (e.g. Badawi, 2002; Weissheimer, 2007 and El-Seteha, 2008) in using working memory tasks that requires both maintenance and process at the same time to measure pupils' WMC.

Hypotheses of the Study

In order to answer the questions of the study and in the light of the theoretical and practical justifications and the results of the previous studies, the following hypotheses are formulated:

1. There are no statistically significant differences between means of scores obtained by the study groups in the post application of vocabulary achievement test and its levels according to teaching method, pupils' WMC or the dual interaction between them.

2. There are no statistically significant differences between means of scores obtained by the study groups in the delayed application of vocabulary achievement test and its levels according to teaching method, pupils' WMC or the dual interaction between them.

Chapter Three

Research Methodology

Chapter Three
Research Methodology

Introduction

This chapter discusses research methodology that was used to investigate the effectiveness of keyword-based instruction in enhancing English vocabulary achievement and retention of intermediate stage pupils with different working memory capacities. It includes two sections: the first section presents population and subjects, design of the study, instruments and procedures of preparing the instructional materials and the second section discusses the procedures of conducting the treatment.

The First Section:

1. Population and Subjects

The population of the study was 3rd intermediate grade female pupils who were registered in the Ministry of Education for the academic year 1431-1432H. The researcher selected this grade for two reasons. The first one is that WMC in this age (15 years) is fixed and unchanged for most individuals as mentioned in Ahmed (2005). The second reason is that pupils in this grade have adequate repertoire of English vocabulary that enable them to deal with keyword method which needs a lot of familiar vocabulary to be used as keywords.

The subjects (N = 96) were randomly selected from two intermediate schools in Taif : 3rd intermediate school and 22nd intermediate school. Two classes were randomly selected from four classes in the 3rd intermediate school to represent the experimental group (N= 47). These two classes were the second (3/2) and the fourth (3/4). Also, two classes were randomly selected from five classes in the 22nd intermediate school to represent the

control group (N= 49). These two classes were the first (3/1) and the third (3/3). The subjects' mean age was 15 years and 6 months.

• Homogeneity of the Study Groups

The vocabulary achievement test (VAT) was used as a pre test and it was administered to the two groups of the study (experimental and control) in order to determine their homogeneity. A t-test for independent groups was used to compare the mean scores of the two groups as shown in table (3.1).

Table 3.1: T-Test for Independent Groups to Compare the Mean Scores of the Two Groups: Experimental and Control on VAT

Group	N	Mean (M)	Std. Deviation (SD)	Std. Error Mean	F	Sig.	t	df	Sig. (2.tailed)
Experimental	47	10.0638	6.45858	0.94208					
Control	49	8.3469	4.15607	0.59372	3.568	0.062	1.555	94	0.123

The above table shows that there is no significant difference [t (94) =1.555, p = 0.123 ; f (47,49) =3.568, P = 0.062] between the mean scores of the experimental group [M=10.0638, SD=6.4585] and the mean scores of the control group [M=8.3469, SD = 4.15607]. This indicates homogeneity of the two groups.

2. Design of the Study

The current study used a quasi experimental design employing two groups. One group was the control group who was taught vocabulary of English language book of 3rd intermediate grade (*Say It in English*),1st term from unit 1 to 7 through traditional method. The second group was the experimental group who was taught the same vocabulary through keyword method.

This design included the following variables : an independent variable which was keyword method, two dependent variables which were vocabulary achievement and vocabulary retention and a classification variable which was working memory capacity. The following figure shows the design of this study :
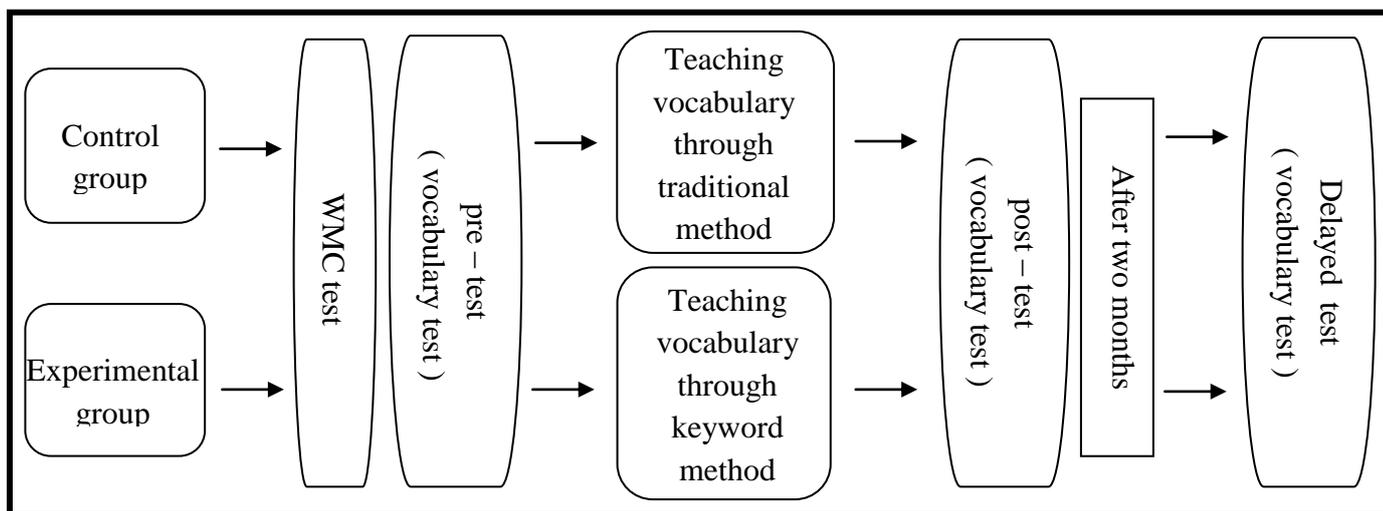
Figure (3.1) : Design of the Study

3. Instruments of the Study

To achieve the aims of the current study, the following instruments were used :

A. Vocabulary Achievement Test (VAT)

The VAT (Appendix 2, p.153) was used as a pre test to determine the homogeneity of pupils in both groups (control and experimental) before being exposed to the traditional method and the keyword method of teaching vocabulary. Also, it was used as a post test for both groups to measure their vocabulary achievement. Again, the same test was used as a delayed test after two months from administering post test in order to measure vocabulary retention of both groups too.

To identify the steps of preparing the achievement test, the researcher read some specialized references in this field. From among was: Al-Jalabi, (2005) , Milhim, (2005) and Yosef & Al-Refaai, (2008). The steps were identified as follows:

1- Preparing the Table of Specifications :

In order to prepare the table of specifications, the relative importance of vocabulary number, the pages number, the sessions number and the cognitive levels were determined.

For estimating the relative importance of vocabulary number in each unit, first the vocabulary was identified through out the six units: unit (1) = 7, unit (2)= 12, unit (3)= 15, unit(5)= 13, unit(6)= 22, and unit(7)=11. The whole number of the vocabulary was 80. Then, the relative weight of vocabulary in each unit was calculated according to the following equation : (the total of vocabulary in each unit / the total of vocabulary in all units) x 100. They were: 8.75, 15, 18.75, 16.25, 27.5, and 13.75 respectively.

The same procedures were followed in determining the relative importance of the pages number and the sessions number of vocabulary section in each unit. The results are illustrated in the following table:

Table 3.2: The Relative Weights of Vocabulary No. , The Pages No. and The sessions No.

Units	The No. of vocabulary	The relative weight	The pages number	The relative weight	The sessions number	The relative weight
1	7	8.75	1	16.67	1	8.33
2	12	15	1	16.67	2	16.67
3	15	18.75	1	16.67	2	16.67
5	13	16.25	1	16.67	2	16.67
6	22	27.5	1	16.67	3	25
7	11	13.75	1	16.67	2	16.67
The total	80	100	6	100	12	100

As for determining the relative importance of the cognitive levels, the following steps were processed :

a- Recording the results of the relative importance of vocabulary in each unit, the pages number and the sessions number .

b- Extracting the mean of the relative weights of the previous three relative weights according the following equation :

(The relative weight of vocabulary + The relative weight of the pages number + The relative weight of the sessions number) / 3

That mean (Table 3.3) represented the number of the supposed objectives in each unit .

c- Distributing the objectives to the cognitive levels (Table 3.4). The researcher depended on the Bloom's Taxonomy of the educational objectives as follows : 1- Knowledge , 2- Comprehension and 3- Application.

Table 3.3: The Mean of the Three Relative Weights

Units	The relative weight of the vocabulary	The relative weight of the pages No.	The relative weight of the sessions No.	The Mean
1	8.75	16.67	8.33	11.25
2	15	16.67	16.67	6.11
3	18.75	16.67	16.67	17.36
5	16.25	16.67	16.67	16.53
6	27.5	16.67	25	23.06
7	13.75	16.67	16.67	15.70
The total	100	100	100	100

The percentage of the cognitive levels is : 30 : 30 : 20 : 20, but because of canceling the higher-order cognitive levels (analysis, synthesis and evaluation) the percentage was modified as follows : 30 : 30 : 40 .

Table 3.4 : Distributing the Objectives to the Cognitive Levels

The Mean	Cognitive Levels		
	Knowledge 30%	Comprehension 30%	Application 40%
11.25	3.38	3.38	4.5
16.11	4.83	4.83	6.44
17.36	5.21	5.21	6.94
16.53	4.96	4.96	6.61
23.06	6.92	6.92	9.22
15.70	4.71	4.71	6.28

2- Determining the Number of VAT Items

The number of the test items were (40) and in order to determine the number of test items for each cognitive level (Table 3.5), the percentage of each cognitive level was divided by 2.5 (100 / 40 = 2.5) .

Table 3.5: Determining the Number of Test Items for Each Cognitive Level

The Units	The Number of Test Items for Each Cognitive Level						
	Knowledge		Comprehension		Application		The Total
1	1.35	1	1.35	1	1.8	2	4
2	1.93	2	1.93	2	2.58	2	6
3	2.08	2	2.08	2	2.78	3	7
5	1.98	2	1.98	2	2.64	3	7
6	2.77	3	2.77	3	3.69	4	10
7	1.88	2	1.88	2	2.51	2	6
The Total		12		12		16	40

From the above table, it is clear that the test items are 12 in knowledge and comprehension levels and 16 in application level. Furthermore, the test items are 4 in the first unit, 6 in the second and seventh units, 7 in the third and fifth units, and 10 in the sixth unit.

3- Identifying the Content of VAT

The content of the test was designed according to the vocabulary section in English language book (*Say It in English*) of 3rd intermediate grade,1st term. The researcher chose a representative sample of those vocabulary according to its frequency and weight in the book (Table 3.6).

Table 3.6: The Selected Vocabulary According to its Frequency
and Weight in the English Language Book

The Units	The Cognitive Levels		
	Knowledge = 12	Comprehension =12	Application = 16
1	graph	proofread	plan
			summarize
2	museum	career	trip
	picnic	abroad	arrange
3	currency	location	Chinese
	Europe	Judaism	Franc
			Turkish
5	garbage	resources	littering
	recycle	pollution	environment
			smoke
6	senses	bitter	smell
	rotten	sight	sweet
	square	hearing	soft
			taste
7	embarrassed	jealous	neglected
	angry	hurt	worried

4- Determining and Arranging the Types of VAT Questions

The VAT gradated from knowledge to application level. That's why the researcher tried to write different types of questions which are preferred to be used in the vocabulary test as mentioned in Nation (2001). These types were :

1. Write the correct word under the suitable picture (6 marks).

2. Complete the following sentences by using the suitable picture number (6 marks).

3. Fill in the spaces with the right words (7 marks).

4.Replace some words from the following sentences with the words in brackets to give the same meaning (5 marks).

5.Use the following words in meaningful sentences of your own (6 marks).

6- Choose the correct answer from the table down to complete the paragraph (10 marks).

It is noticed from the pervious explanation of questions that they were arranged according to the three cognitive levels. Questions (No. A & B) measured knowledge level in which pupils only remembered vocabulary form and meaning through pictures. Questions (No. C & D) measured the comprehension level, i.e. understanding the meaning of vocabulary. The last two questions (No. E & F) measured the application level. Question No. E measured pupils' ability to apply vocabulary in separate situations, while question No. F measured the same ability but in communicative real life situations.

5- Writing the Instructions of the Test

The instructions of the test were written in the first page of the test. They contained the following points:

1. Number of test questions

2. The way of answering some questions that seem unknown to pupils.

4. Test time.

5. Total score of the test

6- The Test Validity

The first version of the test, which consisted of 40 items, was validated by specialist jurors (Appendix 3, p.159) who consisted of EFL professors (N=4), EFL supervisors (N=3) and EFL teachers (N=4). A checklist was presented to the jurors in order to get their suggestions concerning the following criteria:

- Clarity of test instructions

- Clarity of pictures

- Clarity of questions

- Variety of questions

- The language accuracy

- Relevance to content

- Suitability to pupils' level

- Objectivity of scoring

- Sufficiency of space allocated for answering.

- Coverage of the three cognitive levels : (knowledge, comprehension and application).

   The test was proved to be valid as the jurors approved most of questions and suggested some modifications which are illustrated in the following points:

1. Rephrasing some of test instructions.

2. Writing an example for answering questions No. A,B, D and F .

3. Adding additional words to questions No. A and C in order to lessen the factor of guessing.

4. Changing the question (No. B) from writing the vocabulary under the pictures to completing the sentences by using the suitable picture number.

5. Adding choices to question (No. F).

7- The Pilot Experiment of VAT

   After the test was validated and the permission was taken from the formal institutions (Appendix 4, p.161), the test was administered to a pilot sample which consisted of 30 pupils and not participating in the experiment. This pilot experiment was conducted in order to obtain the following data:

- Test reliability

- Test items analysis :

1.The item difficulty

2.The discrimination index of each item

- Internal consistency

- The test time allotment.

• **Test Reliability**

The test reliability was estimated by using Cronbach's Alpha method. The standardized Cronbach's Alpha = 0.898 which meant that the test had considerable reliable according to Alaam (2006).

• **Test Items Analysis**

Test items analysis is important in determining the effectiveness of the test as an evaluative instrument. Appendix (5, p.164) shows the items analysis of the vocabulary achievement test which are the item difficulty and the discrimination index of each item of the test.

The item difficulty was estimated by dividing the frequencies of incorrect answers by the total number of pupils. On the other hand, the discrimination index was estimated by using inter-item correlation. This correlation was between the total score and each item of the test. The values of the item difficulty range between 0.20 and 0.80 for all test items except items No. 2,13, 17, 19, 20, 21, 26, 27, 28, 29, and 33. The researcher did not write these items because their discrimination index were within acceptable range (0.10 and above) except items No. 21 and 33. The discrimination index of these two items were negative which indicated that they were either difficult or ambiguous. This led the researcher to write these two items again.

• **Internal Consistency**

The internal consistency coefficients of vocabulary achievement test levels was estimated through calculating the correlation coefficients between the test levels (knowledge, comprehension and application) and the total score of the test. The results are illustrated in the following table:

Table 3.7: The Internal Consistency Coefficients of VAT

Levels	Comprehension	Application	The Total
Knowledge	$0,494^{**}$	0.750^{**}	0.897^{**}
Comprehension	____	0.647^{**}	0.768^{**}
Application	____	____	0.929^{**}

[**]. Correlation Coefficients are significant, $p< 0.01$ (2.tailed).

The above table shows that the values of correlation coefficients are significant, $p< 0.01$. This indicates internal consistency of the test.

• **The Test Time Allotment**

The test time was estimated by calculating the mean time between the time of giving the answered test paper by first pupil (25 m.) and the time of giving the answered test paper by last pupil (45 m.). It was $(25 + 45) \div 2 = 35$ minutes.

B. Working Memory Tasks (WMT)

An Arabic version of working memory tasks by Shalaby (2010) (Appendix 6, p.167) were adopted to measure WMC of pupils through a group of tasks measuring the two functions of maintenance and processing simultaneously. It includes nine tasks: three verbal tasks, three visual-spatial tasks and three numerical-verbal tasks. The test were administered to a pilot sample (No.30) to measure its validity and reliability.

• **Test Validity**

The test validity was estimated by using internal consistency through calculating Pearson product-moment correlation coefficient for the total score of the whole test with the total score of the three tasks of working memory: verbal task, visual-spatial task and numerical-verbal task. The results of

correlation coefficients were 0.874[**], 0.533[**] and 0.854[**] respectively. Those values of correlation coefficients were highly significant at p< 0.01 which indicated the internal consistency of the test.

• **Test Reliability**

Shalaby (2010) estimated the test reliability on a sample from Egyptian population (N=83) by using Cronbach's Alpha method. These methods represented the correlation between the items of each kind of tasks and the total score of this kind and the correlation between the three total scores of the three tasks and the total score of the whole test. The results are illustrated in the following table:

Table 3.8: The Results of Cronbach's Alpha methods by Shalaby (2010)

Items	Standardized Cronbach's Alpha
The total score of verbal tasks with the scores of its items	0.770
The total score of visual-spatial tasks with the scores of its items	0,777
The total score of numerical-verbal tasks with the scores of its items	0,688
The three total scores of the tasks with the total score of the whole test	0,797

Furthermore, the test reliability was estimated again on a sample from Saudi population (No.30) by using Cronbach's Alpha method too. The results are illustrated in the following table:

Table 3.9: The Results of Cronbach's Alpha Methods

Items	Standardized Cronbach's Alpha
The total score of verbal tasks with the scores of its items	0,820
The total score of visual-spatial tasks with the scores of its items	0,596
The total score of numerical-verbal tasks with the scores of its items	0,732
The three total scores of the tasks with the total score of the whole test	0.812

The above table shows that the values of Cronbach's Alpha methods indicate that the test has a considerable reliable according to Alaam (2006).

4.The Procedures of Preparing Instructional Materials

The instructional material consisted of a teacher's guide (Appendix 7, p.170) and pupil's worksheets (Appendix 8, p.208). The researcher prepared the teacher's guide that showed the procedures for teaching vocabulary by using keyword method. Some references were read to help preparing the guide, e.g. Hulstijn (1997), Higbee (2001), Nation (2001), Campos et al. (2003), Gaul (2004) and Hauptmann (2004). The guide included the following:

- an introduction
- a brief summary about keyword-based instruction
- some directions for the teacher to be followed when teaching English vocabulary by using keyword method (guidelines)
- vocabulary of the units from 1 to 7 except 4
- instructional objectives of each lesson
- presentation, materials and evaluation of each unit

The pupil's worksheets included activities on vocabulary of the six units. These activities were prepared to achieve the objectives of each vocabulary lesson. After finishing the teacher's guide and the pupil's worksheets, they were presented to the jurors in order to get their suggestions in the jury checklist (Appendix 9, p.227). The jury members' suggestions had been taken into consideration when writing the final form of the worksheets.

The Second Section:

Procedures of Conducting the Treatment

1. Administration the Tests

A- Pre-administering the vocabulary achievement test to the groups of the study. This was done in order to determine their homogeneity as discussed before in this chapter.

B- Administering WMC test to both groups of the study (experimental and control) in order to divide them statistically according to their WMC (Figure 3.2). They were placed in three sub groups: high working memory capacity (HWMC), medium working memory capacity (MWMC) and low working memory capacity (LWMC) using their working memory tasks items score. The items scores were first divided into thirds. The 33rd percentile was an items score of 51 and 67th percentile was an items score of 58.99. Thus, participants who had items scores of 0 to 51 were placed in the LWMC group (N=32), those who scored a 51.1 to 58.99 were placed in the MWMC group (N=32) and those scored a 59 and greater were placed in the HWMC group (N=32).
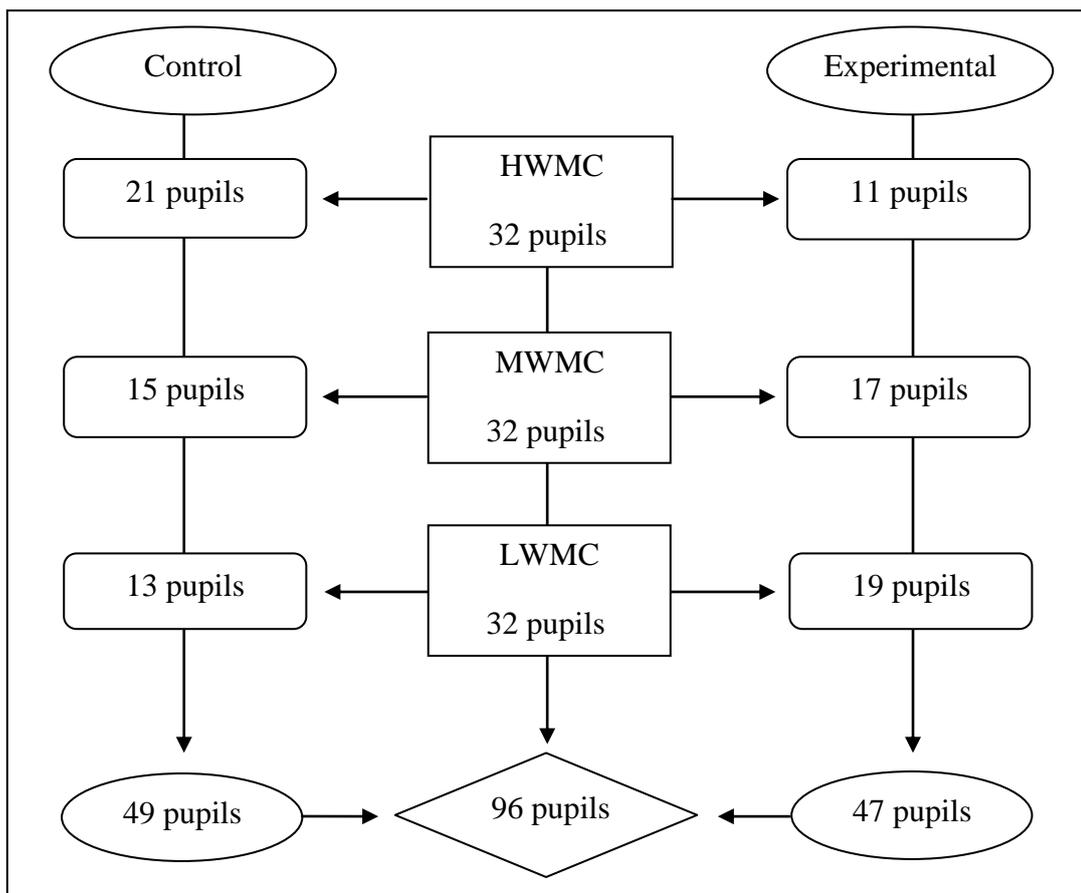
Figure 3.2: The Distribution of the Study Groups According to their WMC

2. Teaching the Vocabulary

The researcher taught the assigned vocabulary to the experimental group by using keyword method and to the control group by using the traditional method. The researcher taught both groups in order to control any extraneous variables such as having two teachers (the teacher and the researcher) for the experimental group. Therefore, both groups (the experimental and the control) have been taught in the same circumstances with the difference of teaching method. The teaching of each group took one month and a half : two sessions per week. The time for each session was 45 minutes.

• Teaching Control Group:

The researcher taught the control group by using the traditional method. She followed the teacher's guide prepared by the Ministry of Education (1431-1432 H) for teaching the English Language course of 3rd Intermediate grade. She started by explaining the definition of the vocabulary either verbally or visually through pictures. Then explaining the tasks in the pupil's book and asking the pupils to do them individually, in pairs or in groups. The researcher used some materials such as flash cards, pictures, dictionary, worksheets and multimedia. As a homework, the researcher asked the pupils to do the exercises of the vocabulary section for each unit in the pupil's workbook.

• Teaching Experimental Group:

Keyword-based instruction was followed by the researcher in teaching the vocabulary for the experimental group. The researcher followed the following steps:

1- Listing the vocabulary in the board and explaining its meaning either through definition, examples, translation or drawing .

2- Writing the keyword for each word and illustrating the acoustic link between them.

3- Presenting the visual images through multimedia and explaining them to pupils. These images combine the meaning of new vocabulary with the meaning of keyword interactively.

4- Asking pupils to do the activities in the pupil's worksheets individually, in pairs or in groups. Appendix 10, p.231 illustrated examples of some pupils' drawings.

3. Administration the Post Test

After finishing teaching both groups (experimental and control), they were applied to the post test of vocabulary achievement in order to measure their vocabulary achievement.

4. **Administration the Delayed Test**

The researcher administered the vocabulary achievement test again to both groups (experimental and control) after two months from the post administering in order to measure their vocabulary retention.

5. Processing the Results Statistically

In order to process the results of the study groups statistically, the researcher used the computerized program: Statistical Package for Social Sciences (SPSS). Means, standardized deviations, two-way ANOVA, t-test for independent groups, and Tukey's multiple comparison test were used in this study.

Chapter Four

Results and Discussion

Chapter Four

Results and Discussion

Introduction

This chapter presents the results of the current study and their discussion. This presentation is organized according to the study hypotheses that guided the study. In order to test these interactive hypotheses, the researcher used two-way ANOVA, t-test for independent groups and Tukey's multiple comparison test.

1- Results Related to the First Hypothesis

The first hypothesis states that: " *There are no statistically significant differences between means of scores obtained by the study groups in the post application of vocabulary achievement test and its levels according to teaching method, pupils' WMC or the dual interaction between them."*

To test this hypothesis, two-way ANOVA was conducted to investigate the effect of teaching method (keyword method and traditional method) and WMC on the total score of vocabulary achievement test (VAT) and its levels (knowledge, comprehension, and application). The researcher divided the subjects according to the teaching method into two groups : experimental group which was taught vocabulary by using keyword method and control group which was taught the same vocabulary by using the traditional method.

Also, the researcher divided the subjects according to their WMC into three sub groups: high working memory capacity (HWMC), medium working memory capacity (MWMC) and low working memory capacity (LWMC). The results of two-way ANOVA are illustrated in the following table:

Table 4.1 : Two-way ANOVA Results of Teaching Method and WMC on VAT

Variable	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Knowledge	Teaching Method (1)	74.765	1	74.765	8.958	0.004
	WMC (2)	303.673	2	151.836	18.192	0.000
	(1) × (2)	23.193	2	11.596	1.389	0.255
	Error	751.183	90			
	Total	5425.000	96			
Comprehension	Teaching Method (1)	70.907	1	70.907	19.064	0.000
	WMC (2)	159.735	2	79.867	21.473	0.000
	(1) × (2)	67.791	2	33.895	9.113	0.000
	Error	334.746	90			
	Total	1446.000	96			
Application	Teaching Method (1)	115.458	1	115.458	14.457	0.000
	WMC (2)	322.061	2	161.031	20.164	0.000
	(1) × (2)	83.294	2	41.647	5.215	0.007
	Error	718.753	90			
	Total	3932.000	96			
Total Score	Teaching Method (1)	762.590	1	762.590	18.639	0.000
	WMC (2)	2174.611	2	1087.305	26.576	0.000
	(1) × (2)	488.304	2	244.152	5.968	0.004
	Error	3682.139	90			
	Total	28369.000	96			

The findings presented in Table (4.1) show that:

1- There is a statistically significant main effect of teaching method [F (1,96) = 18.639, p= 0.000, F (1,96) = 8.958, p= 0.004, F (1,96) = 19.064, p= 0.000,

F (1,96) = 14.457, p= 0.000] on the total score of VAT and its levels (knowledge, comprehension and application) respectively.

2- There is a statistically significant main effect of WMC [F (2,96) =26.576, p= 0.000, F (2,96) =18.192, p= 0.000, F (2,96) =21.473, p= 0.000, F (2,96) =20.164, p= 0.000] on the total score of VAT and its levels (knowledge, comprehension and application) respectively.

3- There is a statistically significant interaction effect [F (2,96) = 5.968, p= 0.004, F (2,96) = 9.113, p= 0.000, F (2,96) =5.215, p= 0.007] on the total score of VAT and its levels (comprehension and application) respectively except the knowledge level.

Therefore, the null hypothesis was rejected partially and the alternative one was accepted as follows:

There were statistically significant differences at p < 0.05 between means of scores obtained by the study groups in the post application of vocabulary achievement test as it concerns the total score and the knowledge, comprehension, and application levels according to : a) difference in teaching method and b) differences in pupils' WMC.

In addition, statistically significant differences at p< 0.05 were found between means of scores obtained by the study groups in the post application of vocabulary achievement test as it concerns the total score and the comprehension, and application levels according to the dual interaction between teaching method and pupils' WMC.

On the other hand, there were no statistically significant differences at p < 0.05 between means of scores obtained by the study groups in the post application of vocabulary achievement test as it concerns the knowledge level according to the dual interaction between teaching method and pupils' WMC.

The previous results of two-way ANOVA indicated that there were significant differences between means of scores obtained by the study groups in the total score of post VAT and its three levels. In order to know the direction of these differences according to teaching method, the researcher used t-test for independent groups. The results are illustrated in the following table:

Table 4.2 : T-Test for Independent Groups to Compare the Means of Scores

on VAT and its Levels According to Teaching Method

Variable	Group	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Knowledge	Experimental	7.2553	3.29339	1.530	94	0.129
	Control	6.2041	3.43378			
Comprehension	Experimental	3.6383	2.75386	2.484	94	0.015
	Control	2.4286	1.96850			
Application	Experimental	6.1277	3.79139	2.065	94	0.042
	Control	4.6939	2.98052			
Total Score	Experimental	16.9787	8.89672	2.217	94	0.029
	Control	13.3265	7.18328			

The findings presented in Table (4.2) show that:

- There is no statistically significant difference [t (94)=1.530, p= 0.129] between the mean scores of the experimental group [M=7.2553, SD=3.29339] and the mean scores of the control group [M= 6.2041, SD =3.43378] in knowledge level.

- There is a statistically significant difference [t (94)= 2.484, p = 0.015] between the mean scores of the experimental group [M=3.6383, SD=2.75386] and the mean scores of the control group [M= 2.4286,

SD= 1.96850] in comprehension level in favor of the experimental group .

- There is a statistically significant difference [t (94)= 2.065, p = 0.042] between the mean scores of the experimental group [M=6.1277, SD=3.79139] and the mean scores of the control group [M= 4.6939, SD= 2.98052] in application level in favor of the experimental group.

- There is a statistically significant difference [t (94)= 2.217, p= 0.029] between the mean scores of the experimental group [M=16.9787, SD=8.89672] and the mean scores of the control group [M=13.3265, SD=7.18328] in total score in favor of the experimental group.

The previous results showed that the mean scores of both groups (experimental and control) in knowledge level do not have significant differences. This means that the traditional method suited this level because it was basically based on memorizing vocabulary and recalling them as they were without showing the skills of understanding and processing vocabulary meaning. Thus, any method can achieve acceptable results in this level as it is just remembering vocabulary that has been taught to pupils.

Furthermore, the results revealed that the experimental group outperformed the control group in comprehension level. This indicated that keyword method helped pupils to understand vocabulary meaning and not just dealing with rote learning. Also, the link between the previously learned vocabulary with the new one in keyword method facilitated the interpretation of educational situations and therefore understanding them. This was revealed through the pupils' skills in rewriting sentences by using the vocabulary they learned and determining which vocabulary they should use and replace to give meaningful sentences.

As for application level, the results also showed that the experimental group was better than the control one. The pupils in the experimental group demonstrated their ability to apply the learned vocabulary in new and concrete separate situations as well as in communicative ones appropriately. This means that keyword method showed a positive effect at this level in VAT.

Furthermore, the experimental group showed a clear superiority over the control one in the total score of VAT. This means that keyword method has enhanced English vocabulary achievement more than traditional method. This is a determinism result of the experimental group superiority in the three previous levels of VAT.

The above results are in line with the study of Abdel-Majeed (2000), Sagarra & Alba (2006), Yaakub (2007), Fritz et al. (2007), Ismail (2008) and Abdul Razak (2008) as all stated that keyword method enhanced vocabulary achievement. On the other hand, the study of Dmitsak (2007) did not agree with these results. It showed that keyword method did not enhance vocabulary achievement. This disagreement could be understandable because of the different educational context and learner's proficiency level of English language.

The previous discussion is concerning the teaching method of both groups: experimental and control. In order to know the direction of the differences between means of scores obtained by the subjects of the study according to WMC (table, 4.3), the researcher used Tukey's multiple comparison test. The results are illustrated in table (4.4).

Table 4.3 : The Means and Standard Deviations of the Three Groups on Post VAT

Capacity	Mean	Std. Deviation
HWMC	20.5938	9.78432
MWMC	13.6563	5.05843
LWMC	11.0938	6.03944

Table 4.4 : Tukey's Multiple Comparisons Test of WMC on Post VAT and its Levels

Variable	Capacity	Mean Difference	Std. Error	Sig.
Knowledge	High - Medium	1.7188*	0.72226	0.050
	High - Low	3.9063*	0.72226	0.000
	Medium - Low	2.1875*	0.72226	0.009
Comprehension	High - Medium	2.2500*	0.48214	0.000
	High - Low	2.0937*	0.48214	0.000
	Medium - Low	-0.1563	0.48214	0.944
Application	High - Medium	2.8750*	0.70649	0.000
	High - Low	3.5313*	0.70649	0.000
	Medium - Low	0.6563	0.70649	0.624
Total Score	High - Medium	6.9375*	1.59908	0.000
	High - Low	9.5000*	1.59908	0.000
	Medium - Low	2.5625	1.59908	0.250

*. The mean difference is significant at $p \leq 0.05$ level

It can be seen from table (4.4) that:

1. There is a statistically significant difference at $p \leq 0.05$ level between the mean scores of pupils with HWMC [M=20.5938, SD=9.78432] and the mean scores of pupils with MWMC [M=13.6563, SD=5.05843] in the three levels of VAT [knowledge (MD = 1.7188, p = 0.050), comprehension

(MD =2.2500, p = 0.000) and application (MD =2.8750, p = 0.000)] and the total score (MD =6.9375, p = 0.000) in favor of pupils with HWMC.

2. There is a statistically significant difference at p < 0.05 level between the mean scores of pupils with HWMC [M=20.5938, SD=9.78432] and the mean scores of pupils with LWMC [M=11.0938, SD=6.03944] in the three levels of VAT [knowledge (MD = 3.9063, p = 0.000), comprehension (MD =2.0937, p = 0.000) and application (MD =3.5313, p = 0.000)] and in the total score (MD =9.5000, p = 0.000) in favor of pupils with HWMC.

3. There is a statistically significant difference at p < 0.05 level between the mean scores of pupils with MWMC [M=13.6563, SD=5.05843] and the mean scores of pupils with LWMC [M=11.0938, SD=6.03944] in the knowledge level (MD=2.1875, p = 0.009) in favor of pupils with MWMC. However, there is no statistically significant difference between the mean scores of pupils with MWMC [M=13.6563, SD=5.05843] and the mean scores of pupils with LWMC [M=11.0938, SD=6.03944] in levels of comprehension and application and the total score of VAT.

The above results indicated that pupils with HWMC outperformed pupils with MWMC and LWMC in the total score of VAT and its three levels. This means that pupils with HWMC benefit more from their WMC in maintaining and processing vocabulary in an effective way. This helps pupils in recalling later on and using the learned vocabulary appropriately which leads to high performance in the VAT. The benefit from WMC is a result of organizing the learned material in a way that lessen the burden on WM.

Also, the previous results indicated that pupils with MWMC outperformed pupils with LWMC in the knowledge level only. On the other hand, their means were equal in the other two levels and the total score of VAT. This revealed that pupils with MWMC might not have a high proficiency in

dealing with their WMC. They did not get benefit from it by good organizing of learning process which lead to the equality of their performance with pupils with LWMC.

The previous results of WMC effect are in line with the study of Badawi (2002), Torres (2003), Mendonça (2003), Weissheimer (2007), Finardi (2009) and Andersson (2010) as they stated that WMC was related to enhance learning English as a foreign language in general and vocabulary acquisition in particular.

Furthermore, two-way ANOVA results reported that there was a statistically significant interaction effect between the methods of vocabulary teaching and the different levels of WMC in the total score of vocabulary achievement test and its two levels: comprehension and application. The following figures (4.1, 4.2 and 4.3) show this interaction:
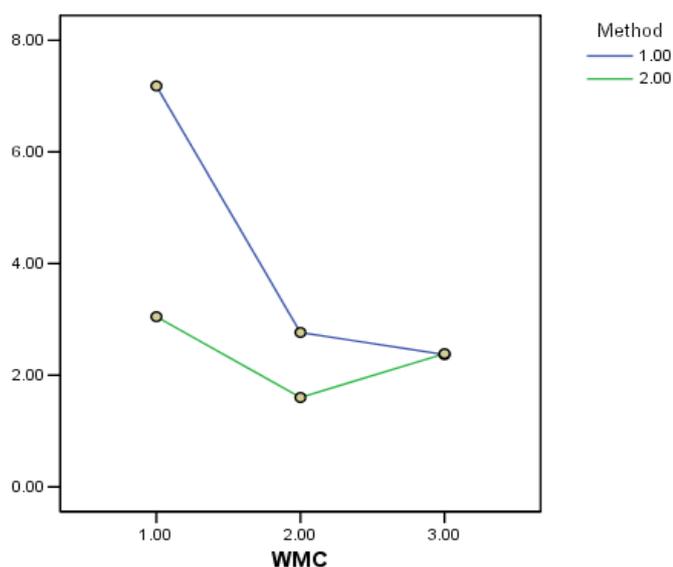
Figure 4.1 : The Interaction between Teaching Method and WMC
(Comprehension Level)
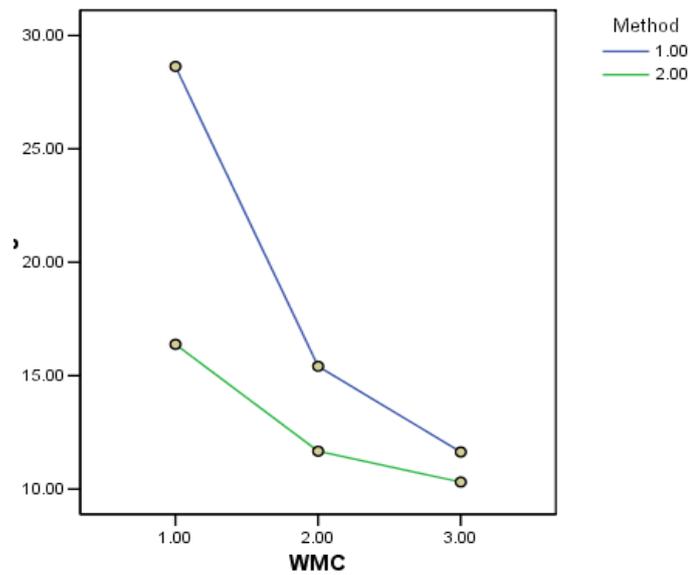
Figure 4.2 : The Interaction between Teaching Method and WMC
(Application Level)
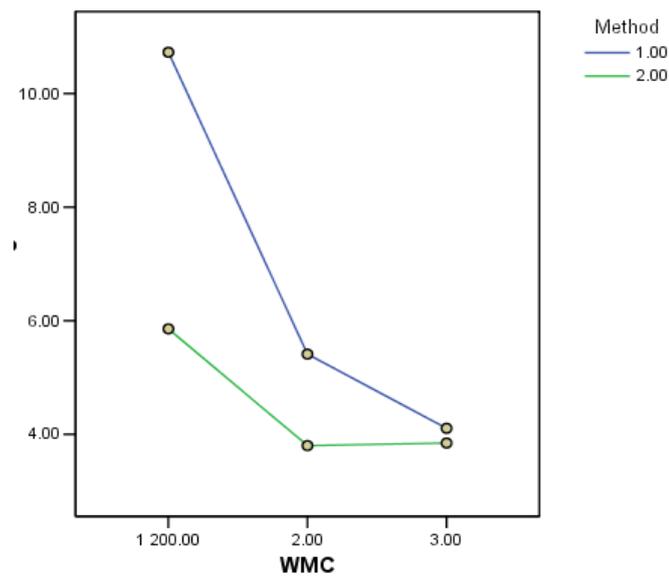
Figure 4.3 : The Interaction between Teaching Method and WMC
(Total Score)

As can be seen in all figures (4.1, 4.2 and 4.3) that the interactions were ordinal in which the lines of one independent variable (teaching method) never cross at any line of the other independent variable (WMC). In the

comprehension level (Figure 4.1), keyword method resulted in a higher score than the traditional method for pupils with HWMC and MWMC. However, for pupils with LWMC the scores in keyword method and traditional method were not different.

For the application level (Figure 4.2) and the total score (Figure 4.3), keyword method has lead pupils with HWMC to higher scores than the traditional method. On the other hand, although keyword method resulted in higher scores than the traditional method for pupils with MWMC and LWMC, but the difference was much less than found for pupils with HWMC.

The above results of interaction between the vocabulary teaching method and WMC in vocabulary achievement did not agree with the study results of Dmitsak (2007) which revealed that there was no interaction between the encoding conditions (repeated definition, keyword and example) and WMC in learning psychological terms. This disagreement could be due to the different educational context and grade level.

Therefore, to measure the effect size of teaching method, WMC and the dual interaction between them on vocabulary achievement, the researcher used partial η^2. Partial $\eta^2 = 0.01$ represents a small effect size, partial $\eta^2 = 0.06$ represents a medium effect size and partial $\eta^2 = 0.14$ represents a large effect size (Cohen, 1988 cited in Dmitsak 2007). The results of partial η^2 are illustrated in the following table :

Table 4.5 : The Values of (η^2) and the Effect Size on

Vocabulary Achievement Test

Variable	Partial η^2	The Effect Size
The Teaching Method (1)	0.17	Large
WMC (2)	0.37	Large
The Interaction (1) × (2)	0.12	Medium

As can be seen in table 4.5, the effect size of using keyword method on enhancing vocabulary achievement is large ($\eta^2 = 0.17$). This means that 17% from the total variance is due to using keyword method. Also, it can be seen that the effect size of WMC level on enhancing vocabulary achievement is large ($\eta^2 = 0.37$). This means that 37% from the total variance is due to the effect of pupil's WMC level. Finally, the effect size of the interaction on enhancing vocabulary achievement is medium ($\eta^2 = 0.12$). This means that 12% from the total variance is due to the interaction between the teaching method and WMC level.

2- Results Related to the Second Hypothesis

The second hypothesis states that: " *There are no statistically significant differences between means of scores obtained by the study groups in the delayed application of vocabulary achievement test and its levels according to teaching method, pupils' WMC or the dual interaction between them."*

In order to investigate this hypothesis, after two months from the post administration of the VAT, the researcher applied the same test again to measure vocabulary retention of both the control group and the experimental one.

To test this hypothesis, two-way ANOVA was conducted and the results of are illustrated in the following table:

Table 4.6 : Two-way ANOVA Results of Teaching Method and WMC on Delayed VAT

Variable	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Knowledge	Teaching Method (1)	110.184	1	110.184	12.926	0.001
	WMC (2)	200.336	2	100.168	11.751	0.000
	(1) × (2)	35.880	2	17.940	2.105	0.128
	Error	767.186	90			
	Total	5477.000	96			
Comprehension	Teaching Method (1)	104.745	1	104.745	20.547	0.000
	WMC (2)	224.314	2	112.157	22.001	0.000
	(1) × (2)	67.640	2	33.820	6.634	0.002
	Error	458.795	90			
	Total	1655.000	96			
Application	Teaching Method (1)	199.538	1	199.538	27.633	0.000
	WMC (2)	337.231	2	168.616	23.351	0.000
	(1) × (2)	117.714	2	58.857	8.151	0.001
	Error	649.886	90			
	Total	3484.000	96			
Total Score	Teaching Method (1)	1195.490	1	1195.490	29.383	0.000
	WMC (2)	2255.767	2	1127.883	27.721	0.000
	(1) × (2)	561.725	2	280.862	6.903	0.002
	Error	3661.819	90			
	Total	27609.000	96			

The findings presented in Table (4.6) show that:

1- There is a statistically significant main effect of teaching method [F (1,96) = 29.383, p= 0.000, F (1,96) = 12.926, p= 0.001, F (1,96) = 20.547, p= 0.000, F (1,96) = 27.633, p= 0.000] on the total score of VAT and its three levels (knowledge, comprehension and application) respectively.

1- There is a statistically significant main effect of WMC [F (2,96) = 27.721, p= 0.000, F (2,96) = 11.751, p= 0.000, F (2,96) = 22.001, p= 0.000, F (2,96) = 23.351, p= 0.000] on the total score of VAT and its three levels (knowledge, comprehension and application) respectively.

3- There is a significant effect of interaction between methods of vocabulary teaching and different levels of WMC [F (2,96) = 6.903, p= 0.002, F (2,96) = 6.634, p= 0.002, F (2,96) = 8.151, p= 0.001] on the total score of VAT and its two levels (comprehension and application) respectively except the knowledge level.

Therefore, the null hypothesis was rejected partially and the alternative one was accepted as follows:

There were statistically significant differences at p < 0.05 between means of scores obtained by the study groups in the delayed application of vocabulary achievement test as it concerns the total score and the knowledge and comprehension levels according to: a) difference in teaching method, b) differences in pupils' WMC.

Furthermore, statistically significant differences at p< 0.05 were found between means of scores obtained by the study groups in the delayed application of vocabulary achievement test as it concerns the total score and the comprehension and application levels according to the dual interaction between teaching method and pupils' WMC.

On the other hand, there were no statistically significant differences at p < 0.05 between means of scores obtained by the study groups in the delayed application of vocabulary achievement test as it concerns the knowledge level according to the dual interaction between teaching method and pupils' WMC.

The previous results of two-way ANOVA indicated that there were significant differences between means of scores obtained by the study groups in the total score of delayed VAT and its three levels. In order to know the direction of the differences according to teaching method, the researcher used t-test for independent groups. The results are illustrated in the following table:

Table 4.7 : T-Test for Independent Groups to Compare the Means of Scores on

Delayed VAT and its Levels According to Teaching Method

Variable	Group	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Knowledge	Experimental	7.5745	3.54318	2.328	94	0.022
	Control	6.0204	2.98252			
Comprehension	Experimental	3.7872	3.23659	2.621	94	0.010
	Control	2.3061	2.22864			
Application	Experimental	6.0000	3.82782	3.103	94	0.003
	Control	3.8776	2.81834			
Total Score	Experimental	17.2979	9.38527	3.060	94	0.003
	Control	12.2041	6.76381			

The findings presented in Table (4.7) show that:

- There is a statistically significant difference [t (94)= 2.328, p= 0.022] between the mean scores of the experimental group [M = 7.5745, SD= 3.54318] and the mean scores of the control group [M= 6.0204, SD = 2.98252] in knowledge level in favor of the experimental group.

- There is a statistically significant difference [t (94)= 2.621, p = 0.010] between the mean scores of the experimental group [M= 3.7872, SD= 3.23659] and the mean scores of the control group [M= 2.3061, SD= 2.22864] in comprehension level in favor of the experimental group .

- There is a statistically significant difference [t (94)= 3.103, p = 0.003] between the mean scores of the experimental group [M= 6.0000, SD= 3.82782] and the mean scores of the control group [M= 3.8776, SD= 2.81834] in application level in favor of the experimental group.

- There is a statistically significant difference [t (94)= 3.060, p= 0.003] between the mean scores of the experimental group [M= 17.2979, SD= 9.38527] and the mean scores of the control group [M= 12.2041, SD= 6.76381] in total score in favor of the experimental group.

The previous results showed that the mean scores of experimental group in the knowledge level was bigger than the mean scores of control group in the same level. This means that keyword method helped in supporting vocabulary retention concerning vocabulary form and meaning after a period of time. This was revealed when pupils in experimental group remembered vocabulary through the given pictures and sentences accurately.

Furthermore, the results revealed that experimental group outperformed the control group in comprehension level. This indicated that keyword method helped pupils to retain the vocabulary meaning after two months from studying it. They showed their ability of understanding and interpretation of the sentences given to them in the VAT .

As for application level, the results also showed that the experimental group was better than the control one in the delayed VAT. The pupils in the experimental group demonstrated their ability to use the learned vocabulary in

new and concrete separate situations as well as in communicative ones appropriately after a period of time. This means that the keyword showed a positive effect on this level concerning vocabulary retention.

Furthermore, the experimental group also showed a clear superiority over the control one in the total score of VAT. This means that the keyword method has enhanced English vocabulary retention more than the traditional method. It helped pupils to retain and use the vocabulary they learnt after two months from studying it.

The above results are in line with the study of Abdel-Majeed (2000), Hauptmann (2004), and Abdul Razak (2008) as all stated that keyword method enhanced vocabulary retention. While Gaul (2004), Brazley (2008) and Ismail (2008) do not agree with the results of the previous studies. They showed that the keyword method did not enhance vocabulary retention. This disagreement could be understandable because of the educational context difference, the learner's proficiency level of English language, the teaching aids and the different periods of the interval between the post administration and the delayed one of vocabulary test.

The previous discussion dealt with teaching method of both groups: experimental and control. In order to know the direction of the differences between means of scores obtained by the subjects of the study according to WMC (table, 4.8), the researcher used Tukey's multiple comparison test. The results are illustrated in table (4.9).

Table 4.8 : The Means and Standard Deviations of the Three Groups on Delayed VAT

Capacity	Mean	Std. Deviation
HWMC	20.2500	10.17270
MWMC	12.4688	6.12759
LWMC	11.3750	5.67820

Table 4.9 : Tukey's Multiple Comparisons Test of WMC on Delayed VAT and its Levels

Variable	Capacity	Mean Difference	Std. Error	Sig.
Knowledge	High - Medium	2.2188[*]	0.72991	0.009
	High - Low	2.9375[*]	0.72991	0.000
	Medium - Low	0.7188	0.72991	0.588
Comprehension	High - Medium	2.6562[*]	0.56445	0.000
	High - Low	2.5937[*]	0.56445	0.000
	Medium - Low	-0.0625	0.56445	0.993
Application	High - Medium	2.8125[*]	0.67180	0.000
	High - Low	3.3437[*]	0.67180	0.000
	Medium - Low	0.5313	0.67180	0.710
Total Score	High - Medium	7.7813[*]	1.59466	0.000
	High - Low	8.8750[*]	1.59466	0.000
	Medium - Low	1.0937	1.59466	0.772

*. The mean difference is significant at $p < 0.05$ level

It can be seen from the table (4.9) that:

1. There is a statistically significant difference at $p < 0.05$ level between the mean scores of pupils with HWMC [M= 20.2500, SD= 10.17270] and the mean scores of pupils with MWMC [M= 12.4688, SD= 6.12759] in the three levels of delayed VAT [knowledge (MD = 2.2188, p = 0.009),

comprehension (MD = 2.6562, p = 0.000) and application (MD = 2.8125, p = 0.000)] and in the total score (MD = 7.7813, p = 0.000) in favor of pupils with HWMC.

2. There is a statistically significant difference at $p < 0.05$ level between the mean scores of pupils with HWMC [M= 20.2500, SD= 10.17270] and the mean scores of pupils with LWMC [M= 11.3750, SD= 5.67820] in the three levels of delayed VAT [knowledge (MD = 2.9375, p = 0.000), comprehension (MD = 2.5937, p = 0.000) and application (MD = 3.3437, p = 0.000)] and in the total score of delayed VAT (MD = 8.8750, p = 0.000) in favor of pupils with HWMC.

3. There is no statistically significant difference between the mean scores of pupils with MWMC [M= 12.4688, SD= 6.12759] and the mean scores of pupils with LWMC [M= 11.3750, SD= 5.67820] in the three levels of delayed VAT [knowledge (MD = 0.7188, p = 0.588), comprehension (MD = -0.0625, p = 0.993) and application (MD = 0.5313, p = 0.710)] and in the total score of delayed VAT (MD = 1.0937, p = 0.772).

The above results indicated that pupils with HWMC outperformed pupils with MWMC and LWMC in the total score of delayed VAT and its three levels. This means that pupils with HWMC stored vocabulary in LTM effectively which helps them in recalling and using the learned vocabulary appropriately later on. Also, these results showed that WMC had a crucial role in vocabulary retention and this was due to pupils 'attention that was directed to the vocabulary while being taught to them by the teacher.

Also, results indicated that the means of scores of pupils with MWMC and LWMC were equal in the total score of delayed VAT and its three levels. This revealed that pupils with MWMC and LWMC did not have a high proficiency

in dealing with their limited WMC. They both did not store vocabulary in LTM effectively. This affects their retention of vocabulary later on.

The results of WMC effect are in line with the study of Badawi (2002) and Mendonça (2003) as they stated that WMC was related to the enhancement of long term retention of learned material in general and vocabulary in particular.

Furthermore, two-way ANOVA results reported that there was a statistically significant interaction between the methods of vocabulary teaching and the different levels of WMC in the total score of delayed VAT and its two levels: comprehension and application. The following figures(4.4, 4.5 and 4.6) show this interaction:
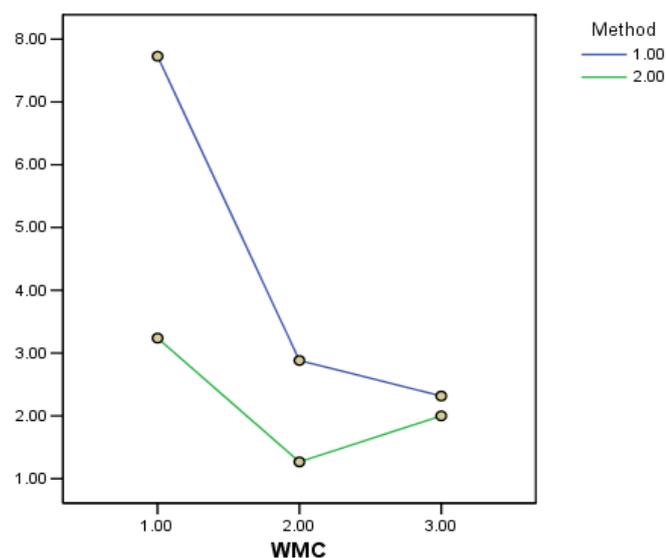
Figure 4.4 : The Interaction between Teaching Method and WMC
(Comprehension Level)
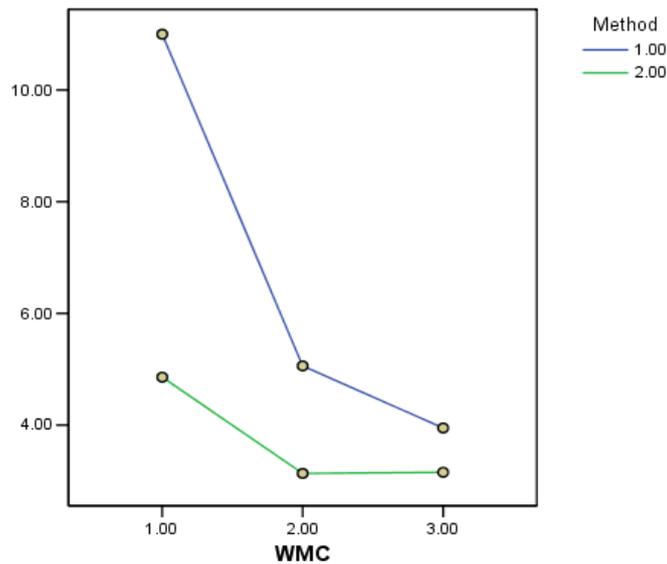
Figure 4.5 : The Interaction between Teaching Method and WMC
(Application Level)
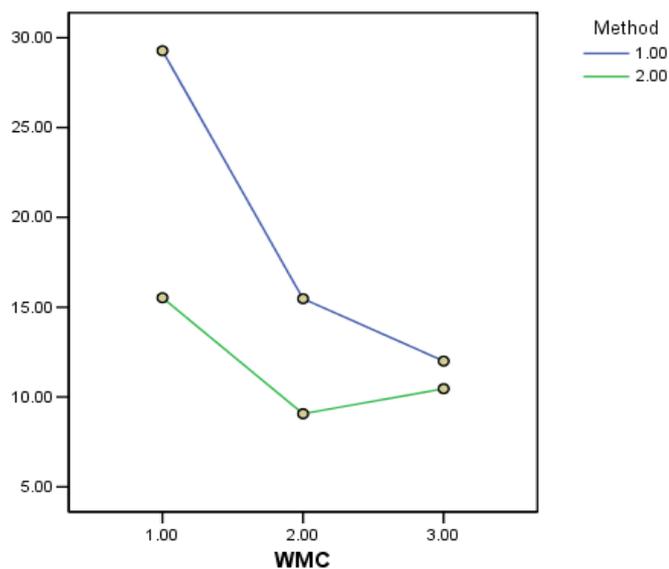
Figure 4.6 : The Interaction between Teaching Method and WMC
(Total Score)

As can be seen in all figures (4.4, 4.5 and 4.6) that the interactions were ordinal in which the lines of one independent variable (teaching method) never cross at any line of the other independent variable (WMC). In the comprehension and application level (Figure 4.4 and 4.5), for pupils with HWMC and MWMC, keyword method resulted in higher scores than the

keyword method, however for pupils with LWMC, although keyword method resulted in higher scores than the traditional method, that difference was much less than found for pupils with HWMC and MWMC.

Also, in the total score (Figure 4.6), for traditional method conditions, pupils with HWMC, MWMC and LWMC received different scores. It was noticed that pupils with HWMC and LWMC were better than pupils with MWMC. On the other hand, for keyword method conditions, pupils with HWMC received higher scores than pupils with MWMC and LWMC.

Therefore, to measure the effect size of the teaching method, WMC and the interaction between them on vocabulary achievement, the researcher used partial η^2. Partial $\eta^2 = 0.01$ represents a small effect size, partial $\eta^2 = 0.06$ represents a medium effect size and partial $\eta^2 = 0.14$ represents a large effect size (Cohen, 1988 cited in Dmitsak 2007). The results of partial η^2 are illustrated in the following table :

Table 4.10 : The Values of (η^2) and the Effect Size on Delayed VAT

Variable	Partial η^2	The Effect Size
The Teaching Method (1)	0.25	Large
WMC (2)	0.38	Large
The Interaction (1) × (2)	0.13	Medium

As can be seen in table 4.10, the effect size of using keyword method on enhancing vocabulary retention is large ($\eta^2 = 0.25$). This means that 25 % from the total variance is due to using keyword method. Also, it can be seen

123

that the effect size of WMC level on enhancing vocabulary achievement is large ($\eta^2 = 0.38$). This means that 38% from the total variance is due to the effect of pupil's WMC level. Finally, the effect size of the interaction on enhancing vocabulary achievement is medium ($\eta^2 = 0.13$). This means that 13% from the total variance is due to the interaction between the teaching method and WMC level.

Conclusion

The results related to both hypotheses of the study showed that keyword method had a positive effect on enhancing vocabulary achievement and retention. The experimental group outperformed the control group in the whole score of the post and delayed achievement test and also in the two levels comprehension and application. Furthermore, WMC affected both achievement and retention. Pupils with HWMC were better than pupils with MWMC and LWMC. Finally, the interaction between teaching method and WMC also had an effect on the vocabulary achievement and retention. Pupils with LWMC benefitted more from keyword method and received higher scores than pupils with LWMC who were taught vocabulary through traditional method. This means that if the teacher uses an effective strategy like keyword method in teaching vocabulary, pupils will improve their vocabulary achievement and retention regardless of their WMC.

Chapter Five

Summary, Conclusions and Recommendations

Chapter Five

Summary, Conclusions and Recommendation

Introduction

This chapter summarizes the study, provides conclusions, offers some recommendations and finally suggests some topics for further research.

Summary of the Study

The study aimed at answering the following major question :

what was the effectiveness of keyword-based instruction in enhancing English vocabulary achievement and retention of 3rd intermediate grade pupils with different WMCs ?

This question was divided into the following sub-questions :

1. How effective is the keyword-based instruction in enhancing English vocabulary achievement of 3rd intermediate grade pupils with different WMCs ?

2. How effective is the keyword-based instruction in enhancing English vocabulary retention of 3rd intermediate grade pupils with different WMCs ?

3. What was the effect of interaction between teaching method (keyword method-traditional method) and WMC (high-medium-low) on vocabulary achievement of 3rd intermediate grade pupils?

4. What was the effect of interaction between teaching method (keyword method-traditional method) and WMC (high-medium-low) on vocabulary retention of 3rd intermediate grade pupils?

To answer the study questions, the following hypotheses were formulated:

1. There were no statistically significant differences between means of scores obtained by the study groups in the post application of vocabulary achievement test and its levels according to teaching method, pupils' WMC or the dual interaction between them.

2. There were no statistically significant differences between means of scores obtained by the study groups in the delayed application of vocabulary achievement test and its levels according to teaching method, pupils' WMC or the dual interaction between them.

The following instruments were used to achieve the objectives of the study:

1. A vocabulary achievement test designed by the researcher and used as a pre - post test to measure vocabulary achievement and used as a delayed test to measure vocabulary retention .

2. Working memory tasks test by (Shalaby, 2010) used to measure working memory capacity.

The study resulted in the following:

1. There were statistically significant differences at $p < 0.05$ between means of scores obtained by the study groups in the post application of vocabulary achievement test as it concerns the total score and the knowledge, comprehension, and application levels according to : a) difference in teaching method and b) differences in pupils' WMC.

In addition, statistically significant differences at $p < 0.05$ were found between means of scores obtained by the study groups in the post application of vocabulary achievement test as it concerns the total score and the

comprehension and application levels according to the dual interaction between teaching method and pupils' WMC.

On the other hand, there were no statistically significant differences at $p < 0.05$ between means of scores obtained by the study groups in the post application of vocabulary achievement test as it concerns the knowledge level according to the dual interaction between teaching method and pupils' WMC.

2. There were statistically significant differences at $p < 0.05$ between means of scores obtained by the study groups in the delayed application of vocabulary achievement test as it concerns the total score and the knowledge and comprehension levels according to: a) difference in teaching method, b) differences in pupils' WMC.

Furthermore, statistically significant differences at $p < 0.05$ were found between means of scores obtained by the study groups in the delayed application of vocabulary achievement test as it concerns the total score and the comprehension and application levels according to the dual interaction between teaching method and pupils' WMC.

On the other hand, there were no statistically significant differences at $p < 0.05$ between means of scores obtained by the study groups in the delayed application of vocabulary achievement test as it concerns the knowledge level according to the dual interaction between teaching method and pupils' WMC.

Conclusions

With reference to results of the study, the following points were concluded:

1. The current study provided evidence to the effectiveness of using keyword method in enhancing vocabulary achievement.

2. This study provided evidence to the effectiveness of using keyword method in enhancing vocabulary retention.

3. Using interactive pictures in English vocabulary learning through keyword method facilitated vocabulary achievement and retention.

4. The study indicated that pupils with HWMC appeared to be better than their counterparts in both vocabulary achievement and retention.

5. Keyword method helped pupils in organizing new vocabulary and linking its form with its meaning in a way that made them to get benefit from their WMC and then perform well in VAT.

Recommendations

Based on the results and conclusions of this study, the following recommendations were offered:

1. Keyword method is recommended to be used as a framework for enhancing vocabulary achievement and retention with both elementary and intermediate school pupils.

2. Conducting the test of WMC at the beginning of the academic year in order to recognize the pupils' WMC and therefore identifying the appropriate teaching methods.

3. Curriculum designers of English language should be aware of incorporating interactive and exaggerated images in the English language textbook of beginners.

4. Using keyword method to teach English vocabulary for pupils with working memory disorders.

5. Teacher education programs should pay more attention to intentional vocabulary instruction such as keyword method.

Suggestions for Further Research

The following points are some suggestions for further research:

1. Investigating the effectiveness of keyword method in developing different English language skills.
2. Investigating the effects of keyword method on enhancing reading comprehension.
3. Investigating the effects of keyword-based instruction on the students' attitudes towards English as a foreign language.
4. Investigating the effectiveness of keyword method in enhancing English vocabulary acquisition in the light of cognitive styles.
5. Investigating the relationship between EFL learners' age and English proficiency level with their generation of keywords.

References

Foreign References

Abdel-Majeed, M. A. (2000). The Keyword Method: A Powerful Memory Aid to Vocabulary Learning in the EFL Classroom. *The E.R.C. Journal* No. 17, Pp 9-27.

Abdul-Razak, M. (2008). *The Effectiveness of Keyword Method in Acquisition of Arabic Vocabulary among Students of National Secondary Schools in Malaysia.* Unpublished MA Thesis, Islamic University, Malaysia.

Alfi, M. Y. (2004). An Applied Linguistics Approach to Improving the Memorization of the Holy Quran: Suggestions for Designing Practice Activities for Learning and Teaching. *Journal of King Saud University*, Vol. 16, No. 2, Pp. 1-32, Riyadh.

Al-Ghozify, N. M. (2008). *The Effect of Cognitive Vocabulary Learning Strategies on the Vocabulary Acquisition and Retention of Level One Students of the Department of English.* Unpublished MA Thesis, Sana'a University, Yemen. Retrieved on September 31, 2010. Available at:

http://www.yemen-nic.info/contents/studies/detail.php?ID=19112

Al-Hadlaq, M. S. (2003). *Retention of Words Learned Incidentally by Saudi EFL Learners Through Working on Vocabulary Learning Tasks Constructed to Activate Varying Depths of Processing*. Unpublished Ph.D. Thesis, Ball State University, Muncie, Indiana.

Ali, M. F. (2007). *Incorporating Self-Generated Mnemonics into Lexical Learning: Impact on EFL Adult Learners' Vocabulary Achievement, Retention and Metacognitive Awareness*. Available at: www.tcr.edu.sa/pdf/researchesen/faroq-en10.pdf

Al-Jarf, R. (2006). *Making Connections in Vocabulary Instruction*. Paper Presented at the 2nd , ClaSIC Conference. Singapore.

Al-Seghayer, K. (2001). The Effect of Multimedia Annotation Modes on L2 Vocabulary Acquisition: A Comparative Study. *Language Learning & Technology*, Vol. 5, No. 1, Pp. 202-232.

American Heritage ® Dictionary of the English Language. (2010). Fourth Edition. Retrieved on July 14 , 2010. Available at :

www.dictionary.reference.com/browse/vocabulary.

Andersson, U. (2010). The Contribution of Working Memory Capacity to Foreign Language Comprehension in Children. *Memory*, Vol. 18, No.4, Pp. 458 - 472 .

Ashman, F. & Conway , R. (1997). *An Introduction to Cognitive Education : Theory and Application.* New York, Routledge.

Baddeley, A. D. (2000). The Episodic Buffer: A New Component of Working Memory? *Trends in Cognitive Science*, Vol. 4, No.11, Pp. 417-423. shaved

_____ (2003). Working Memory: Looking Back and Looking Forward. *Nature Reviews: Neuroscience*, Vol. 4, Pp. 829-839.

Barrett, L. F. ; Tugade, M. M. & Engle, R. W. (2004). Individual Differences in Working Memory Capacity and Dual-Process Theories of the Mind. *Psychological Bulletin*, Vol. 130, No. 4, Pp. 553–573

Bastanfar, A. & Hashemi, T. (2010). Vocabulary Learning Strategies and ELT Materials. *International Education Studies*, Vol. 3, No. 3, Pp.158-166.

Bielsker, S. ; Napoli, L ; Sandino, M. and Waishwell, L. (2001). *Effects of Direct Teaching Using Creative Memorization Strategies to Improve Math Achievement.* Unpublished MA Thesis, Saint Xavier University, Chicago, Illinois .

Brazley, M. S. (2008). *The Effects of Mnemonic Keyword and Rote Methods of Vocabulary Instruction on the Immediate and Delayed Word Recall and Application by High School Students with Learning Disabilities.* Unpublished Master Dissertation, University of Memphis, USA.

Bromley, K. D. (2002). *Stretching Students' Vocabulary*. New York: Scholastic Professional Books. P.7

Butler, T. W. (2007). *Vocabulary and Comprehension with Students in Primary Grades: A Comparison of Instructional Strategies.* Unpublished Doctoral Dissertation, University of Florida, United States.

Campos, A., Gonzales, M.A., & Amor, A. (2003). Limitations of the mnemonic keyword-method. *The Journal of General Psychology,* Vol.130, No. 4, Pp. 399-414.

Casey, P. J. (2003). Teaching How to Solve That "Man's Father is My Father's Son": Adapting Teaching Method to Working Memory. *Australian Journal Of Psychology*, Vol.55 , No. 3, Pp. 140 - 147.

Chang, Y. (2006). *Visual Organizers as Scaffolds in Teaching English as a Foreign Language*. (ERIC Document Reproduction Service No.ED494210) .

Chen, K. Y. (2009). *An Explanatory Mixed Methods Study of EFL College Students' Vocabulary Knowledge, Syntactic Knowledge and*

Reading Comprehension. Unpublished Ph.D. Thesis, Texas A&M University-Kingsville.

Chen, P. C. (2008). *The Effects of Utilizing Different Types of Printed Dictionaries on Vocabulary Acquisition, Retention, and Reading Comprehension.* Unpublished Ph.D. Thesis, La Sierra University, California, United States.

Chung, W. M. (2008). *Attention Control, Working Memory, and Second Language Experience in Second Language Performance.* Unpublished Doctoral Dissertation, Concordia University, Montreal, Quebec, Canada

Conway, A. A. ; Kane, M. J. ; Bunting, M. F. ; Hamprick, D. Z. ; Wilhilm, O. & Engle R. W. (2005). *Working Memory Span Tasks: A Methodological Review and User's Guide.* Psychonomic Bulletin & Review, Vol. 12, No5, Pp.769-786

Corbett, L. D. (2009). *The Effect of Vocabulary Instruction on the Reading Achievement of at Risk Third-Grade Students.* Unpublished Ph.D. Thesis, Capella University, Minnesota, USA.

Cowan, N. (2005). *Working Memory Capacity*. New York, NY: Psychology Press.

D'Alesio, R.; Scalia, M. & Zabel, R. (2007). *Improve Vocabulary Acquisition with Multisensory Instruction*. (ERIC Document Reproduction Service No. ED496974).

DeWitt, K. C. (2010). *Keyword Mnemonic Strategy: A Study of SAT Vocabulary in High School English.* Unpublished Ph.D. Thesis, George Mason University, Fairfax, VA.

Dmitsak, L. (2007).*Working Memory Span Differences in the use of Encoding Strategies.* Unpublished MA Thesis , Marietta College, Taiwan. Available at:

http://etd.ohiolink.edu/view.cgi?acc_num=marietta1181838212

D'Onofrio, G. (2009). *The Role of Vocabulary Notebooks in the Retention and Use of New Words.* Unpublished Master. Dissertation, Concordia University, Montreal, Quebec, Canada.

El-Seteha, E. H. (2008). *Working Memory Capacity for Children Who Have Reading Comprehension Disorder*. Tanta University, Egypt.

Engle, R. W. (2001). What is working-memory capacity?. In H. L. Roediger III & J. S. Nairne (Eds.), *The Nature of Remembering: Essays in Honor of Robert G. Crowder* (pp. 297-314). Washington, DC: American Psychological Association.

Eyraud, K. ; Giles, G. ; Koenig, S. and Stoller, F. L. (2000). The Word Wall Approach : Promoting L2 Vocabulary Learning. *English Teaching Forum.* Vol. 38, No.3 .

Farlex, (2009). *The Online Free Dictionary*. Available at :

 http://www.thefreedictionary.com/retention

Finardi, K. R. (2009). *Working Memory Capacity and the Acquisition of a Syntactic Structure in L2 Speech.* Unpublished Ph.D. Thesis, the Federal University of Santa Catarina. Brazil .

Folse, K. S. (2008). Six Vocabulary Activities for the English Language Classroom. *English Teaching Forum*, Vol.46, No.3, p. 12.

Fraser, S. (2006). The Nature and Role of specialized Vocabulary: What do ESP Teachers and Learners Need to Know? *JALT*. Available at: http://jalt.org/calendar/archive.php

Fritz, C. O., Morris, P. E., Acton, M., Voelkel, A. R. and Etkind, R. (2007). Comparing and Combining Retrieval Practice and the Keyword Mnemonic for Foreign Vocabulary Learning. *Applied Cognitive Psychology,* Vol. 21, No. 4, Pp. 499–526.

Gairns, R. & Redman, S. (1991). *Working with Words. A Guide to Teaching and Learning Vocabulary*. Cambridge: Cambridge University Press. Pp. 64-65.

Gathercole, S. E. (1999). Cognitive Approaches to the Development of Short-Term Memory. *Trends in Cognitive Sciences*, Vol. 3, No. 11, Pp. 410-419.

Gaudio, V. (2003). *Improving Reading Skills in ESL Students through an Intensive Vocabulary Building Program*. Unpublished MA Thesis, Saint Xavier University, USA.

Gaul, Tracey. A. (2004). *Do Sixth-Grade Students Have Greater Immediate Recall of Vocabulary Definitions if They Select Their Own Terms While Employing the Mnemonic Keyword Method?* Unpublished Ph.D. Thesis, Widener University, Pennsylvania, USA.

Ghazal, L. (2007). Learning Vocabulary in EFL Contexts Through Vocabulary Learning Strategies. *Novitas-ROYAL*, Vol. 1, No.2, Pp.84-91.Retrieved on August 27,2010. Available at:

www.novitasroyal.org/1_2.htm

Glowacki, D., Lanucha, C. & Pietrus, D. (2001). *Improving Vocabulary Acquisition through Direct and Indirect Teaching*. (ERIC Document Reproduction Service No. ED453542).

Gu, Y. & Johnson, R. K. (1996). Vocabulary Learning Strategies and Language Learning Outcomes. *Language Learning ,* Vol. 46, No. 4, Pp. 643-679.

Guey, C.; Cheng, Y. & Huang, L. (n.d.). *Effect of Keyword Method on Memory of Word Groups for Chinese Learners of English.* Unpublished MA Thesis. Retrieved on November 1, 2010. From: http://www.hiceducation.org/edu_proceedings/Chingchung%20Guy

Hauptmann, J. (2004). *The Effect of the Integrated Keyword Method on Vocabulary Retention and Motivation.* Unpublished Ph.D. Thesis, University of Leicester, UK .

Hermann, F. (2003). *Differential Effects of Reading and Memorization of Paired Associates on Vocabulary Acquisition in Adult Learners of English as a Second Language.* The Electronic Journal for English as a Second Language. Vol. 7, No. 1. Retrieved on September 31, 2010. Available at:

http://www.tesl-ej.org/wordpress/issues/volume7/ej25/ej25a1/.

Higbee, K. L. (2001). *Your Memory : How it works & How to Improve It*.2nd Ed. New York : Marlowe & Company.

Hornby. A.S. (2000). *Oxford Advanced Learner's Dictionary of Current English.* Sixth Edition. Oxford University Press.

Huck, K. R. (2006). *Vocabulary Instruction in Four Middle School Content Classrooms: A Case Study.* Unpublished MA Thesis, Bowling Green State University, Ohio, United States.

Hulstijn, J. H. (1997). Mnemonic methods in foreign-language vocabulary learning: Theoretical considerations and pedagogical implications . In J. Coady and T. Huckin (Eds.), *Second Language Vocabulary Acquisition.* Cambridge: Cambridge University Press. Pp. 203-224.

Hulstijn, J. & Laufer, B. (2001). Some Empirical Evidence for the Involvement Load Hypothesis in Vocabulary Acquisition. *Language Learning*, Vol.51, No.3, Pp. 539-558.

Hunt, A. & Beglar, D. (2005). A Framework for Developing EFL Reading Vocabulary. *Reading in a Foreign Language*, Vol. 17, No. 1, Pp. 23-59.

IKAH. (2007). *The Correlation Between Students' Achievement in Vocabulary and Reading Ability.* Unpublished Case Study, Syarif Hidayatullah State Islamic University, Jakarta.

Ismail, O. A. (2008). *The Effectiveness of Using the Keyword and the Context Methods in Developing Vocabulary Achievement and Retention of EFL Preparatory Stage Pupils (A Comparative Study).* Unpublished MA Thesis, Mansoura University, Egypt.

Issariya, T. (2004). *The Effect of Vocabulary Learning Strategies Training on Thai University Students' Word Retention in the Second Language Classroom.* Unpublished Ph.D. Thesis, University of Essex, UK. Abstract.

Just, M. A. & Carpenter, P. A. (1992). Capacity Theory of Comprehension Individual Differences in Working Memory. *Psychological Review* Vol.99, No.1, pp.122-149.

Kaushanskaya, M. (2007). *Linguistic and Cognitive Mechanisms in Foreign Vocabulary Acquisition.* Unpublished Ph.D. Thesis, Northwestern University, Evanston, Illinois.

Kemps, E.; Rammelaere, D. S. & Desmet, T. (2000). The Development of Working Memory: Exploring the Complementarily of Two Models. *Journal of Experimental Child Psychology*, Vol. **77,** Pp. 89-109

Lin, C. -Y. (2008). *Learning German Vocabulary: An Investigation into Learners' Use of Vocabulary Learning Strategies*. Unpublished Ph.D. Thesis, University of Waterloo, Ontario, Canada.

Lin, S. (2002). *Modeling a Supplemental Course Web Site for EFL Vocabulary Acquisition.* Unpublished Ph.D. Thesis, University of Delaware, USA.

Luqta, R. I. (2007). *Working Memory Capacity, Cognitive Style (Verbal-Imager) and Speed of Perception and their Relationship with Mental Processes During Problem Solving Among Jordanian students.* Unpublished Ph.D. Thesis, University of Arabic Amman, Jordan.

Marzona, R. J. (2004). *Building Background Knowledge for Academic Achievement: Research on What Works in Schools.* Alexandria, VA: Association for Supervision and Curriculum Development.

Marefat, H. & Shirazi, M. A. (2003). The Impact of Teaching Direct Learning Strategies on the Retention of Vocabulary by EFL Learners. *The Reading Matrix*, Vol.3, No.2, Pp. 47- 62 .

Mastropieri, M.A. & Scruggs, T.E. (1998). *Enhancing School Success with Mnemonic Strategies*. Available at:

http://www.ldonline.org/article/5912

Mendonça, D.M.(2003). *Working Memory Capacity and the Retention of L2 Vocabulary*. Unpublished MA Thesis. Florianópolis: UFSC.

Merriam-Webster Online Dictionary.(2010).*Vocabulary*. Retrieved on July 9, 2010. Available at:

http://www.merriamwebster.com/dictionary/vocabulary.

Min, H.-T. (2008). EFL Vocabulary Acquisition and Retention: Reading Plus Vocabulary Enhancement Activities and Narrow Reading. *Language Learning*, Vol.58, No. 1 , Pp .73–115.

Min, H.T. & Hsu, W.S. (2008). The Impact of Supplemental Reading on Vocabulary Acquisition and Retention with EFL Learners in Taiwan. *Humanities & Social Sciences*, Vol. 53, No.1

Mizera, G. J. (2006). *Working Memory and L2 Oral Fluency.* Unpublished Ph.D. Thesis, University of Pittsburgh, Pennsylvania State, USA.

Mohammed, E. F. (2009). *The Effectiveness of TPRS in Vocabulary Acquisition and Retention of EFL Prep. Stage Students and their Attitude towards English Language.* Unpublished MA Thesis, Mansoura University, Egypt.

Molloy, P. J. (1997). *The Role of Individual Differences in Working Memory In Reading and Listening Comprehension in Intermediate Grade Students.* Unpublished Ph.D. Thesis, University of British Columbia, Vancouver, Canada.

Nadarajan, S. (2007). *Measuring Academic Vocabulary Size and Depth in the Writing Classroom: Does it Really Matter?* Unpublished Doctoral Dissertation, University of Arizona, Arizona, United States.

Nagy, W. E. & Scott, J. A. (2000). Vocabulary Processes. *Handbook of Reading Research*, Vol. 3, Pp. 269-284.

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

Nation, P. & Newton, J. (1997).Teaching vocabulary. In J. Coady and T. Huckin (Eds.), *Second Language Vocabulary Acquisition.* Cambridge: Cambridge University Press. pp.238-254.

Numminen, H. (2002). *Working Memory in Adults with Intellectual Disability*. Famr, Research Publications. Helsinki: Kehitysvammaliitto.

Papadopoulou, E. (2007). *The Impact of Vocabulary Instruction on the Vocabulary Knowledge and Writing Performance of Third Grade students.* Unpublished Ph.D. Thesis, University of Maryland, United States.

Perhan, Z. (2008). *Enhancing English Vocabulary Knowledge Through Instruction on Ukrainian-English Cognates in a Ukrainian Undergraduate Program.* Unpublished MA Thesis, University of Toronto, Ontario, Canada.

Pikulski, J.J. & Templeton, S. (2004). *Teaching and Developing Vocabulary: Key to Long-Term Reading Success.* USA: Houghton Mifflin Company.

Pittman, D. T. (2008). *A Comparison of Explicit and Implicit Vocabulary Instruction on the Acquisition of English Vocabulary and Reading Comprehension in English Language Learners in Grades Four through Twelve*. Unpublished Ph.D. Thesis, University of Mississippi, United States.

Richmond, A. S.; Cummings, R. & Klapp, M. (2008). Transfer of the Method of Loci, Pegword, and Keyword Mnemonics in the Eighth Grade Classroom. *Researcher*, Vol. 21, No.2 , Pp. 1-13.

Robson, J. M. (2009). *A Study Examining the Impact of Vocabulary Instruction on the Vocabulary Growth and Acquisition of Adults Enrolled in a Community College Developmental Reading Course.* Unpublished Ph.D. Thesis, Florida Atlantic University, Boca Raton, Florida.

Rodriguez, M. S. (1999). *Efficacy of Rote, Context, Keyword, and Context/keyword Learning Strategies on Retention of Vocabulary in EFL Classrooms.* Unpublished Ph.D. Thesis, Texas A&M University, US.

Sagarra, N. & Alba, M. (2006). The Key Is in the Keyword: L2 Vocabulary Learning Methods With Beginning Learners of Spanish. *The Modern Language Journal*, Vol. 90 , No. 2, Pp. 228–243.

Saputra , G.D. (2007). *The Influence of Contextual Teaching Learning to the Students Vocabulary Achievement.* Unpublished MA Thesis, University of As-Syafi'iyah. East Jakarta.

Sedita, J. (2005). Effective Vocabulary Instruction. *Insights on Learning Disabilities*, Vol. 2, No.1, Pp. 33-45.

Schmitt, N. (2008). *Teaching Vocabulary*. White Plains, NY: Pearson Education. Available at:

http://www.longmanhomeusa.com/content/FINAL-HIGH%20RES-Schmitt-Vocabulary%20Monograph%20.pdf

Shanshan, G. & Tongshun, W. (2007). Study on the Relationship Between Working Memory and EFL Listening Comprehension. *CELEA Journal*, Vol. 30, No. 6, Pp. 46-56.

Sildus, T. I. (2006). The Effect of a Student Video Project on Vocabulary Retention of First-Year Secondary School German Students. *Foreign Language Annals*, Vol. 39, No. 1, Pp.54–70.

Soriano, M.F. & Bajo, M. T. (2007). Working Memory Resources and Interference in Directed Forgetting. *Psychological*, Vol.28, No.1, pp. 63-85.

Souleyman, H. M. (2009). *Implicit and Explicit Vocabulary Acquisition with a Computer-Assisted Hypertext Reading Task: Comprehension and Retention.* Unpublished Ph.D. Thesis, University of Arizona, USA.

Sternberg, R. J. (2008). *Cognitive psychology*. Belmont: Thomas Wadsworth.

Stromfors, C. M. (2005). *The Impact of Modality and Working Memory Capacity on Achievement in Multimedia Environment.* Unpublished Doctoral Dissertation, Arizona State University, Arizona.

Takac, V. P. (2008). *Vocabulary Learning Strategies and Foreign Languages Acquisition.* UK : Multilingual Matters Ltd.

Thu, T. H. (2009). *Learning Strategies Used by Successful Language Learners.* (ERIC Document Reproduction Service No. ED507398).

Torres, A. C. (2003). *Working Memory Capacity and Reader's Performance on Main Idea Construction in L1 and L2.* Unpublished Doctoral Dissertation, Federal University of Santa Catrina, Florianópolis, Brazil.

Tuholski, S.W. ; Engle, R.W. & Baylis, G.C. (2001). Individual Differences in Working Memory Capacity and Enumeration. *Memory & Cognition,* Vol.29,No.3,Pp. 484-492. Available at:

http://mc.psychonomicjournals.org/ content/29/3/484.full.pdf+html

Unsworth, N. & Engle, R. W. (2005). Individual Differences in Working Memory Capacity and Learning: Evidence From the Serial Reaction Time Task. *Memory & Cognition*, Vol. 33, No. 2 , Pp. 213-220.

_____ (2008). Speed and Accuracy of Accessing Information in Working Memory: An Individual Differences Investigation of Focus Switching. *Journal of Experimental Psychology*, Vol. 34, No. 3, Pp. 616–630

Unsworth, N. ; Redick, T. S. ; Heitz, R. P. ; Broadway, J. M. & Engle, R. W. (2009). Complex Working Memory Span Tasks and Higher-Order Cognition: A Latent-Variable Analysis of the Relationship Between Processing and Storage. *Memory*, Vol. 17 , No.6 , Pp. 635-654.

Waring, R. & Takaki, M. (2003). At What Rate Do Learners Learn and Retain New Vocabulary from Reading a Graded Reader ? *Reading in a Foreign Language*, Vol. 15, No. 2, Pp. 132-163 .

Weissheimer, J. (2007). *Working Memory Capacity and The Development of L2 Speech Production – an Exploratory Study.* Unpublished Ph.D. Thesis, Federal University of Santa Catarina, Florianópolis , Brazil .

Wieland, L. D. (1990). *The Effects of Training and the Keyword Method on the Recall of an Unfamiliar Vocabulary.* Unpublished Ph.D. Thesis, University of Ottawa, Ontario.

Yaakub, M. B. (2007). Teaching Arabic as a Second Language: An Evaluation of Keyword Method Effectiveness. *Jurnal Teknologi*, Vol. 46 , Pp. 61-72.

Yek, S.M. (2006). *Memory Enhancing Vocabulary Learning Strategy Instruction.* Unpublished MA Thesis, Ming Chuan University, Taiwan.

Yoshii, M. & Flaitz, J. (2002). Second Language Incidental Vocabulary Retention: The Effect of Text and Picture Annotation Types. *CALICO Journal*, Vol. 20, No.1, Pp. 33-58.

Zhang, L. J. (2002). Metamorphological Awareness and EFL Students' Memory, Retention, and Retrieval of English Adjectival Lexicons. *Perceptual and Motor Skills*, Vol. 95, Pp. 934-944.

Zutaut, A. K. (2002). *Using Mnemonic Strategies in Fourth Grade Multiplication.* Unpublished MA Thesis , Johnson Bible College , USA. (ERIC Document Reproduction Service No. ED 469632).

Arabic References

أحمد ، عبدالمنعم (2005) : *علم النفس المعرفي* ، ط1 ، القاهرة : عالم الكتب .

الجلبي ، سوسن شاكر (2005) : *أساسيات بناء الاختبارات و المقاييس النفسية و التربوية* . دمشق: مؤسسة علاء الدين للطباعة .

الزغول ، رافع النصير و الزغول ، عادل عبدالرحيم (2003) : *علم النفس المعرفي* . ط 1، فلسطين: دار الشروق .

الزيات ، فتحي مصطفى (2006) : *الأسس المعرفية للتكوين العقلي و تجهيز المعلومات* . القاهرة : دار النشر للجامعات المصرية .

العتوم ، عدنان يوسف (2004) : *علم النفس المعرفي : النظرية و التطبيق* . ط 1 ، عمّان: دار المسيرة .

بدوي ، زينب عبد العليم (2002) : أثر سعة الذاكرة العاملة و نوع المعلومات في استراتيجيات التشفير و كفاءة التذكر طويل الأمد . *مجلة كلية التربية* ـ جامعة الزقازيق ، العدد 40 .

جمال ، منير حسن ، (2005) : الاختلاف في مستوى العمليات المعرفية (الانتباه و الذاكرة العاملة) بين المتميزين في الأداء التحصيلي الأكاديمي و المتميزين في السلوك الاجتماعي. *مجلة الدراسات المصرية* ، المجلد 15 ، العدد 49 ، ص ص 250 - 321 .

شلبي ، أمينة إبراهيم (2010) : القيمة التنبؤية للذاكرة العاملة بالذكاء والتحصيل لدى تلاميذ الحلقة الثانية من التعليم الأساسي . *المجلة المصرية للدراسات النفسية* ، المجلد 20 ، العدد 69 ، ص ص 1- 58 .

علام ، صلاح الدين محمود (2006) : *القياس و التقويم التربوي و النفسي* . القاهرة : دار الفكر العربي .

ملحم، سامي محمد (٢٠٠٥): *مناهج البحث في التربية وعلم النفس* . ط ٣، عمان: دار المسيرة.

يوسف، ماهر إسماعيل صبري و الرفاعي، محب محمود كامل (٢٠٠٥): *التقويم التربوي: أسسه و إجراءاته* . ط 4 ، الرياض : مكتبة الرشد .

Appendices

Appendix 1

Subjects' Mean Age

Subjects' Mean Age

No. of Pupil	Age	
	Year	Month
1	14	6
2	15	5
3	15	6
4	14	5
5	14	9
6	14	9
7	17	1
8	15	1
9	14	9
10	15	1
11	15	1
12	14	9
13	15	0
14	15	1
15	15	5
16	14	9
17	14	11
18	15	5
19	15	3
20	15	7
21	14	10
22	14	6
23	15	11
24	14	11
25	14	4
26	14	10
27	15	0
28	14	7
29	14	5
30	14	2
31	14	8

32	14	7
33	15	3
34	15	5
35	14	5
36	14	8
37	15	0
38	15	0
39	14	7
40	14	11
41	14	11
42	14	7
43	15	4
44	14	7
45	14	7
46	17	1
47	15	0
1	14	8
2	15	6
3	15	11
4	15	0
5	14	6
6	14	11
7	17	0
8	14	11
9	14	9
10	14	9
11	14	5
12	15	3
13	15	3
14	15	2
15	15	4
16	14	5
17	14	11
18	14	11
19	15	0
20	16	9
21	15	2
22	14	9
23	15	1
24	14	7
25	14	4

26	15	2
27	15	6
28	15	0
29	15	11
30	14	11
31	15	0
32	15	6
33	15	7
34	15	2
35	14	5
36	15	2
37	14	6
38	14	10
39	15	1
40	14	8
41	15	6
42	14	10
43	19	1
44	14	8
45	15	3
46	15	8
47	15	4
48	14	10
49	14	10
Mean	14.6146	5.6667
	15	6

Appendix 2

Vocabulary Achievement Test

(VAT)

Vocabulary Achievement Test

Name : ………………………………………………………

Class : ………………………………………………………

Instructions

Dear pupil :

1. You have six types of questions in this test.

2. Read every question carefully, then write your answer in the spaces allocated.

3. To answer the questions A, B and F follow the example in each question.

4. Do not start answering the questions until the teacher allows you to do so.

5. Try to answer all questions.

6. If you face difficulty in answering questions, you can ask your teacher for help.

7. Allotted time for the test is 45 minutes.

Question Number	Score
A	
B	
C	
D	
E	
F	
Total	

Total Score ⟹ 40

154
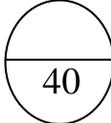
A) Write the correct word under the suitable picture as shown in the example :

senses - embarrassed - graph - museum - course - currency- smells - garbage

6

Example ⟶

smells

....

....

....

....

....

....
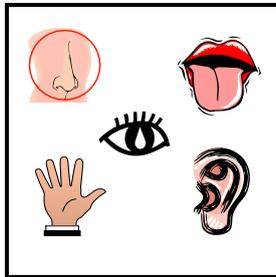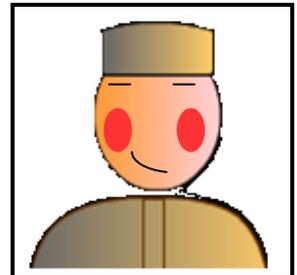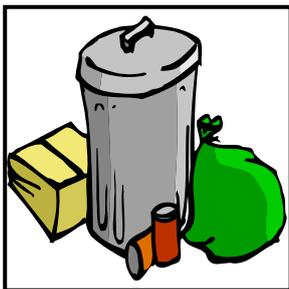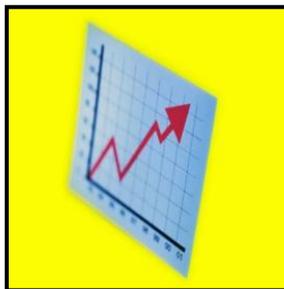
B) Complete the following sentences by using the suitable picture number as shown in the example:

(1)   **(2)**   **(3)**   **(4)**

(5)   **(6)**   **(7)**
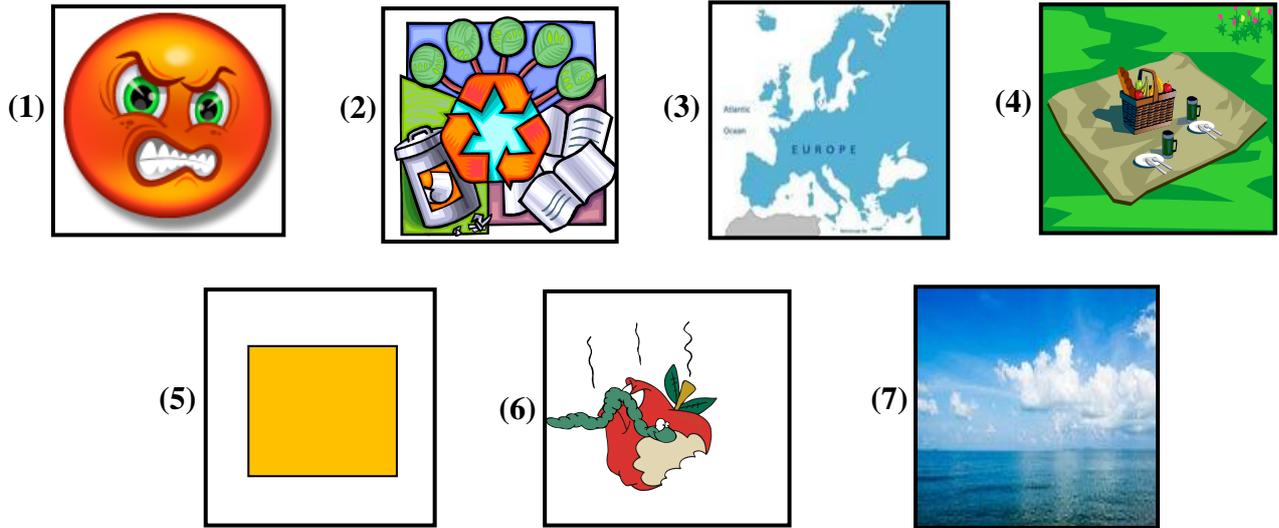
Example : I like to swim in the …**(7)**. .

1- People do not eat …… .

2- My brother has argued with his friend and he became very …… .

3- We should …… the used products to prevent pollution.

4- I want to visit …… .

5- My friend has a …... to Al-Shafa with her family.

6. I can draw a circle, triangle and ….. .

_____

C) Fill in the spaces with the right words :

Judaism - resources - French - pollution - sight - jealous - hearing - location - career

1- Our planet should be protected from ...…………… .

2- ...…………… is a religion .

3- He can not see well because he has poor ...…………… .

4- He is ...…………… because his friend is more successful than him .

5- We must conserve our natural ...…………… .

6- The ……………. of our house is good, it is not surrounded by houses.

7- She is deaf. She lost the sense of ....

D) Replace some words from the following sentences with the words in brackets to give the same meaning :
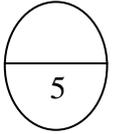
1- He likes to drink tea without sugar .   (bitter)

……………………………………………………….

2- She will go outside her country to study .   (abroad)

……………………………………………………….

3- You must have a job to get money .   (career)

……………………………………………………….

4- The writer should read and correct his writing before printing it.   (proofread)

………………………………………………………………………….

5- Use the knife carefully in order not to harm your hand .   (hurt)

…………………………………………………………………..

_____

E) Use the following words in meaningful sentences of your own :
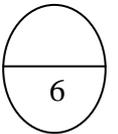
1- summarize

……………………………………………………………………

2- Franc

…………………………………………………………………….

3- littering

……………………………………………………………………

4- environment

…………………………………………………………………….

5- neglected

…………………………………………………………………….

6- Chinese

……………………………………………………………………

F) Choose the correct answer from the table down to complete the paragraph :

A Unique Holiday

Last summer , I and my family …..**A**…… to spend our holiday outside the Kingdom of Saudi Arabia. We …..**B**…… to go to Turkey . Actually, we did not speak the …..**C**……. language. That's why when we talk to a Turkish man, we felt …..**D**…….. and we had to search for a translator. We visited a lot of famous places there. One day, we went a …..**E**...... to the most beautiful garden in Turkey. That garden was full of flowers which we could …......**F**……. without cutting them. We also went to the restaurants to ……**G**….. the Turkish food. We ate …..**H**…… food that was full of sugar and the …..**I**…… one which was full of lemon. I noticed that there were some places where people were forbidden to …..**J**….. because they were public places and it's known that cigarettes are dangerous . We really enjoyed our time in Turkey and we decided to ……**K**…. another visiting to it next years.

Example ⟶

A :	
1. organized	②. decided
3. summarized	4. took

B :		**G** :	
1. planned	2. played	1. listen	2. touch
3. went	4. refused	3. read	4. taste
C :		**H** :	
1. Arabic	2. Chinese	1. rotten	2.sweet
3. Turkish	4. French	3. bitter	4. sour
D :		**I** :	
1. worried	2. comfortable	1. sour	2. bitter
3. happy	4. enjoyable	3. salty	4. bad
E :		**J** :	
1. course	2. picnic	1. smell	2. eat
3. trip	4. school	3. smoke	4. see
F :		**K** :	
1. eat	2. drink	1. conserve	2. reduce
3. smell	4. hear	3. review	4. arrange

☺ *Good Luck* ☺

Appendix 3

Jury Members

Jury Members

N	Name	Position	Location	Years of Experience
1	Dr. Ali Abdulsamea Qoura	Professor of Curricula and Methods of Teaching English	Taibah University Faculty of Education	30 years
2	Dr. Mahmoud Mohamed Mohasseb	Associate Professor of Curricula and Methods of Teaching English	Taif University Faculty of Education	26 years
3	Dr. Eid Abdelwahed Ali	Associate Professor of Curricula and Methods of Teaching English	Taif University Faculty of Education	23 years
4	Dr. Marwaan Arafat	Assistant Professor of Curricula and Methods of Teaching English	Taif University Faculty of Education	15 years
5	Hassina Al-Sufyani	Head Educational Supervisor	The Educational East Office in Taif	23 years
6	Fatma Al-Sukhairi	Head Educational Supervisor	The Educational West Office in Taif	15 years
7	Fatma Al-Najmi	Educational Supervisor	The Educational East Office in Taif	16 years
8	Safiah Al-Zahrani	EFL Teacher	22nd Intermediate School in Taif	18 years
9	Maha Al-Thobaiti	EFL Teacher	Al-Dar Al-Bidha School in Taif	16 years
10	Mervat Al-Roqi	EFL Teacher	37th Intermediate School in Taif	14 years
11	Weaam Qadah	EFL Teacher	1st Qur'anic Secondary School in Taif	12 years

Appendix 4

Formal Letters for Permission

خطاب تسهيل مهمة

سعادة مدير إدارة التربية و التعليم للبنات بالطائف   حفظه الله

تحية طيبة و بعد ،،

نفيد سعادتكم علماً بأن الباحثة : منى بنت عبدالله بن بخيت الزهراني و رقمها الجامعي : ٤٢٩٨٠٠٧٢ مسجلة لدرجة الماجستير بقسم المناهج و تقنيات التعليم ، تخصص مناهج و طرق تدريس اللغة الانجليزية ، و عنوان دراستها باللغة العربية : فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية والاحتفاظ بها لدى تلميذات المرحلة المتوسطة ذوات السعات المختلفة للذاكرة العاملة ، وعنوان دراستها باللغة الانجليزية :

The Effectiveness of Keyword-based Instruction in Enhancing English Vocabulary Achievement and Retention of Intermediate Stage Pupils with Different Working Memory Capacities .

نرجو من سعادتكم التكرم بتسهيل أمور الباحثة للقيام بالتجربة الاستطلاعية و تجربة البحث في ثلاث مدارس من مدارس المرحلة المتوسطة التابعة لإدارة التربية و التعليم للبنات بالطائف خلال العام الدراسي ١٤٣١-١٤٣٢ هـ .

شاكرين لكم حسن تعاونكم

عميد كلية التربية

الاسم : د.محمد بن أحمد الفعر الشريف

التوقيع :

بسم الله الرحمن الرحيم

المملكة العربية السعودية
وزارة التربية والتعليم
إدارة التربية والتعليم بمحافظة الطائف
«بنات»
وحدة التخطيط والتطوير التربوي

الرقم : ....
التاريخ : ١٩٠.....١٤٣١/١٠هـ

الجودة
المشفوعات : ....

واجبٌ دينيٌّ ،، و ،، مطلبٌ وطنيٌّ

إلى : مديرة المدرسة المتوسطة : (..)   وفقها الله ،،،

من : مدير عام التربية والتعليم بمحافظة الطائف «بنات»

بشـــأن : تسهيل مهمة الباحثة/منى بنت عبد الله بخيت المزهراني

السلام عليكم ورحمة الله و بركاته   و بعد :

نأمل منكم التكرم بتسهيل مهمة الباحثة/ منى بنت عبد الله بخيت المزهراني إحدى طالبات الدراسات العليا ؛ بمرحلة الماجستير/قسم المناهج وتقنيات التعليم تخصص مناهج وطرق تدريس اللغة الإنجليزية/كلية التربية/جامعة الطائف ؛ التي ترغب في تطبيق الأدوات الخاصة بالدراسة على عينة من طالبات المرحلة المتوسطة ، وهي بعنوان : «فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الإنجليزية والاحتفاظ بها لدى تلميذات المرحلة المتوسطة ذوات السعات المختلفة للذاكرة العاملة» .

علمًا أن أدوات الباحثة هي :

١. اختبار تحصيلي في مفردات اللغة الإنجليزية .

٢. مقياس سعة الذاكرة العاملة .

،، شاكرين ومقدرين تعاونكم ، واهتمامكم ،،

سالم بن هلال الزهراني

١٦٣

Appendix 5

Items Analysis of VAT

Items Analysis of VAT

Item No.	Freq. of Incorrect Ans.	Item Difficulty	Discrimination Index
1	16	0.53	0.75
2	3	0.10	0.39
3	18	0.60	0.59
4	11	0.37	0.69
5	16	0.53	0.37
6	22	0.73	0.66
7	11	0.37	0.48
8	11	0.37	0.35
9	9	0.30	0.43
10	21	0.70	0.50
11	12	0.40	0.48
12	12	0.40	0.61
13	28	0.93	0.1
14	18	0.60	0.46
15	23	0.80	0.24
16	20	0.67	0.48
17	29	0.97	0.29
18	20	0.67	0.37
19	26	0.84	0.22
20	28	0.93	0.34
21	28	0.93	-0.06
22	19	0.63	0.72
23	22	0.73	0.48
24	22	0.73	0.18
25	22	0.73	0.70

Item No.	Freq. of Incorrect Ans.	Item Difficulty	Discrimination Index
26	26	0.87	0.63
27	25	0.83	0.54
28	26	0.87	0.41
29	26	0.87	0.73
30	21	0.70	0.62
31	15	0.50	0.53
32	11	0.37	0.36
33	29	0.97	-0.21
34	22	0.73	0.29
35	19	0.63	0.53
36	11	0.37	0.25
37	13	0.43	0.45
38	20	0.67	0.48
39	21	0.70	-0.28
40	20	0.67	0.15

Appendix 6

Working Memory Tasks

Working Memory Tasks

إعـداد

د/ أمينة إبراهيم شلبي ـ أستاذ علم النفس التربوي المشارك ـ جامعة المنصورة ـ 2010

وصف المقياس :

يتكون المقياس من 9 مهام فرعية (3 لفظية ـ 3 بصرية مكانية ـ 3 لفظية عددية) و هي كالتالي :

المهمة الأولى : لفظية

الكلمات المتشابهة في القافيـة (Identifying similar words in rhyme)

مهمة لفظية الغرض منها قياس قدرة المفحوص ات علي التعرف على الكلمات المتشابهة في القافية ، و تتكون من ست بنود متدرجة في الصعوبة كل بند يحتوي على مجموعة من الكلمات المتشابهة في القافية. يحتوي البند الأول على كلمتين و تزداد الكلمات تدريجيًا إلى أن تصل إلى خمس كلمات في البند السادس .

المهمة الثانية : لفظية

التصنيف القائم على المعنى (Semantic Categorization)

وهى مهمة لفظية الغرض منها قياس قدرة المفحوص ات على التخزين والتجهيز اللفظي من خلال استدعاء الكلمات خلال فئات .

المهمة الثالثة : لفظية

استرجاع قصة (Story Recall)

وهى مهمة لفظية الغرض منها قياس قدرة المفحوص ات على التذكر والفهم القرائي من خلال الإجابة عن مجموعة من الأسئلة استماعهم لسلسلة من الجمل المترابطة التي تدور حول فكرة واحدة .

المهمة الرابعة : بصرية مكانية

التعرف على الشكل المختلف (Identifying a different shape)

مهمة بصرية مكانية الغرض منها قياس قدرة المفحوصات علي التعرف على الشكل المختلف و تتكون من أربع بطاقات متدرجة في الصعوبة كل بطاقة تحتوي على مجموعة من الصور ذات العلاقة و صورة واحدة مختلفة .

المهمة الخامسة : بصرية مكانية

التنظيم المكاني (Spatial Organization)

مهمة بصرية مكانية ، وتقيس قدرة المفحوصات على تذكر التنظيم المكاني لمجموعة من الرموز المعروضة داخل أشكال بترتيب معين .

المهمة السادسة : بصرية مكانية

التعرف على الأشكال مكانيًا (Recognizing shapes spatially)

مهمة بصرية مكانية وضعت لتقيس قدرة المفحوصات على تذكر أسماء و أماكن الأشكال المعروضة على البطاقات و تتكون من أربعة بطاقات متدرجة في الصعوبة ، تحتوي على مجموعة من الصور و على التلميذة أن يضع اسم الشكل في المكان المناسب على ورقة الإجابة .

المهمة السابعة : مهمة عددية

التعرف على الرقم المختلف (Identifying different numbers)

مهمة عددية وضعت لتقيس القدرة على تمييز الرقم المختلف من بين مجموعة من الأرقام من خلال استنتاج العلاقة بين مجموعة الأرقام المعروضة حيث تجمع كل مجموعة من الأرقام علاقة مختلفة عن المجموعة الأخرى و على التلميذة اكتشاف القاعدة التي تربط الأرقام مع بعضها وبالتالي اكتشاف الرقم المختلف الذي لا يخضع لهذه القاعدة ، و تتكون من خمسة بنود متدرجة في الصعوبة .

المهمة الثامنة : مهمة عددية

تتابع الأرقام المسموعة (Auditory Digit Sequence)

مهمة لفظية عددية ، الغرض منها اختبار قدرة المفحوصات على تذكر وتجهيز المعلومات الكمية .

المهمة التاسعة : مهمة عددية

الموضوع والرقم (Identifying Topic and Number)

مهمة لفظية عددية وضعت لتقيس قدرة المفحوصات على تذكر أرقام كلمات كما تم عرضها عليهم .

Appendix 7
Teacher's Guide

The Contents of the Teacher's Guide

Introduction

This handbook includes : 1. a brief summary about how teach English vocabulary by using keyword-based instruction for, 2. guidelines for EFL teacher to be followed when teaching by using keyword method, 3. the vocabulary of the units 1 - 7 except unit 4 from The Pupils' Book, the English book of 3rd intermediate stage ,1st term, and 4. the teaching procedures to teach the vocabulary of the six units. Each lesson of the vocabulary needs two periods except the lessons of unit 1 (one period) and unit 6 (three periods).

A Brief Summary of Keyword-based Instruction

Keyword method is a way of facilitating the link between the form of the new vocabulary and its meaning (Hulstijn 1997 & Nation 2001). Wieland (1990, p 7) mentions that " the keyword method consists of a tow-step process. In the first step, a perceptual link is formed between a foreign word and a native language word (keyword or mediator) which resemble the foreign word. In order to form this link, the learner either derives, or is provided with a native language word, some portion of which is orthographically and/or acoustically to a portion of the foreign word. In the second step, a semantic link is formed between the meaning of the keyword and the translation equivalent of the foreign word. This link can be formed by creating an interactive mental image."

Nation (2001) also states that the keyword method involves two steps for learning vocabulary. The first step is to think of a first language word (the keyword) which sounds like the beginning or all of the unknown word from the foreign language. The second step is to think of a visual image in which the meaning of the unknown word and the meaning of the known word is combined. Campos, Gonzales, & Amor (2003) call the first step verbal and the second step visual. Furthermore Hulstijn (1997) mentions that the

keywords can be chosen from the foreign language vocabulary with which the learner is already familiar.

<u>Guidelines for the Teacher</u>

There are important characteristics of keyword method in order to be successful. These characteristics must be clear in the mind of the teacher and pupils, they are (as Higbee 2001 & Hauptmann 2004 indicated) :

1- Phonetic similarity

As mentioned in the keyword definition that the keyword should be phonetically similar (not necessarily identical) to the target vocabulary.

2- Uniqueness

The association between the keyword and the target vocabulary should be unique in order to avoid the interference with other associations.

3- Exaggeration

As mentioned in the visualization- one of the basic principles of effective mnemonics- that bizarreness is an important factor to make it more effective. Thus, to do this bizarreness there should be an exaggeration in the image which represents the association between the keyword and the target vocabulary.

4- Sensory nature

Smells, sounds, tasting, movements …etc. should be included in the visual image wherever possible.

5- Interactivity and Simplicity

The connection between the two objects should be the prime of the image. Also, the simpler the connection, the better.

6- Creativity

Being creative involves the learner much more in the association and increases depth of processing and this lead to good retention.

7- Involvement

Memory is basically linked with conscious experience. The more the learner involve in the experience, the better he/she will remember it. This is can be found more in the learner-generated keywords rather than the teacher-generated keywords.

8- Use of one keyword for different target vocabulary

Circumstantial evidence that is made by Hauptmann (2004) suggests that it is not the isolated keyword but the image that causes vocabulary retention. It therefore seems logical to assume that one keyword can be used for different target vocabulary.

9- Simplified Keywords

A keyword can be embedded in a phrase, a film/book title, a name …etc. in the target language the learner can identify. It is not the keyword itself that aids memory but the imagination it triggers. As an example of that is when presenting the target vocabulary **easy**, the phrase **take it easy** is suggested.

10- Using a substitute concrete vocabulary

It is easy to visualize the concrete vocabulary like apple, car and pen, but it is difficult to visualize the abstract one like happiness, peace and justice. The procedures for using imagery to help remember abstract terms is the same for concrete terms except in adding a step using substitute concrete vocabulary to represent the abstract target vocabulary. One way of doing this is to use objects that symbolize the abstract term: for **justice**, one might picture the a judge; for **happiness**, a smiling face. A second way of substituting a concrete vocabulary for an abstract one is to use objects names sound like the abstract vocabulary: happy nest for **happiness**; celery for **salary**.

References

1- Campos, A., Gonzales, M.A., & Amor, A. (2003). Limitations of the mnemonic keyword-method. **The Journal of General Psychology**, Vol.130, No. 4, Pp. 399-414.

2- Hauptmann, J. (2004) . The Effect of the Integrated Keyword Method on Vocabulary Retention and Motivation. **Unpublished Ph.D. Thesis**, University of Leicester, UK .

3- Higbee, K. L. (2001). **Your Memory : How it works & How to Improve It**.2nd Ed. New York : Marlowe & Company.

4- Hulstijn, J. H. (1997). Mnemonic methods in foreign-language vocabulary learning: Theoretical considerations and pedagogical implications . In J. Coady and T. Huckin (Eds.), **Second Language Vocabulary Acquisition**. Cambridge: Cambridge University Press. Pp. 203-224.

5- Nation, I. S. P. (2001). **Learning vocabulary in another language**. Cambridge: Cambridge University Press.

6- Wieland, L. D. (1990). The Effects of Training and the Keyword Method on the Recall of an Unfamiliar Vocabulary. **Unpublished Ph.D. Thesis**, University of Ottawa, Ontario.

The Vocabulary of Units (1-7)

Units	Nouns	Verbs	Adjectives	Adverbs
Unit 1	plan graph topic	organize summarize proofread review	--------------	--------------
Unit 2	trip museum career future picnic course holiday walk	arrange take	old	abroad
Unit 3	Turkish Christianity French sterling Chinese Europe Franc Judaism Euro location population religion currency	--------------	north south	--------------

Units	Nouns	Verbs	Adjectives	Adverbs
Unit 5	energy garbage dumping product sea resources pollution environment	recycle reduce smoke conserve litter	-------------	-------------
Unit 6	senses sight smell taste touch hearing	-----------------	sour smooth hard quiet bitter rough loud soft sweet rotten fresh round noisy bright square salty	-------------
Unit 7	-------------	-------------	neglected embarrassed supported safe angry jealous comfortable worried hurt pleasant unpleasant	-------------

Vocabulary List and Keywords

Vocabulary	keyword
plan (n)	Eman
graph (n)	Miss. Paragraph
topic (n)	Sonic
organize (v)	H.W
summarize (v)	Miss. Eyes
proofread (v)	Prof. Fareed
review (v)	Mr. Q

Eman is Sitting on the **plan**.

Eman

plan

Miss. Paragraph
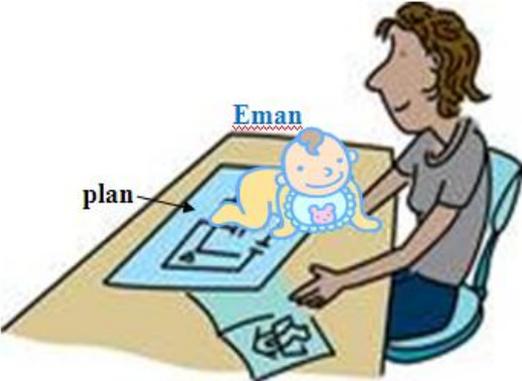
Look at my picture. I will ask you about it. If you know the answer, I will give you a
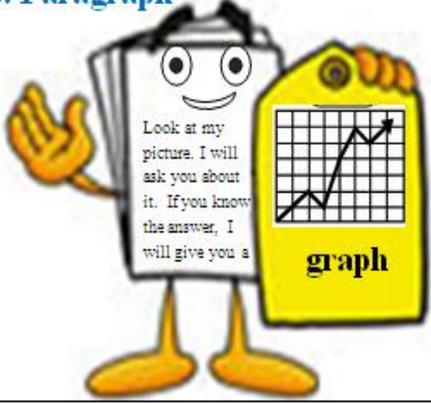
graph

Miss. Paragraph shows us a **graph**.

Vocabulary	Keyword	Vocabulary	Keyword
Plan	**Eman**	**graph**	**Miss. Paragraph**

I will do it.		Miss. Eyes Papers	
Sonic has a **topic** in his mind.		Miss. Eyes tries to **summarize** all papers.	
Vocabulary **topic**	Keyword **Sonic**	Vocabulary **summerize**	Keyword **Miss. Eyes**

Prof. Fareed		Mr. Q	
Prof. Fareed likes to **proofread** his writing.		Mr. Q starts to **review** the papers.	
Vocabulary **proofread**	Keyword **Prof. Fareed**	Vocabulary **review**	Keyword **Mr. Q**

179

Teaching Procedures

Objectives:

1. Pronounce the new vocabulary correctly after listening to the modal pronunciation.
2. Deduce the acoustic/auditory similarity between the two vocabulary (**organize and summarize**).
3. Recognize the new vocabulary through given pictures & sentences correctly.
4. Use vocabulary in meaningful sentences appropriately.

Teaching Materials:

- ❖ Pictures
- ❖ Multimedia
- ❖ Cassette

Presentation:

A. First Stage:
- Write the words on the bored and pronounce them.
- Ask pupils to pronounce the words correctly in groups and individually.
- Explain the words meanings through pictures, examples, definition or translation.

B. Second Stage:
- Write the keyword beside each word and pronounce it.
- Ask pupils to pronounce the keywords and notice the

acoustic similarity between the words and their keywords.

C. Third Stage:
- Present the visual pictures through multimedia.
- Explain the link between the form of each word and its meaning through pictures.
- Describe the relationship between the words and their keywords which is represented in the pictures.

Evaluation:

1. Correctly, pronounce the following vocabulary aloud:
   (**plan - graph - topic - organize - summarize - proofread - review**).
2. What is the acoustic/auditory similarity between the two vocabulary (**organize and summarize**) ?
3. Do questions A and B in the worksheet .
4. Do question C in the worksheet .

Homework:

- Write a keyword for the word (organize) and draw an interactive picture to link between them.
- Complete answering the questions that are not answered in the class.

Unit: (1)

Learning Tools

A) Choose the right answer:

1- This story became shorter because I .... it.
 a- read   b- deleted
 (c) summarized   d- copied

2- " Arrangement of how something is to be done beforehand"
is a ....
 (a) plan   b- review
 c- definition   d- summary

3- "To review" means to ....
 a- give the main points of a story or paragraph.
 b- think of how to do something before starting
 c- arrange things in a particular order.
 (d) go over your work to correct mistakes.

4- "To proofread" means to read ....
 a- and summarize the important points
 b- ideas and put them in order
 (c) and mark errors to be corrected .
 d- silently to answer questions

5- This a picture a ....
 a- flower   (b) graph
 c- topic   d- paragraph

6- The .... of the story is beautiful.
 (a) topic   b- dress
 c- book   d- pen

7- The boy in the picture is .... the cubes.
 a- reading   b- cooking
 (c) organizing   d- writing

B) Fill in the spaces with the following vocabulary :

| proofread - topic - plan - review - organize - summarize |

1- This lesson has an interesting topic .
2- You have to make a plan to enjoy your holiday.
3- "Giving the main points of a story" means to summarize it.
4- "To arrange something" means to organize it.
5- You need to proofread what you wrote before print it.

C) Use the following vocabulary in meaningful sentences of your own:

1- plan
Answers will vary
2- graph
Answers will vary
3- proofread
Answers will vary

Unit (2) Making Plans

Lesson (2) Vocabulary

Vocabulary List and Keywords

Vocabulary	keyword
trip (n)	Mrs. Lip
museum (n)	music
career (n)	Jarir
future (n)	teacher
picnic (n)	clinic
course (n)	Mr. Horse
holiday (n)	H.W
arrange (v)	orange
take (v)	cake
walk (v)	talk
abroad (adv)	Miss. Board
old (adj)	H.W
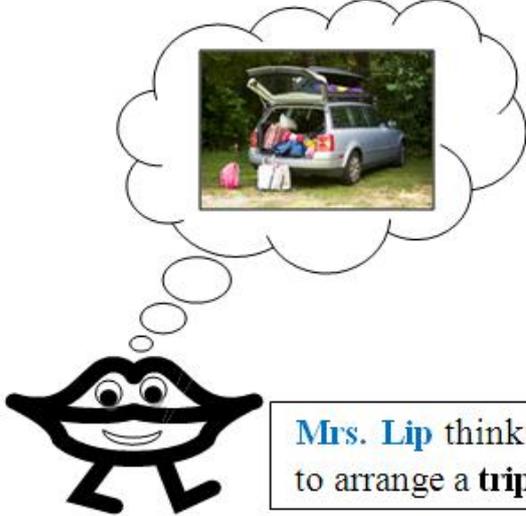
Mrs. Lip thinks to arrange a **trip**.	He looks at the **music** in the **museum**.

Vocabulary **trip**	Keyword **Mrs. Lip**	Vocabulary **museum**	Keyword **music**
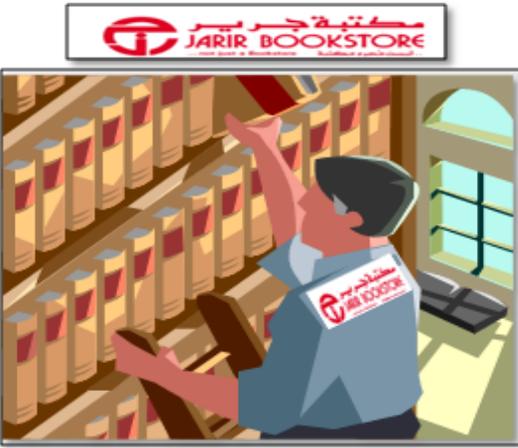
He has a **career** in **Jarir**.	Hind wishes to be a **teacher** in the **future**.

Vocabulary **career**	Keyword **Jarir**	Vocabulary **future**	Keyword **teacher**

They have a **picnic** in the **clinic**.	Mr. Horse thinks to take a **course**.

Vocabulary **picnic**	Keyword **clinic**	Vocabulary **course**	Keyword **Mr. Horse**

He **arranges** the **oranges** .	The hand wants to **take** the **cake**.

Vocabulary **arrange**	Keyword **orange**	Vocabulary **take**	Keyword **cake**

My name is Ali. What is your name? They **walk** and **talk**.	**Miss. Board** **Miss. Board** will go **abroad**.

Vocabulary **walk**	Keyword **talk**	Vocabulary **abroad**	Keyword **Miss. Board**

Teaching Procedures

<u>Objectives:</u>

1. Pronounce the new vocabulary correctly after listening to the modal pronunciation.
2. Deduce the acoustic/auditory similarity between the two vocabulary (**abroad and old**).
3. Recognize the new vocabulary through given pictures & sentences correctly.
4. Distinguish between the meaning of the two words (**trip and picnic**).
5. Use vocabulary in meaningful sentences appropriately.

<u>Teaching Materials:</u>

❖ Flashcards
❖ Pictures
❖ PowerPoint Presentation

<u>Presentation:</u>

A. First Stage:
- Write the words on the bored and pronounce them.
- Ask pupils to pronounce the words correctly in groups and individually.
- Explain the words meanings through pictures, examples, definition or translation.

B. Second Stage:
- Write the keyword beside each word and pronounce it.
- Ask pupils to pronounce the keywords and notice the

Unit (2)
Making Plans

A) Choose the right answer :

1- The travel agent will arrange a .... for us.
   - a- story
   - (b) trip
   - c- buy
   - d- train

2- My father likes to .... a rest after the work.
   - (a) take
   - b- arrange
   - c- plan
   - d- go

3- I always enjoy my .... with my family.
   - a- thought
   - b- sleep
   - c- book
   - (d) holiday

4- My friend went a .... with his brother and took this photo.
   - a- bag
   - (b) picnic
   - c- curtain
   - d- story

5- My school will .... a big graduation ceremony.
   - a- take
   - b- locate
   - (c) arrange
   - d- improve

6- This is a .... in India.
   - a- street
   - b- sound
   - c- light
   - (d) museum

185

acoustic similarity between the words and their keywords.

C. Third Stage:

- Present the visual pictures through multimedia.
- Explain the link between the form of each word and its meaning through pictures.
- Describe the relationship between the words and their keywords which is represented in the pictures.

Evaluation:

1. Correctly, pronounce the following vocabulary aloud:
   (**trip - museum - career - future - picnic - course - holiday - walk - arrange - take - abroad - old**).
2. What is the acoustic/auditory similarity between the two vocabulary (**abroad and old**) ?
3. Do questions A, B, and C in the worksheets .
4. What is the difference between the meaning of trip and picnic ?
5. Do question D in the worksheets .

Homework:

- Write keywords for the words (holiday and old) and draw and draw interactive pictures to link between each word and its keyword.
- Complete answering the questions that are not answered in the class.

186

---

7) The opposite of new is :

(a) old   b- big

c- modern   d- high

B) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- This house is <u>not new</u>.   (old)

    This house is **old**

2- I want to <u>get</u> this present to my mother.   (take)

    I want to **take** this present to my mother.

3- We prepare a <u>journey</u> for the weekend.   (trip)

    We prepare a **trip** for the weekend.

4- I need to take more <u>sessions</u> in painting.   (courses)

    I need to take more **courses** in painting.

5- I must have a good work in the <u>next years</u>.   (future)

    I must have a good work in the **future**.

6- <u>Put these sentences in order</u> to get a complete paragraph.   (arrange)

    Arrange these sentences to get a complete paragraph.

C) Think of another keywords for the following words:

abroad   =   Answers will vary

picnic   =   Answers will vary

future   =   Answers will vary

4

D) Use the following vocabulary in meaningful sentences of your own :

1- trip

Answers will vary

2- museum

Answers will vary

3- future

Answers will vary

4- course

Answers will vary

5- arrange

Answers will vary

6- abroad

Answers will vary

5

Vocabulary List and Keywords

Vocabulary	Keyword
Turkish (n)	finish
Christianity (n)	city
French (n)	fish
Sterling (n)	smiling
Chinese (n)	cheese
Europe (n)	H.W
Franc (n)	bank
Judaism (n)	Judy and Yazen
Euro (n)	Zoro
location (n)	station
population (n)	H.W
religion (n)	television
currency (n)	H.W
north (adj)	fourth
south (adj)	mouth

She wishes to **finish** studying the **Turkish** language.

Vocabulary	Keyword
Turkish	**finish**

She lives in the **city** of **Christianity**.

Vocabulary	Keyword
Christianity	**city**

Wooow this **fish** speaks **French**.

J'aime la Tour Eiffel.

Vocabulary	Keyword
French	**fish**

He is looking at the **smiling** face in the **Sterling** .

Vocabulary	Keyword
Sterling	**smiling**

There is **cheese** in the **Chinese** book

Vocabulary	Keyword
Chinese	**cheese**

He is washing the **Franc** in front of the **bank**.

Vocabulary	Keyword
Franc	**bank**

Judy and Yazen read about **Judaism**.

Vocabulary	Keyword
Judaism	**Judy and Yazen**

Zoro wants to get 100000 **Euro**.

Vocabulary	Keyword
Euro	**Zoro**

I like to work in the **station** in that **location**.

Vocabulary	Keyword
location	**station**

He is watching the **religion** program in the **television**.

Vocabulary	Keyword
religion	**television**

fourth ← 4ᵗʰ
north
The picture of **fourth** is in **north**.

west ← → east

The picture of **mouth** is in **south**.
south
mouth
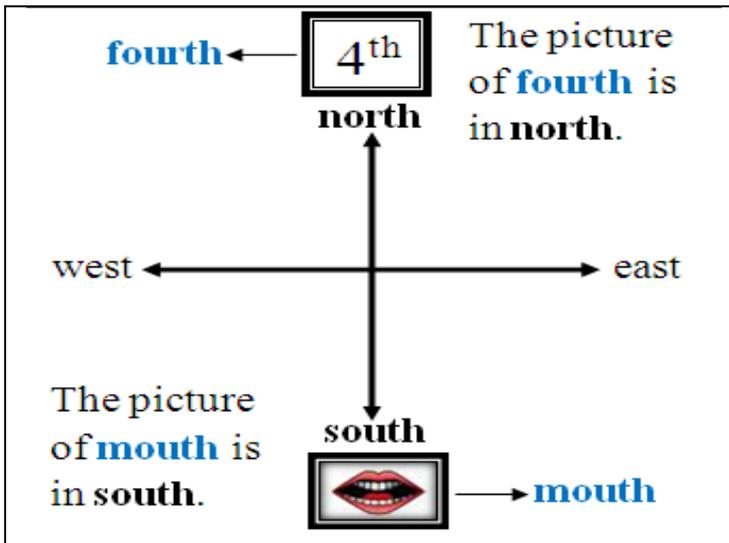
Vocabulary	Keyword	Vocabulary	Keyword
north	**fourth**	**south**	**mouth**

Teaching Procedures

Objectives:

1. Pronounce the new vocabulary correctly after listening to the modal pronunciation.
2. Deduce the acoustic/auditory similarity between the two vocabulary (**north and south**).
3. Recognize the new vocabulary through given pictures & sentences correctly.
4. Differentiate among (languages, currency and religion) .
5. Use vocabulary in meaningful sentences appropriately.

Teaching Materials:

❖ Multimedia
❖ Pictures
❖ Real objects
❖ Drawings

Presentation:

A. First Stage:
- Write the words on the bored and pronounce them.
- Ask pupils to pronounce the words correctly in groups and individually.
- Explain the words meanings through pictures, examples, definition or translation.

B. Second Stage:
- Write the keyword beside each word and pronounce it.

Unit 3
Going to Places

A) Fill in the spaces with the following vocabulary:

Franc - south - population - religion - Christianity - location - Euro - north

1- "Islam" is a religion .
2- Franc is the currency of France.
3- Brazil is in the south America.
4- The population of Saudi Arabia is about 27.136.977
5- What is the location of King Fahd's bridge ?
6- Christianity is the religion that is not be accepted by Allah.
7- Euro is the most expensive currency in the world.

_____

B) Match the words with the suitable pictures:

1- Europe
2- North
3- Franc
4- population
5- Turkish

- Ask pupils to pronounce the keywords and notice the acoustic similarity between the words and their keywords.

C. **Third Stage:**
- Present the visual pictures through multimedia.
- Explain the link between the form of each word and its meaning through pictures.
- Describe the relationship between the words and their keywords which is represented in the pictures.

Evaluation:

1. Correctly, pronounce the following vocabulary aloud:
   (**Turkish - Christianity - French- Sterling - Chinese - Europe - Franc - Judaism - Euro - location- population - religion - currency- north - south**).
2. What is the acoustic/auditory similarity between (**north** and **south**) ?
3. Do the questions A,B and D in the worksheets.
4. Do question C in the worksheets .
5. Do question E in the worksheets .

Homework:

- Write keywords for the word (**Europe- population- currency**) and draw interactive pictures to link between each word and its keyword.
- Complete answering rest questions.

191

C) Categorize the following vocabulary according to their kind:

Franc - Turkish - Christianity - Euro - French - Judaism - Sterling - Chinese

Religion	Language	Currency
Islam	Turkish	Franc
Christianity	Arabic	Euro
Judaism	French	Sterling
--------	Chinese	Riyal

D) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- Islam is the faith that satisfies Allah.   (religion)
   Islam is the religion that satisfies Allah.

2- The teacher wants to change the position of the board.   (location)
   The teacher wants to change the location of the board.

3- The money of Saudi Arabia is Riyal.   (currency)
   The currency of Saudi Arabia is Riyal.

4- Catholic and Protestant are against Islam.   (Christianity)
   Christianity is against Islam.

7

E) Rearrange the following vocabulary to form meaningful sentences:

1- religion - is - Christianity - of - Jesus - the .
   Christianity is a religion.

2- do - We - French - not - language - speak .
   We do not speak French language.

3- is - currency - a - Sterling .
   Sterling is a currency.

4- She - beside - lives - location- the - of - Ministry .
   She lives beside the location of Ministry.

6- population - The - of - is - Egypt - 76.822.000 - about .
   The population of Egypt is about 76.822.000 .

7- of - southern - Al-Baha - in - Saudi Arabia- is - region .
   Al-Baha is in southern region of Saudi Arabia.

8

Lesson (2) Vocabulary

Vocabulary List and Keywords

Vocabulary	Keyword
energy (n)	Mr. G
garbage (n)	garage
dumping (n)	king
product (n)	H.W
sea (n)	see
resources (n)	horses
pollution (n)	lotion
environment (n)	cement
litter (v)	letter
recycle (v)	bicycle
reduce (v)	H.W
smoke (v)	small
conserve (v)	H.W

Mr. G is full of **energy**.

Vocabulary	Keyword
energy	**Mr. G**

The **garage** is cleaning itself from the **garbage**.

Vocabulary	Keyword
garbage	**garage**

The **king** is **dumping** the rubbish in the sea.

Vocabulary	Keyword
dumping	**king**

He wants to **see** the **sea**.

Vocabulary	Keyword
sea	**see**
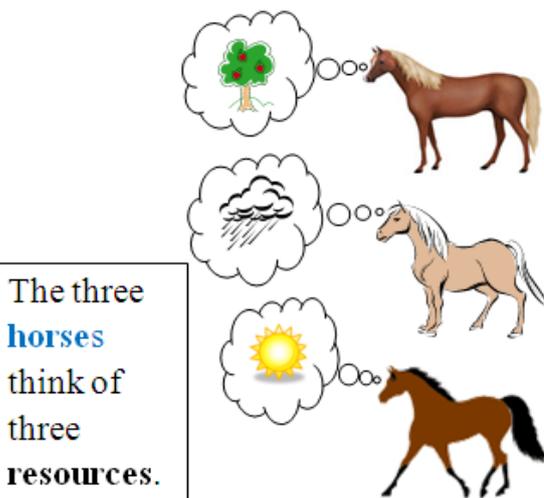
The three **horses** think of three **resources**.

Vocabulary	Keyword
resources	**horses**

He made **pollution** by using the **lotion**.

Vocabulary	Keyword
pollution	**lotion**

He destroys the **environment** by pouring the **cement** on it.
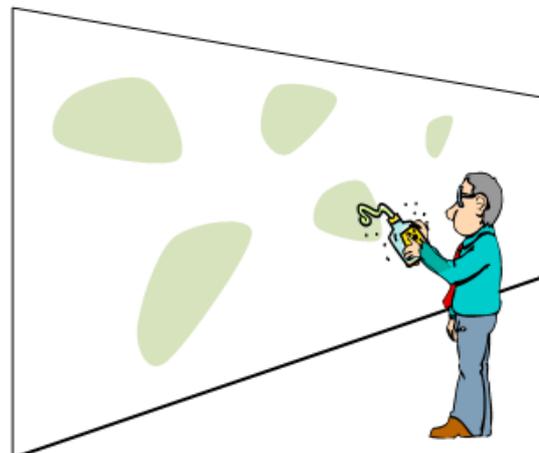
Vocabulary	Keyword
environmen	**cement**

He **litters** the ground with his friend's **letters**.

Vocabulary	Keyword
litter	**letter**

He threw the **bicycle** in the **recycle** bin.

Vocabulary	Keyword
recycle	**bicycle**

The **small** boy thinks to **smoke**.

Vocabulary	Keyword
smoke	**small**

Teaching Procedures

Objectives:

1. Pronounce the new vocabulary correctly after listening to the modal pronunciation.
2. Recognize the new vocabulary through given pictures & sentences correctly.
3. Distinguish between the meaning of the two words (**dumping** and **littering**).
4. Use vocabulary in meaningful sentences appropriately.

Teaching Materials:

- ❖ Pictures
- ❖ Flashcards
- ❖ Multimedia
- ❖ Cassette

Presentation:

A. First Stage:
- Write the words on the bored and pronounce them.
- Ask pupils to pronounce the words correctly in groups and individually.
- Explain the words meanings through pictures, examples, definition or translation.

B. Second Stage:
- Write the keyword beside each word and pronounce it.
- Ask pupils to pronounce the keywords and notice the

Unit (5)
Save Our Planet

A) Choose the right answer:

1- We should protect our .... from pollution.
  a- monuments   b- career
  c- environment   d- dreams

2- I should .... my weight.
  a- count   b- allow
  c- feel   d- reduce

3- This is a picture of ....
  a- money   b- garbage
  c- stationary   d- jewelry

4- The word "to recycle" means to ....
  a- treat waste materials so that they can be used again.
  b- cover the ground with garbage
  c- save things from being damaged.
  d- make objects beautiful by decorating them.

5- He lettered the ground with papers.
  a-   b-
  c-   d-

6- I like to swim in the ....
  a- desert   b- sea
  c- mountain   d- factory

7- The word "energy" means the ....
  a- power which makes machines work.
  b- materials that a country has or can use.
  c- damage of the environment caused by civilization.
  d- process of making products in large quantities.

8- Do not .... in the general places.
  a- eat   b- drink
  c- smoke   d- walk

9- The word "dump" means to ....
  a- keep on   b- throw down
  c- take off   d- talk to

B) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- You should have power to push the huge car.   (energy)
  You should have energy to push the huge car.

2- To be healthy, we must keep our situation clear.   (environment)
  To be healthy, we must keep our environment clear.

3- People should protect their possessions from lost.   (conserve)
  People should conserve their possessions from lost

4- There is a solution for the rubbish problem .   (garbage)
  There is a solution for the garbage problem

10

195

acoustic similarity between the words and their keywords.

C. Third Stage:

- Present the visual pictures through multimedia.
- Explain the link between the form of each word and its meaning through pictures.
- Describe the relationship between the words and their keywords which is represented in the pictures.

Evaluation:

1. Correctly, pronounce the following vocabulary aloud:
   (**energy - garbage - dumping - product - sea - resources - pollution- environment - littering - recycle- reduce- smoke - conserve**).
2. Do questions A ,B and D in the worksheets .
3. What is the difference between the meaning of **dumping** and **littering**?
4. Do question D in the worksheets .

Homework:

- Write keywords for the words (**product, reduce** and **conserve**) and draw interactive pictures to link between each word and its keyword
- Complete answering the questions that are not answered in the class.

196

5- She is <u>throwing down</u> products into the sea. (dumping)

She is **dumping** products into the sea.

6- Most countries export and import the <u>goods</u> to each other. (products)

Most countries export and import the **products** to each other.

7- Would you please <u>decrease</u> the volume of the radio ? (reduce)

Would you please **reduce** the volume of the radio ?

8- European countries start to <u>reuse</u> the used materials early. (recycle)

European countries start to **recycle** the used materials early.

C) Write keywords for the following vocabulary and then draw pictures to link between each word and its keyword:

Vocabulary reduce	keyword
Answers will vary	

Vocabulary product	keyword
Answers will vary	

11

D) Describe the following pictures by using words in the box to form meaningful sentences :

dumping - sea - energy - resources - pollution - air - conserve - products - natural - environment .

(1) (2) (3) (4)

1- Answers will vary
2- Answers will vary
3- Answers will vary
4- Answers will vary

12

Vocabulary List and Keywords

Vocabulary	Keyword
senses (n)	H.W
sight (n)	right
smell (n)	fill
taste (n)	Mr. Toast
touch (n)	H.W
hearing (n)	fearing
sour (adj)	shower
smooth (adj)	H.W
hard (adj)	card
quiet (adj)	white
bitter (adj)	better
rough (adj)	H.W
loud (adj)	sound
soft (adj)	coat
sweet (adj)	heat
rotten (adj)	Robbie Rotten

fresh (adj)	H.W
round (adj)	ground
noisy (adj)	Fawzy
bright (adj)	light
square (adj)	H.W
salty (adj)	Mr. Forty

She has a **sight** candy in her **right** hand.

Vocabulary **sight**	Keyword **right**

She **smells** the coffee after she **fills** the cup.

Vocabulary **smell**	Keyword **fill**

Mr. Toast likes to **taste** the soup.

Vocabulary **taste**	Keyword **Mr. Toast**

He is **fearing** from **hearing** the bad news.

Vocabulary **hearing**	Keyword **fearing**

This baby takes a **sour** **shower** .
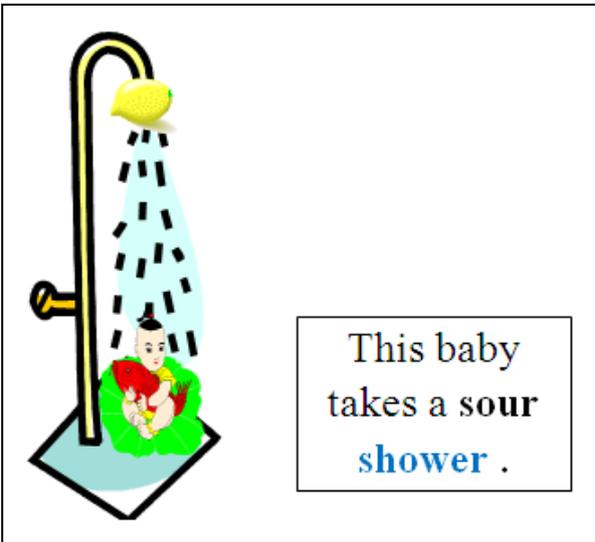
Vocabulary **sour**	Keyword **shower**

She finds a **hard card** in her ice cream.

Vocabulary **hard**	Keyword **card**

shshshsh

The **white** face asks us to be **quiet**.
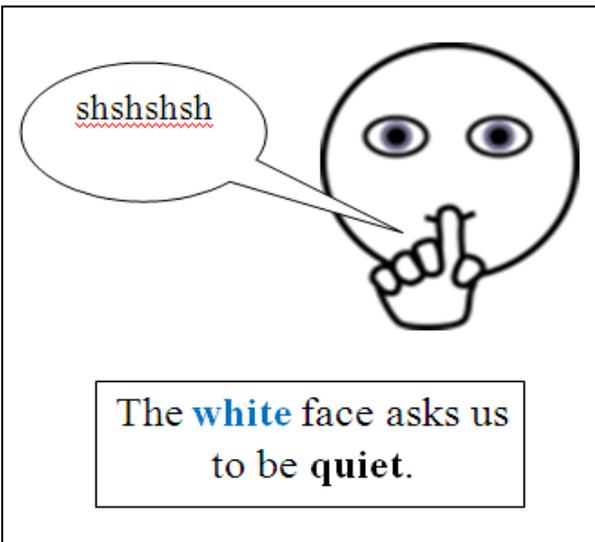
Vocabulary **quite**	Keyword **white**

OOO mom this medicine is so **bitter**.

It is **better** to take this **bitter** medicine.

Vocabulary **bitter**	Keyword **better**

I do not like to hear **loud** **sound**.
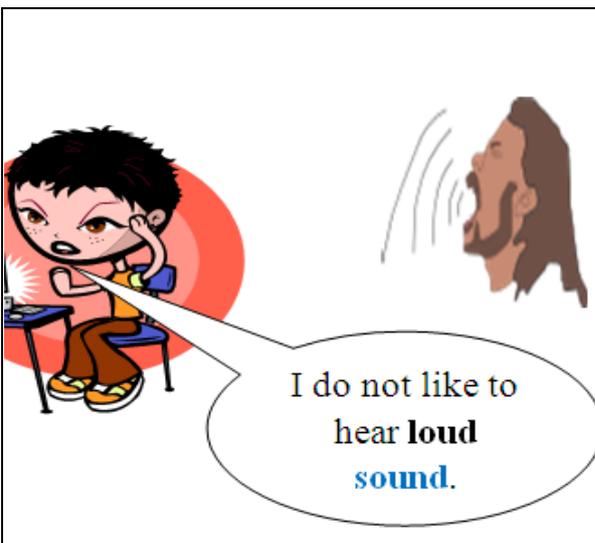
Vocabulary **loud**	Keyword **sound**

She looks for a **soft coat**.

Vocabulary **soft**	Keyword **coat**

He likes to **heat** the **sweet** candy.	**Robbie Rotten** has a **rotten** apple.
Vocabulary **sweet**	Keyword **heat**	Vocabulary **rotten**	Keyword **Robbie Rotten**

He is playing in a **round ground**.	OOO my baby **Fawzy** do not be **noisy**.
Vocabulary **round**	Keyword **ground**	Vocabulary **noisy**	Keyword **Fawzy**

The **light** has a **bright** idea.	**Mr. Forty** **Mr. Forty** has **salty** potatoes.
Vocabulary **bright**	Keyword **light**	Vocabulary **salty**	Keyword **Mr. Forty**

Teaching Procedures

<u>Objectives :</u>

1. Pronounce the new vocabulary correctly after listening to the modal pronunciation.
2. Recognize the new vocabulary through given pictures & sentences correctly.
3. Give the opposite of the following adjectives: (**rough - quite - sweet - rotten - soft**).
4. Use vocabulary in meaningful sentences appropriately.

<u>Teaching Materials:</u>

- ❖ Real objects
- ❖ Multimedia
- ❖ Pictures
- ❖ Drawing

<u>Presentation:</u>

A. First Stage:
- Write the words on the bored and pronounce them.
- Ask pupils to pronounce the words correctly in groups and individually.
- Explain the words meanings through pictures, examples, definition or translation.

B. Second Stage:
- Write the keyword beside each word and pronounce it.
- Ask pupils to pronounce the keywords and notice the

Unit 6

The Senses

A) Complete the following graphic organizer :

The Senses

touch   hearing
sight   smell   taste

B) Match between the adjectives and the senses that used with them :

sour / smooth / bright / bitter / rough / loud / soft / sweet / rotten / round / fresh / quiet / square

sight / smell / taste / touch / hearing

acoustic similarity between the words and their keywords.

C. Third Stage:

- Present the visual pictures through multimedia.
- Explain the link between the form of each word and its meaning through pictures.
- Describe the relationship between the words and their keywords which is represented in the pictures.

Evaluation:

1. Correctly, pronounce the following vocabulary aloud:
   (**senses -sight- smell - taste- touch- hearing- sour - smooth- hard- quiet- bitter - rough- loud- soft - sweet- rotten- fresh - round-noisy- bright- square- salty**).
2. Do questions A , B and D in the worksheets .
3. Do question C in the worksheets .
4. Do question E in the worksheets .

Homework:

- Write keywords for the following words : (**senses - touch - smooth - rough - fresh - square**) and draw interactive pictures to link between each word and its keyword.
- Complete answering the questions that are not answered in the class.

C) Give the opposite of the following vocabulary :

rough ≠ smooth   sweet ≠ bitter / salty

quite ≠ loud / noisy   rotten ≠ fresh

soft ≠ hard

_____

D) Choose the right answer :

1- He ……….. the flowers.

  (a) smells   b- draws

  c- arranges   d- throws

2- To feel the softness of the cloth, ……….. it.

  a- see   b- taste

  c- smell   (d) touch

3- The cook …….. food.

  a- decorates   b- carries

  (c) tastes   d- serves

4- She has ………… skin.

  a- salty   b- bitter

  c- sour   (d) smooth

5- This is a ………… .

  a- circle   b- triangle
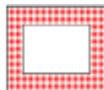
  c- book   (d) square

6- The Sea water is ……. .

  a- bitter   b- sour

  (c) salty   d- sweet

14

8- It's rough.

a-   (b)

c-   d-

_____

E) Use the following vocabulary in meaningful sentences of your own :

1- senses

Answers will vary

2- hard

Answers will vary

3- hearing

Answers will vary

4- sweet

Answers will vary

5- square

Answers will vary

6- bitter

Answers will vary

7- touch

Answers will vary

15

Vocabulary List and Keywords

Vocabulary	Keyword
supported (adj)	sport
embarrassed (adj)	in Paris
neglected (adj)	H.W
safe (adj)	Tafe
angry (adj)	hungry
jealous (adj)	A+
comfortable (adj)	H.W
worried (adj)	word
hurt (adj)	Mr. Shirt
pleasant (adj)	elephant
unpleasant (adj)	H.W

In **sport**, it's important to have **supported** players.

Your goal is a fantastic one my friend.

Vocabulary **supported**	Keyword **sport**

He is so **embarrassed** **in Paris**.

Vocabulary **embarrassse**	Keyword **in Paris**

Tafe lives in a **safe** house.

Vocabulary **safe**	Keyword **Tafe**

He is **angry** because he is **hungry**.

I didn't cook it.

I am hungry, where is the lunch?

Vocabulary **angry**	Keyword **hungry**
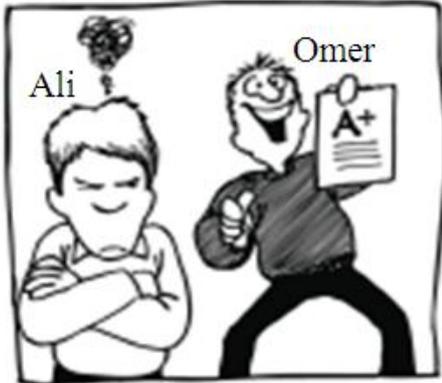
Ali is **jealous** from Omer because he takes **A+**.

Vocabulary	Keyword
jealous	**A+**

The letter O in **word** is very **worried**.

Vocabulary	Keyword
worried	**word**
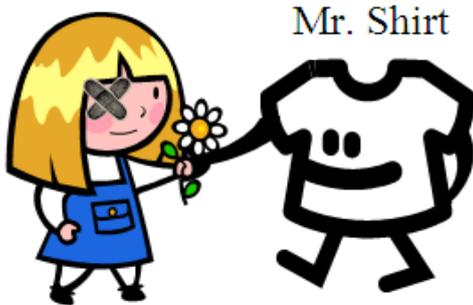
Mr. Shirt gives the **hurt** child a flower.

Vocabulary	Keyword
hurt	**Mr. Shirt**

I love this **pleasant elephant**.
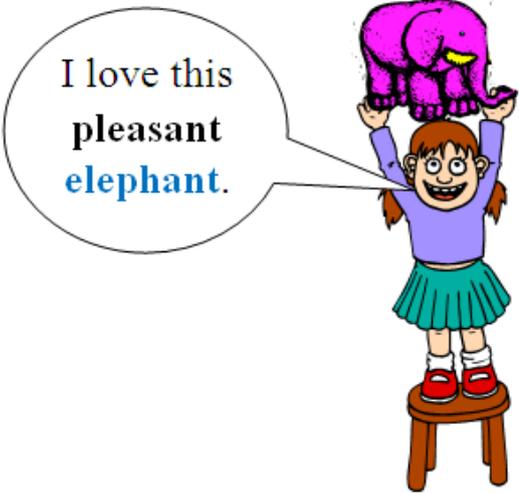
Vocabulary	Keyword
pleasant	**elephant**

Teaching Procedures

Objectives:

1. Pronounce the new vocabulary correctly after listening to the modal pronunciation.
2. Recognize the new vocabulary through given pictures & sentences correctly.
3. Differentiate between the vocabulary of pleasant feelings and that of unpleasant ones through a given list.
4. Use vocabulary in meaningful sentences appropriately.

Teaching Materials:

- ❖ Multimedia
- ❖ Cassette
- ❖ Pictures
- ❖ Drawing

Presentation:

A. First Stage:
- Write the words on the bored and Pronounce them.
- Ask pupils to pronounce the words correctly in groups and individually.
- Explain the words meanings through pictures, examples, definition or translation.

B. Second Stage:
- Write the keyword beside each word and pronounce it.
- Ask pupils to pronounce the keywords and notice the

acoustic similarity between the words and their keywords.

C. Third Stage:

- Present the visual pictures through multimedia.
- Explain the link between the form of each word and its meaning through pictures.
- Describe the relationship between the words and their keywords which is represented in the pictures.

Evaluation:

1. Correctly, pronounce the following vocabulary aloud:
   (**neglected - embarrassed- supported - safe - angry - jealous comfortable - worried - hurt - pleasant - unpleasant**).
2. Do questions A, B, and C in the worksheets .
3. What are the vocabulary of pleasant feelings and that of unpleasant ones from these vocabulary :
   (**neglected - supported - safe - angry - jealous - comfortable - worried - hurt**) ?
4. Do question D in the worksheets .

Homework:

- Write keywords for the following words (**neglected- comfortable- unpleasant**) and draw interactive pictures to link between each word and its keyword.

207

Unit 7
Friendship
A) Write the suitable adjective under each picture:

hurt   angry

neglected   comfortable

B) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- I feel secure with my parents.   (safe)
   I feel safe with my parents.
2- I do not like Amal because she has unlikable feelings.   (unpleasant)
   I do not like Amal because she has unpleasant feelings.
3- My classmate Nora is very helpful to us.   (supported)
   My classmate Nora is very supported to us.

16

4- I feel relaxed after doing my homework.   (comfortable)
   I feel comfortable after doing my homework.
5- Mohamed hates to see Faisal arguing . It makes him annoyed.   (angry)
   Mohamed hates to see Faisal arguing . It makes him angry.

C) Write keywords for the following vocabulary and then draw pictures to link between each word and its keyword:

Answers will vary		Answers will vary	

Vocabulary neglected	keyword	Vocabulary unpleasant	keyword

D) Use the following vocabulary in meaningful sentences of your own:

1- supported
Answers will vary

2- hurt
Answers will vary

3- worried
Answers will vary

4- embarrassed
Answers will vary

17

Appendix 8

Pupil's Worksheets

Learning Tools

A) Choose the right answer:

1- This story became shorter because I ….…….. it.

  a- read   b- deleted

  (c-) summarized   d- copied

2- " Arrangement of how something is to be done beforehand" is a ….….…… .

  a- plan   b- review

  c- definition   d- summary

3- "To review" means to ………….

  a- give the main points of a story or paragraph.

  b- think of how to do something before starting.

  c- arrange things in a particular order.

  d- go over your work to correct mistakes.

4- "proofread" means to read ....

  a- and summarize the important points

  b- ideas and put them in order

  c- and mark errors to be corrected .

  d- silently to answer questions

5- The woman in the picture has a …….…..… .

  a- flower   b- graph

  c- topic   d- paragraph
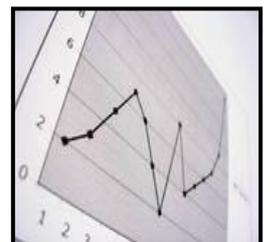
6- The …….…….. of the story is beautiful.

 a- topic   b- dress

 c- book   d- pen

7- The boy in the picture is …………… the cubes.

 a- reading   b- cooking

 c- organizing   d- writing

_____
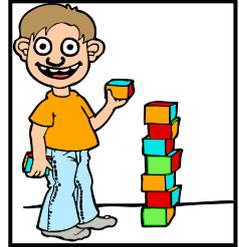
B) Fill in the spaces with the following vocabulary :

proofread - topic - plan - review - organize - summarize

1- This lesson has an interesting **topic** .

2- You have to make a ………..... to enjoy your holiday.

3- "Giving the main points of a story" means to ………..… it.

4- "To arrange something" means to ………….. it.

5- You need to ………… what you write before print it.

_____

C) Use the following vocabulary in sentences from your own:

1- **plan**

…………………………………………………………………………

2- **graph**

…………………………………………………………………………

3- **proofread**

…………………………………………………………………………

Making Plans

A) Choose the right answer :

1- The travel agent will arrange a ………… for us.

    a- story   b- trip

    c- buy   d- train

2- My father likes to ……….. a rest after the work.

    a- take   b- arrange

    c- plan   d- go

3- I always enjoy my ………… with my family.

    a- thought   b- sleep

    c- book   d- holiday

4- My friend went a ……….. with his brother

   and took this photo.

    a- bag   b- picnic

    c- curtain   d- story

5- My school will ……….. a big graduation ceremony.

    a- take   b- locate

    c- arrange   d- improve

6- This is a …………. in India.

    a- street   b- sound

    c- light   d- museum

7) The opposite of new is :

  a- old   b- big

  c- modern   d- high

_____

B) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- This house is <u>not new</u>.   (**old**)

   This house is **old**

2- I want to get this present to my mother.   (**take**)

…………………………………………………………..

3- We prepare a journey for the weekend.   (**trip**)

…………………………………………………………..

4- I need to take more classes in painting.   (**courses**)

…………………………………………………………..

5- I must have a good work in the next years.   (**future**)

…………………………………………………………..

6- Put these sentences in order to get a complete paragraph.   (**arrange**)

…………………………………………………………..

C) Think of another keywords for the following words:

abroad   =   …………………

picnic   =   …………………

future   =   …………………

D) Use the following vocabulary in meaningful sentences of your own :

1- **trip**

……………………………………………………………………………

2- **museum**

……………………………………………………………………………

3- **future**

……………………………………………………………………………

4- **course**

……………………………………………………………………………

5- **arrange**

……………………………………………………………………………

6- **abroad**

……………………………………………………………………………

Unit 3

Going to Places

### A) Fill in the spaces with the following vocabulary:

> **Franc - south - population - religion - Christianity - location - Euro - north**

1- "Islam" is a ……….. .

2- ………….. is the currency of France.

3- Brazil is in the …………. America.

4- The …………….. of Saudi Arabia is about 27.136.977

5- What is the …………. of King Fahd's bridge ?

6- ………….. is the religion that is not be accepted by Allah.

7- …………. is the most expensive currency in the world.

_____

B) Match the words with the suitable pictures:

1- Europe

2- North

3- Franc

4- population
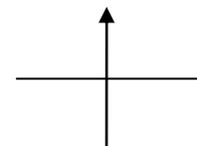
5- Turkish

C) Categorize the following vocabulary according to their kind:

Franc - Turkish - Christianity - Euro - French - Judaism - Sterling - Chinese

Religion	Language	Currency
Islam		
	Arabic	
		Riyal

_____

D) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- Islam is the <u>faith</u> that satisfies Allah.   (**religion**)

   Islam is the **religion** that satisfies Allah.

2- The teacher wants to change the position of the board.   (**location**)

……………………………………………………………..

3- The money of Saudi Arabia is Riyal.   (**currency**)

……………………………………………………………..

4- Catholic and Protestant is against Islam.   (**Christianity**)

……………………………………………………………..

E) Rearrange the following vocabulary to form meaningful sentences:

1- religion - is - Christianity - of - Jesus - the .

………………………………………………………………………

2- do - We - French - not - language - speak .

………………………………………………………………………

3- is - currency - a - Sterling .

………………………………………………………………………

4- She - beside - lives - location- the - of - Ministry .

………………………………………………………………………

6- population - The - of - is - Egypt - 76.822.000 - about .

………………………………………………………………………

7- of - south - Al-Baha - in - Saudi Arabia- is .

………………………………………………………………………

Unit (5)

Save Our Planet

A) Choose the right answer:

1- We should protect our ……………... from pollution.

    a- monuments   b- career

    c- environment   d- dreams

2- I have to ……… my weight.

    a- count   b- allow

    c- feel   d- reduce

3- This is a picture of ………….. .

    a- money   b- garbage

    c- stationary   d- jewelry

4- The word "to recycle" means to ………

    a- treat waste materials so that they can be used again.

    b- cover the ground with garbage.

    c- save things from being damaged.

    d- make objects beautiful by decorating them.

5- He lettered the ground with papers.

a-   b-

c-   d-

6- I like to swim in the ……….. .

  a- desert   b- sea

  c- mountain   d- factory

7- The word "energy" means the ……….

  a- power which makes machines work.

  b- materials that a country has or can use.

  c- damage of the environment caused by civilization.

  d- process of making products in large quantities.

8- Do not ………….. in the general places.

  a- eat   b- drink

  c- smoke   d- walk

9- The word "dump" means to ………....

  a- keep on   b- throw down

  c- take off   d- talk to

_____

B) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- You should have power to push the huge car.   (**energy**)

………………………………………………………………..

2- To be healthy, we must keep our situation clear.   (**environment**)

………………………………………………………………..

3- People should protect their possessions from lost.   (**conserve**)

………………………………………………………………..

4- There is a solution for the rubbish problem .   (**garbage**)

………………………………………………………………..

5- She is throwing down products into the sea. (**dumping**)

…………………………………………………………………..

6- Most countries export and import the goods to each other. (**products**)

…………………………………………………………………..

7- Would you please decrease the volume of the radio ? (**reduce**)

…………………………………………………………………..

8- European countries start to reuse the used materials early. (**recycle**)

…………………………………………………………………..

C) Write keywords for the following vocabulary and then draw pictures to link between each word and its keyword:
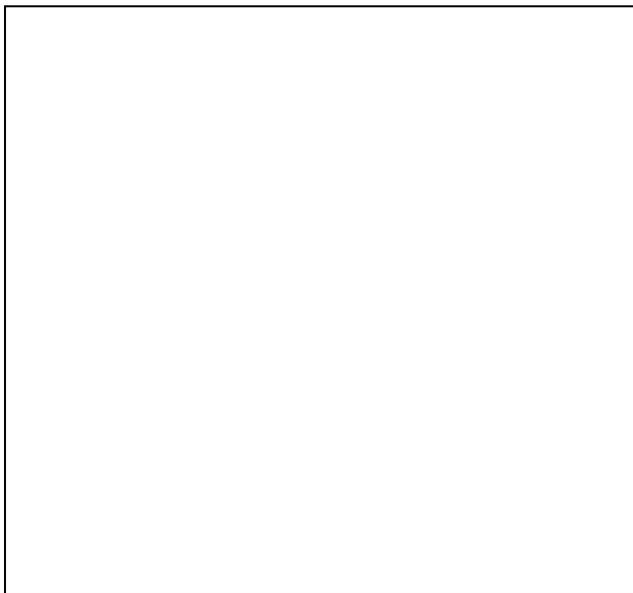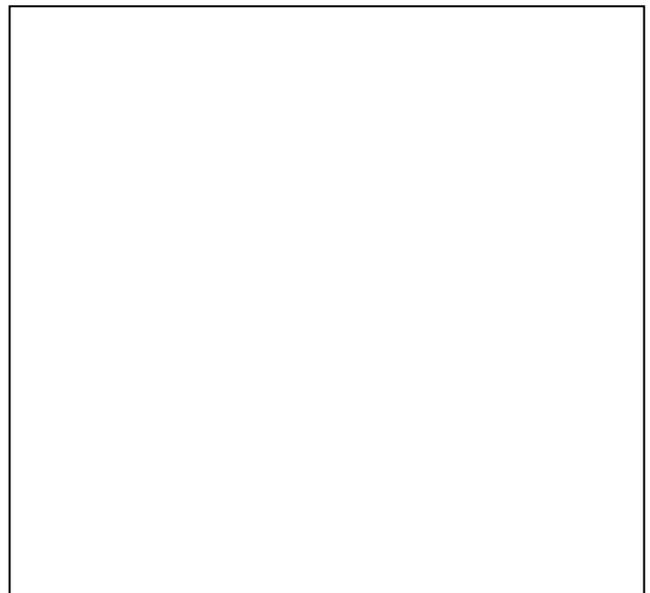
Vocabulary **reduce**	keyword		Vocabulary **product**	keyword

**D) Describe the following pictures by using the words in the box to meaningful sentences :**

dumping - sea - energy - resources - pollution - air - conserve - products - natural - environment .


(1)

(2)

(3)
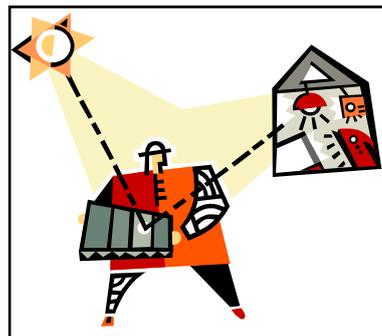
(4)

1- …………………………………………………………………………………

2- …………………………………………………………………………………

3- …………………………………………………………………………………

4- …………………………………………………………………………………

Unit 6

The Senses

A) Complete the following graphic organizer :
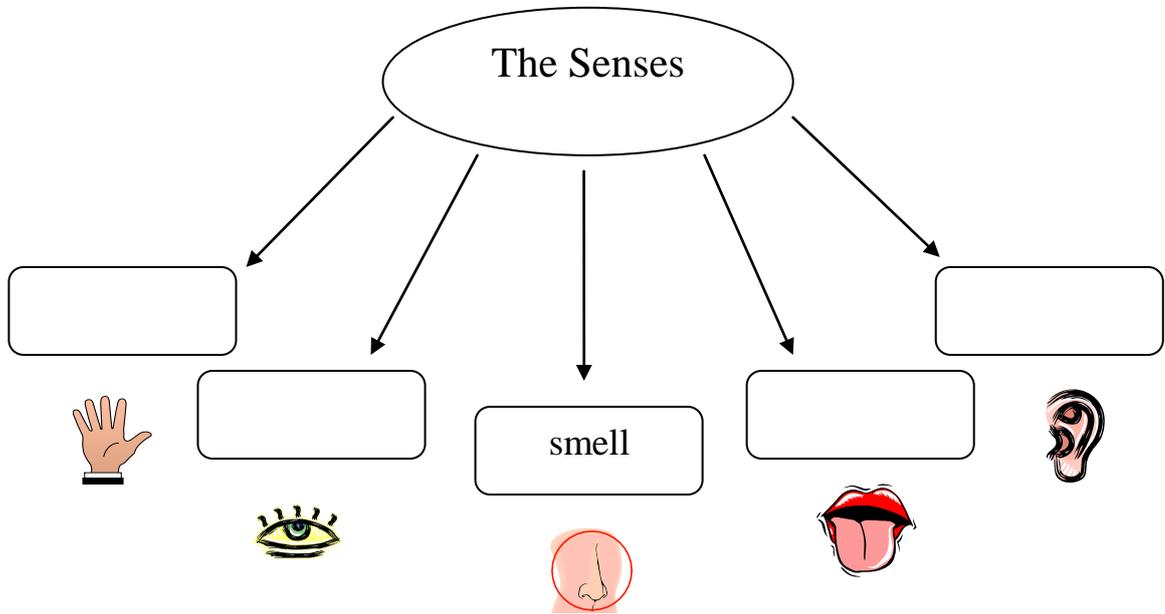
The Senses

smell

B) Match between the adjectives and the senses that used with them :

| sour |
| smooth |
| bright |
| bitter |
| rough |
| loud |
| soft |
| sweet |
| rotten |
| round |
| fresh |
| quiet |
| square |

sight

smell

taste

touch

hearing

221

C) Give the opposite of the following vocabulary :

rough ≠   sweet ≠

quite ≠   rotten ≠

soft ≠

_____

D) Choose the right answer :

1- He …….. the flowers.

  a- smells   b- draws

  c- arranges   d- throws

2- To feel the softness of the cloth, ……. it.

  a- see   b- taste

  c- smell   d- touch

3- She can't see, so she lost the sense of ....

  a- sight   b- tasting

  c- smelling   d- touching

4- The cooker ……. food.

  a- decorates   b- carries

  c- tastes   d- serves

5- She has ……….. skin.

 a- salty   b- bitter

  c- sour   d- smooth

6- This is a ……. .

  a- circle   b- triangle

  c- book   d- square
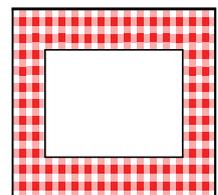
7- Sea water is …… .

a- bitter   b- sour

c- salty   d- sweet

8- It's rough.
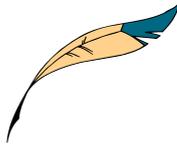
a-   b-

c-   d-

9- The opposite of "bitter" is ….. .

a- sweet   b- rough

c- hot   d- pretty

10- The opposite of "smooth" is ....

a- cold   b- salty

c- cheap   d- rough

_____

E) Use the following vocabulary in meaningful sentences of your own :

1- **senses**

………………………………………………………………………………

2- **hard**

………………………………………………………………………………

3- **hearing**

………………………………………………………………………………

4- **sweet**

……………………………………………………………………………………

5- **square**

……………………………………………………………………………………

6- bitter

……………………………………………………………………………………

7- **touch**

……………………………………………………………………………………

Unit 7

Friendship
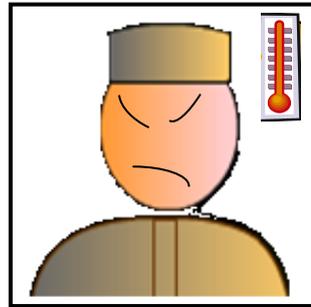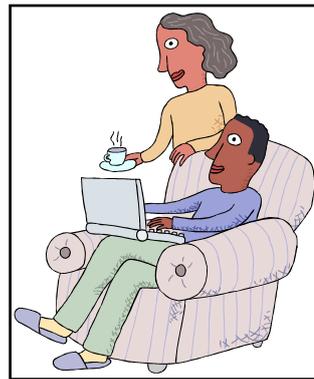
A) Write the suitable adjective under each picture:

....

....


....

....

_____

B) Replace some vocabulary from the sentences with the vocabulary in brackets to give the same meaning :

1- I feel secure with my parents.   (**safe**)

………………………………………………………………

2- I do not like Amal because she has unlikable feelings.   (**unpleasant**)

………………………………………………………………

3- My classmate Nora is very helpful to us.   (**supported**)

………………………………………………………………

4- I feel relaxed after doing my homework.   (**comfortable**)

……………………………………………………………………

5- Mohamed hates to see Faisal arguing . It makes him annoyed.   (**angry**)

………………………………………………………………….…

C) Write keywords for the following vocabulary and then draw pictures to link between each word and its keyword:

Vocabulary **neglected**	keyword	Vocabulary **unpleasant**	keyword

D) Use the following vocabulary in meaningful sentences of your own:

1- supported

………………………………………………………………………

2- hurt

……………………………………………………………………….

3- worried

………………………………………………………………………

4- embarrassed

………………………………………………………………………

Appendix 9

Validation Checklist of
Teacher's Guide and Pupil's Worksheets

Validation Checklist of
Teacher's Guide and Pupil's Worksheet

Ministry of Higher Education
University of Taif
Faculty of Education
Dept. of Curricula and Technology

Dear Professor /Supervisor/Teacher

As part of my Master's study in Curricula and Methods of Teaching English, I am conducting a study to measure the effectiveness of keyword-based instruction in enhancing English vocabulary achievement and retention of intermediate stage pupils with different working memory capacities (WMCs).

Enclosed, there are: (1) the teacher's guide of teaching English vocabulary for 3rd intermediate grade. (2) the pupil's worksheets.

Please read the attached validation checklist of teacher's guide and pupil's worksheets to either approve or suggest the needed improvement.

Thank you for your cooperation.

Name : ………………………………………………………………

Position : …………………………………………………………..……

Location : …………………………………………………………………

Years of experience : …………………………………………………

Signature : ………………………………

The Researcher,
Mona Abdullah Al-Zahrani

Validation Checklist of Teacher's Guide and Pupil's Worksheets

	Aspects	Approved	Not Approved	Recommendations For Improvement
1. Objectives	Clarity			
	Variety			
	Measurability			
	Coverage of the three cognitive levels (knowledge, comprehension, and application)			
	Relevance to the content			
	Suitability to the pupils' level			
2. Presentation	The language accuracy			
	Clarity of the teaching procedures			
	The correctness of the teaching procedures			
	Relevance to the keyword method			

|				
3. Teaching Aids	Variety			
	Easy to use in the class			
	Availability			
	Relevance to the content			
	Suitability to the pupils' level			
	Relevance to the objectives of each lesson			
4. Worksheets	Variety			
	Grading			
	Relevance to the objectives			
	Suitability to the pupils' level			
	The language accuracy			
	The ability to excite pupil's thinking			
	Comprehensiveness of the content			
	Coverage of the three cognitive levels (knowledge, comprehension, and application)			

Appendix 10

Examples of Some Pupils' Drawings

The old chair is scared from the coldman

Help me please...


Vocabulary
touch

Keyword
watch
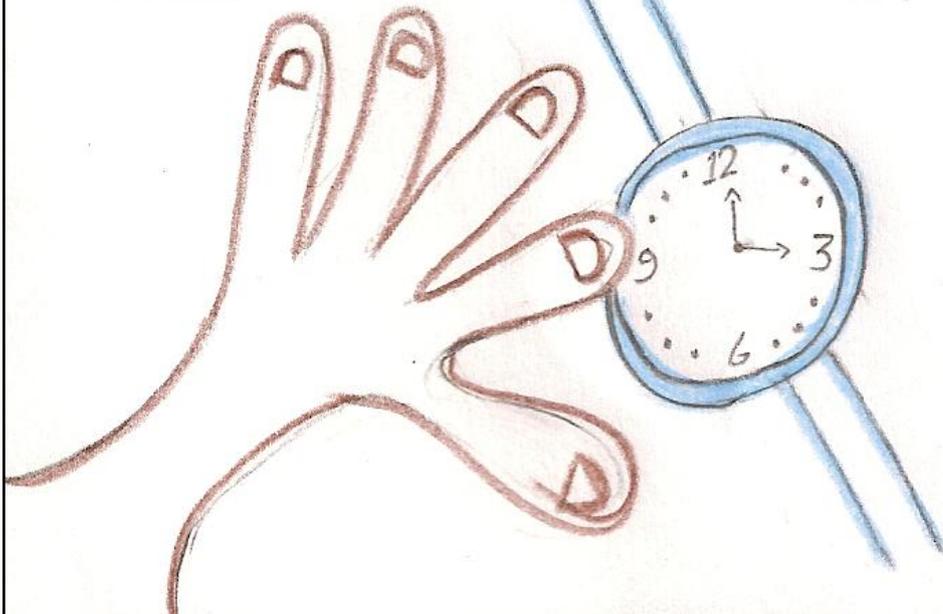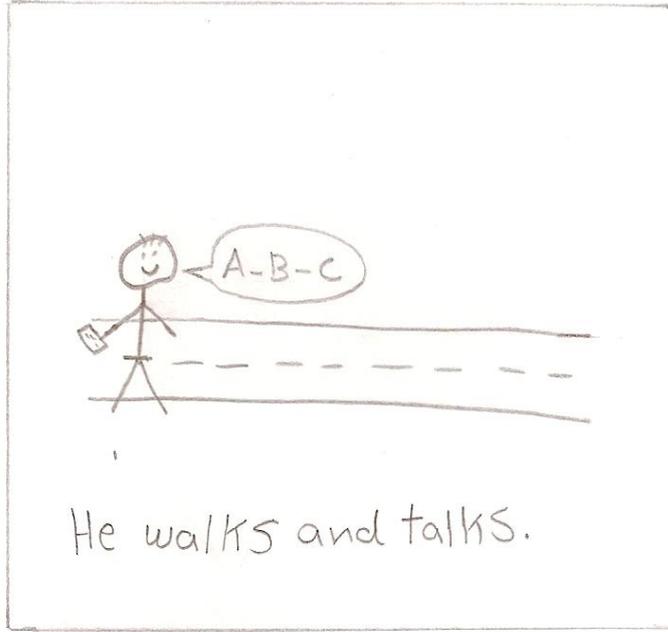
He walks and talks.

Vocabulary	Keyword
Walk	talk

Who makes my tea dirty?
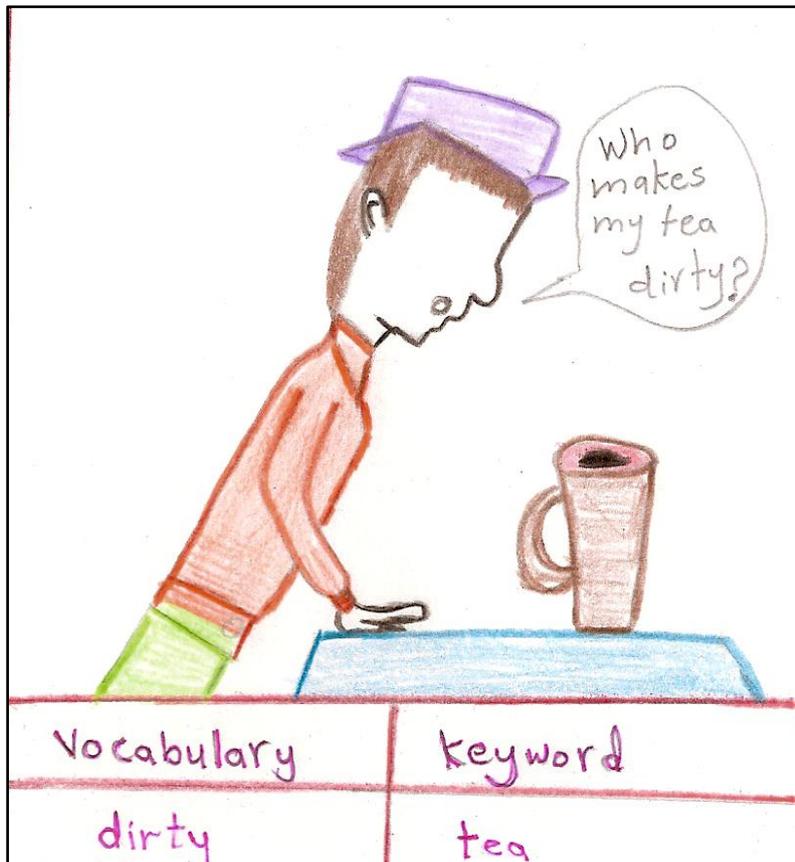
Vocabulary	Keyword
dirty	tea

Arwa and Fayez organize the boxes

Arwa   Fayez

Vocabulary	Keyword
organize	Arwa and Fayez

Smooth light of the moon

The vocabulary	The Key word
Smooth	moon

Vocabulary   Keyword
abroad   board

She explains the word abroad on the board.

Mr. Friday love Miss. holiday ...
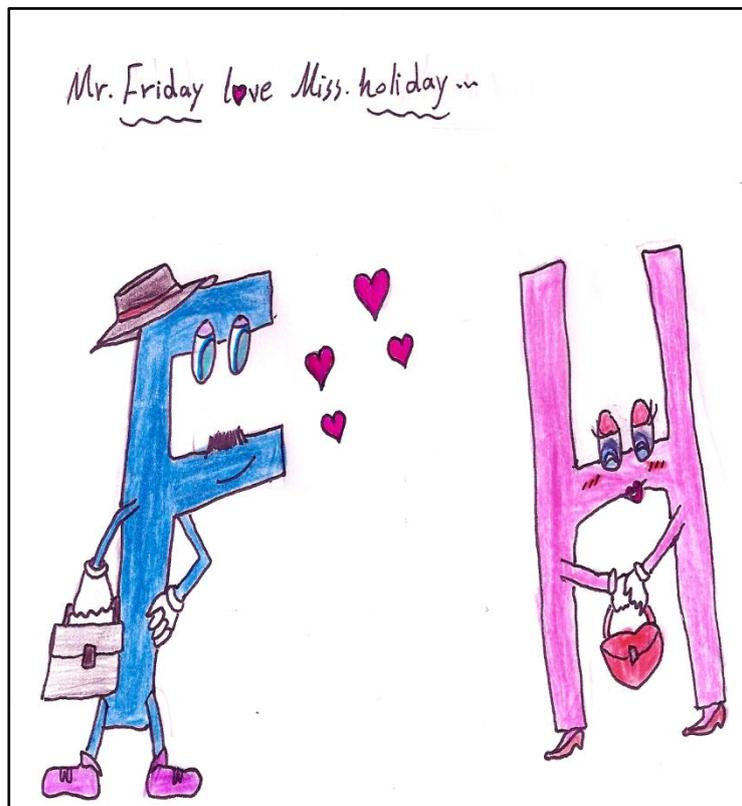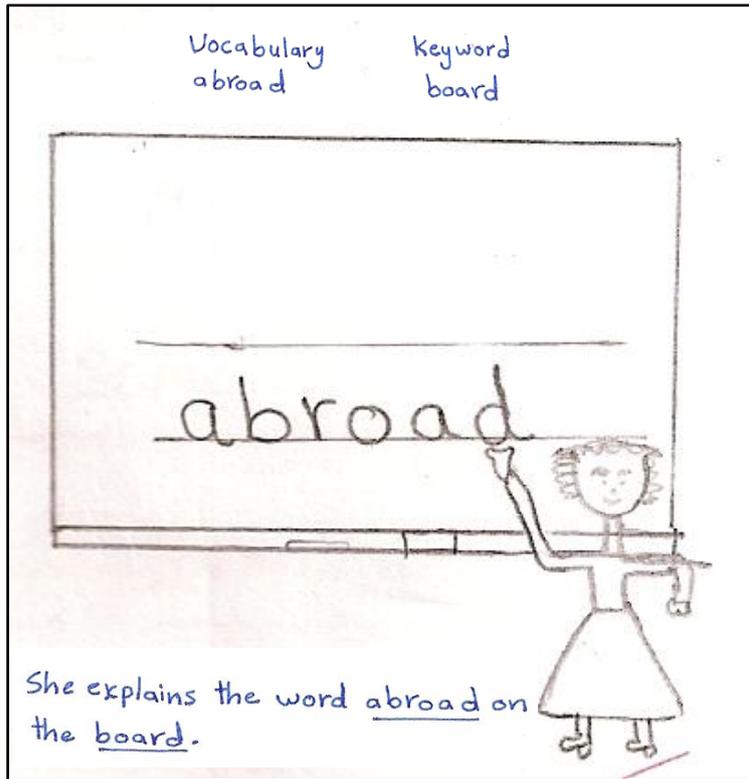
Arabic Summary

ملخص الدراسة باللغة العربية

فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها
لدى تلميذات المرحلة المتوسطة ذوات السعات المختلفة للذاكرة العاملة

المقدمة و الإحساس بالمشكلة :

يُعد تعلم المفردات اللغوية أحد العناصر الأساسية لاكتساب اللغة الانجليزية و تعلمها استماعًا و تحدثًا
و قراءةً و كتابةً ، فالذي يمتلك مفردات محدودة يواجه عقبات في التواصل مع الآخرين ، حيث يصعب عليه
فهم ما يقرؤه أو يسمعه و كذلك التعبير عما يريد أن يتحدث عنه أو يكتبه ، و لأهمية تعلم المفردات اللغوية
جعلتها وزارة التربية و التعليم في المملكة العربية السعودية أحد أهداف مادة اللغة الانجليزية للمرحلة
المتوسطة .

و بالنظر إلى طرق تدريس المفردات اللغوية يتضح أنها تنقسم إلى : مباشرة و غير مباشرة ، و لقد أشار
بعض الباحثين إلى أن التدريس المباشر للمفردات اللغوية أكثر فعالية و كفاءة من التدريس غير المباشر
(Marefat و Shirazi 2003 ، D'Alesio و آخرون 2007 و Min 2008) ، و ذلك لأن المتعلم
يُبدي انتباهًا مباشرًا لما يريد تعلمه من المفردات اللغوية و هذا يُقلّل من نسبة نسيانها، و بالتالي الاحتفاظ بها
في الذاكرة طويلة المدى ، و من ثم استرجاعها وقت الحاجة لها و هذا ما أشار إليه العتوم (2004، ص ص
137 - 138).

ولمعرفة مدى الاحتفاظ بالمفردات اللغوية التي تم تدريسها لطالبات الصف الثالث متوسط أجرت الباحثة
استطلاعًا في إحدى الوحدات المقررة في منهج اللغة الانجليزية للفصل الدراسي الأول لعام 1430 هـ
(Save Our Planet) بإحدى مدارس المرحلة المتوسطة في مدينة الطائف (المتوسطة 46) ، و اشتملت
العينة على خمس عشرة طالبة طُلِب منهن كتابة موضوع إنشائي عن الموضوع الأساسي لتلك الوحدة ،
و لقد أظهرت النتائج بأن الطالبات لم يستخدمن سوى تسع مفردات من أصل إحدى و ثلاثين مفردة جديدة تم
تدريسها لهن من خلال تلك الوحدة ، و لعل هذا التدني في استخدام المفردات الجديدة يرجع إما لعدم فاعلية
طريقة التدريس ، أو طريقة التعلم لتلك المفردات ، حيث لم يتم تذكر المفردات اللغوية المتعلَّمة إلا بنسبة
29.03% ، و هذا مؤشر على وجود مشكلة في تعليم مفردات اللغة الانجليزية و تعلمها دفعت الباحثة إلى
مراجعة الأدبيات والدراسات المرتبطة باستراتيجيات تعليم مفردات اللغة الانجليزية خاصة تلك التي تعتمد
على التدريس المباشر، وبنظرة فاحصة لتلك الدراسات (Marefat و Shirazi 2003، Issariy 2004
، Al-Jarf 2006 و Yek 2006) اتضح للباحثة بأن استراتيجيات الذاكرة هي الأكثر فاعلية في جعل
تعلم و اكتساب مفردات اللغة الانجليزية ميسرًا و باقي الأثر ، ذلك أن التعلم ما هو إلا تذكر.

تعتبر استراتيجيات تقوية الذاكرة إحدى الاستراتيجيات التي تعتمد على الذاكرة و التي يستطيع المتعلمون من خلالها الاحتفاظ بالمادة المتعلَّمة لفترة أطول ، و من ثم استدعائها و استخدامها بالشكل المطلوب ، و هذا ما أكدته الدراسات السابقة في هذا المجال (Bielsker و آخرون 2001 ، Zutaut 2002 ، Alfi 2004 و Ali 2007) سواء على مستوى تعلم المفردات اللغوية أو التعلم بوجه عام . و يندرج تحت استراتيجيات تقوية الذاكرة العديد من الطرق و من أهمها : طريقة الكلمة الوتد ، وطريقة الكلمة المفتاحية ، و طريقة الحروف الأولى ، و طريقة إحلال الأماكن ، و لقد اتفقت أغلب الدراسات بأن طريقة الكلمة المفتاحية تستخدم بشكل كبير في تعليم المفردات اللغوية و تعلمها ، حيث أشارت نتائج تلك الدراسات مثل : Abdel-Majeed (2000) ، Hauptmann (2004) و Abdul-Razak (2008) إلى وجود ارتباطات دالة بين التدريس القائم على الكلمة المفتاحية و اكتساب المفردات اللغوية و الاحتفاظ بها .

وعلى الجانب الآخر أشار Tuholski و آخرون (2001) أن الاختلاف في سعة الذاكرة العاملة يؤثر على الانتباه الذي يعتمد عليه التدريس المباشر و بالتالي يؤثر على عملية التعلم ، و لقد أكدت دراسة Mendonca (2003) أن الفروق الفردية في سعة الذاكرة العاملة لها دور كبير في عملية الاحتفاظ بالمفردات اللغوية ، و هذا ما اتفقت عليه دراسة Soriano و Bajo (2007) .

من خلال ما سبق يتضح بأنه على الرغم من الاهتمام بدراسة تعليم مفردات اللغة الانجليزية و تعلمها و الاحتفاظ بها ، و طريقة الكلمة المفتاحية ، و السعات المختلفة للذاكرة العاملة ، فإنه ـ في حدود علم الباحثة ـ لا توجد دراسة عربية أو أجنبية تناولت دراسة هذه المتغيرات مجتمعة ، و هذا ما دفع الباحثة إلى إجراء هذه الدراسة و التي هدفت إلى قياس فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها لدى تلميذات المرحلة المتوسطة ذوات السعات المختلفة للذاكرة العاملة .

تحديد مشكلة الدراسة :

تحددت مشكلة الدراسة الحالية في وجود تدني في مستوى تحصيل تلميذات الصف الثالث المتوسط لمفردات اللغة الانجليزية و الاحتفاظ بها، و قد يكون هذا نتيجة لعدم فاعلية طرق التدريس المقدمة لهن ، و كذلك عدم ملاءمتها للسعات المختلفة للذاكرة العاملة ، و التي تؤدي دورًا هامًا في عملية تعلم تلك المفردات و الاحتفاظ بها.

و يمكن الإسهام في حل هذه المشكلة من خلال الإجابة عن التساؤل الرئيس الآتي :

ما فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها لدى تلميذات الصف الثالث متوسط ذوات السعات المختلفة للذاكرة العاملة ؟

و يتفرع عن هذا السؤال الأسئلة الفرعية الآتية :

١ ـ ما فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية لدى
تلميذات الصف الثالث متوسط ذوات السعات المختلفة للذاكرة العاملة ؟

٢ ـ ما فاعلية التدريس القائم على الكلمة المفتاحية في تحسين الاحتفاظ بمفردات اللغة الانجليزية لدى
تلميذات الصف الثالث متوسط ذوات السعات المختلفة للذاكرة العاملة ؟

٣ ـ ما أثر التفاعل بين طريقة التدريس (الكلمة المفتاحية ـ الطريقة التقليدية) و سعة الذاكرة العاملة
(المرتفعة ـ المتوسطة ـ المنخفضة) على تحصيل مفردات اللغة الانجليزية لدى تلميذات الصف
الثالث متوسط ؟

٤ ـ ما أثر التفاعل بين طريقة التدريس (الكلمة المفتاحية ـ الطريقة التقليدية) و سعة الذاكرة العاملة
(المرتفعة ـ المتوسطة ـ المنخفضة) على الاحتفاظ بمفردات اللغة الانجليزية لدى تلميذات الصف
الثالث متوسط ؟

أهداف الدراسة :

هدفت الدراسة إلى :

١ ـ قياس فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية لدى
تلميذات الصف الثالث متوسط ذوات السعات المختلفة للذاكرة العاملة .

٢ ـ قياس فاعلية التدريس القائم على الكلمة المفتاحية في تحسين الاحتفاظ بمفردات اللغة الانجليزية لدى
تلميذات الصف الثالث متوسط ذوات السعات المختلفة للذاكرة العاملة .

٣ ـ قياس أثر التفاعل بين طريقة التدريس (الكلمة المفتاحية ـ الطريقة التقليدية) و سعة الذاكرة العاملة
(المرتفعة ـ المتوسطة ـ المنخفضة) على تحصيل مفردات اللغة الانجليزية لدى تلميذات الصف
الثالث متوسط ؟

٤ ـ قياس أثر التفاعل بين طريقة التدريس (الكلمة المفتاحية ـ الطريقة التقليدية) و سعة الذاكرة العاملة
(المرتفعة ـ المتوسطة ـ المنخفضة) على الاحتفاظ بمفردات اللغة الانجليزية لدى تلميذات الصف
الثالث متوسط؟

أهمية الدراسة :

١ ـ توجيه انتباه معلمي و معلمات اللغة الانجليزية كلغة أجنبية و متعلموها نحو فاعلية طريقة الكلمة
المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية والاحتفاظ بها.

٢ ـ إثراء الأنشطة التدريسية التي تساهم في تحسين الاحتفاظ بمفردات اللغة الإنجليزية .

٣ ـ تقديم دليل معلم يسترشد به معلمو و معلمات اللغة الانجليزية كلغة أجنبية على استخدام طريقة الكلمة
المفتاحية في تدريس مفردات اللغة الانجليزية الخاصة بمقرر اللغة الانجليزية للصف الثالث متوسط .

٤ ـ توجيه اهتمام مصممي مناهج اللغة الانجليزية نحو دمج المثيرات اللغوية و البصرية بطريقة تفاعلية لتعزيز بقاء أثر التعلم .

٥ ـ توجيه الاهتمام نحو مفهوم سعة الذاكرة العاملة و دورها في تعلم مفردات اللغة الانجليزية.

فروض الدراسة :

للإجابة عن تساؤلات الدراسة ، و في ضوء المبررات النظرية و العملية ، و ما أسفرت عنه نتائج الدراسات السابقة تم صوغ الفروض التالية :

١ ـ لا توجد فروق ذات دلالة إحصائية بين متوسطات درجات مجموعات الدراسة في التطبيق البعدي للاختبار التحصيلي للمفردات اللغوية و مستوياته ، و ذلك وفقا لاختلاف طريقة التدريس أو سعة الذاكرة العاملة أو التفاعل الثنائي بينهما .

٢ ـ لا توجد فروق ذات دلالة إحصائية بين متوسطات درجات مجموعات الدارسة في التطبيق المؤجل للاختبار التحصيلي للمفردات اللغوية و مستوياته ، و ذلك وفقا لاختلاف طريقة التدريس أو سعة الذاكرة العاملة أو التفاعل الثنائي بينهما .

حدود الدراسة :

اقتصرت الدراسة الحالية على الحدود التالية :

١ ـ عينة عشوائية من تلميذات الصف الثالث متوسط بمدرستين من مدارس البنات التابعة لإدارة التربية و التعليم بمدينة الطائف .

٢ ـ المفردات اللغوية في الوحدات (1- 7) ما عدا وحدة المراجعة وهي الوحدة الرابعة من كتاب اللغة الانجليزية (*Say It in English*) المقرر على تلميذات الصف الثالث متوسط في الفصل الدراسي الأول لعام 1431- 1432هـ .

٣ ـ الاقتصار في الاختبار التحصيلي للمفردات اللغوية على المستويات التالية : (التذكر ـ الفهم ـ التطبيق).

منهجية الدراسة :

أـ التصميم

اعتمدت الدراسة الحالية على منهج البحث التجريبي القائم على التصميم شبه التجريبي باستخدام مجموعتين ؛ تجريبية و ضابطة ، و اشتمل تصميم الدراسة على المتغيرات التالية :

المتغير المستقل : التدريس القائم على الكلمة المفتاحية

المتغير التصنيفي : سعة الذاكرة العاملة

المتغيرات التابعة : 1- تحصيل مفردات اللغة الانجليزية عند مستوى التذكر و الفهم و التطبيق

2- الاحتفاظ بمفردات اللغة الانجليزية

<u>ب ـ العينة</u>

تم تطبيق الدراسة الحالية على عينة من تلميذات الصف الثالث متوسط بمدرستين تابعتين لإدارة التربية و التعليم بمدينة الطائف .

<u>جـ ـ الأدوات</u>

١ ـ اختبار تحصيلي في مفردات اللغة الانجليزية ، و قد تم استخدامه في التطبيق القبلي و البعدي لقياس التحصيل ، و أيضًا في التطبيق المؤجل لقياس الاحتفاظ (إعداد الباحثة) .

٢ ـ اختبار مهام الذاكرة العاملة (إعداد أمينة شلبي ، 2010) .

<u>د ـ إجراءات الدراسة</u>

للإجابة عن أسئلة البحث واختبار صحة الفروض تم إتباع الإجراءات التالية :

١ ـ مراجعة الأدبيات الخاصة بتحصيل مفردات اللغة الانجليزية ، و الاحتفاظ بها ، و التدريس القائم على الكلمة المفتاحية بالإضافة إلى سعة الذاكرة العاملة ؛ للاستفادة منها في كتابة فروض البحث ، وبناء أدواته ، و وضع التصميم التجريبي له.

٢ ـ حصر مفردات اللغة الانجليزية الموجودة في الوحدات المختارة من كتاب اللغة الانجليزية للصف الثالث متوسط بالفصل الدراسي الأول ، و ذلك بالرجوع إلى قسم المفردات في كل وحدة.

٣ ـ إعداد دليل المعلمة الذي يوضح إجراءات تدريس مفردات اللغة الانجليزية في الوحدات التجريبية باستخدام الكلمة المفتاحية وعرضه على المحكمين و إجراء التعديلات المناسبة .

٤ ـ إعداد الاختبار التحصيلي لمفردات اللغة الانجليزية و حساب صدقه و ثباته .

٥ ـ اختيار عينة الدراسة و تقسيمها حسب تصميم الدراسة .

٦ ـ تطبيق اختبار سعة الذاكرة العاملة على تلميذات المجموعتين التجريبية و الضابطة ، ثم تقسيم كل مجموعة حسب سعات الذاكرة العاملة إلى مجموعات فرعية (مرتفعات السعة ـ متوسطات السعة ـ منخفضات السعة).

٧ ـ تطبيق الاختبار التحصيلي لمفردات اللغة الانجليزية قبليًا على مجموعات الدراسة .

٨ ـ تدريس مفردات اللغة الانجليزية باستخدام الكلمة المفتاحية للمجموعة التجريبية بمجموعاتها الفرعية ، و الطريقة التقليدية للمجموعة الضابطة بمجموعاتها الفرعية .

٩ ـ تطبيق الاختبار التحصيلي لمفردات اللغة الانجليزية بعديًا على مجموعات الدراسة .

١٠ ـ تطبيق الاختبار التحصيلي المؤجل لمفردات اللغة الانجليزية على مجموعات الدراسة بعد مرور شهرين من التطبيق البعدي لنفس الاختبار .

١١ ـ معالجة البيانات إحصائيا باستخدام برنامج SPSS.

١٢ ـ عرض النتائج و تفسيرها في ضوء الإطار النظري للدراسة و تقديم الاستنتاجات و التوصيات و المقترحات وفقًا للنتائج التي تم التوصل إليها.

نتائج الدراسة :

توصلت الدراسة إلى النتائج التالية :

١. توجد فروق ذات دلالة إحصائية عند مستوى 0.05 بين متوسطات درجات مجموعات الدراسة في التطبيق البعدي للاختبار التحصيلي بالنسبة للدرجة الكلية ، و مستوى التذكر و الفهم و التطبيق ، و ذلك وفقًا لاختلاف طريقة التدريس ، و لاختلاف سعة الذاكرة العاملة للتلميذات ، و كذلك بالنسبة للدرجة الكلية ، و مستوى الفهم و التطبيق ، و ذلك وفقًا و للتفاعل الثنائي بين طريقة التدريس و سعة الذاكرة العاملة للتلميذات. و لا توجد فروق ذات دلالة إحصائية بين متوسطات درجات مجموعات الدراسة في التطبيق البعدي للاختبار التحصيلي بالنسبة لمستوى التذكر ، و ذلك وفقًا للتفاعل الثنائي بين طريقة التدريس و سعة الذاكرة العاملة للتلميذات .

٢. توجد فروق ذات دلالة إحصائية عند مستوى 0.05 بين متوسطات درجات مجموعات الدراسة في التطبيق المؤجل للاختبار التحصيلي بالنسبة للدرجة الكلية ، و مستوى التذكر و الفهم و التطبيق ، و ذلك وفقًا لاختلاف طريقة التدريس ، و لاختلاف سعة الذاكرة العاملة للتلميذات ، و كذلك بالنسبة للدرجة الكلية ، و مستوى الفهم و التطبيق ، و ذلك وفقًا و للتفاعل الثنائي بين طريقة التدريس و سعة الذاكرة العاملة للتلميذات. و لا توجد فروق ذات دلالة إحصائية بين متوسطات درجات مجموعات الدراسة في التطبيق المؤجل للاختبار التحصيلي بالنسبة لمستوى التذكر ، و ذلك وفقًا للتفاعل الثنائي بين طريقة التدريس و سعة الذاكرة العاملة للتلميذات .

مستخلص الدراسة

فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها لدى تلميذات المرحلة المتوسطة ذوات السعات المختلفة للذاكرة العاملة

هدفت الدراسة الحالية إلى قياس فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية والاحتفاظ بها لدى تلميذات الصف الثالث متوسط ذوات السعات المختلفة للذاكرة العاملة. اعتمدت هذه الدراسة على المنهج التجريبي القائم على التصميم شبه التجريبي باستخدام مجموعتين تجريبية و ضابطة، واشتمل تصميم الدراسة على متغير مستقل وهو التدريس القائم على الكلمة المفتاحية، ومتغيرين تابعين وهما تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها و تم قياسهما عن طريق الاختبار التحصيلي لمفردات اللغة الانجليزية و الذي تم تطبيقه قبليًا و بعديًا و تطبيقًا مؤجلاً ، ومتغير تصنيفي وهو سعة الذاكرة العاملة و تم قياسها عن طريق اختبار مهام الذاكرة العاملة .

اشتملت عينة الدراسة على (96) تلميذة من الصف الثالث متوسط بمدينة الطائف ، بواقع (47) تلميذة في المجموعة التجريبية و التي تم تدريس المفردات لها باستخدام طريقة الكلمة المفتاحية ، و (49) تلميذة في المجموعة الضابطة و التي تم تدريسها نفس المحتوى باستخدام الطريقة التقليدية . تم تحليل نتائج الدراسة إحصائيا باستخدام تحليل التباين الثنائي ، و أظهرت نتائج الدراسة الأثر الايجابي للكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها ، أيضا اتضح من النتائج أن أداء التلميذات ذوات سعات الذاكرة العاملة العالية أفضل من أداء التلميذات ذوات سعات الذاكرة العاملة المتوسطة و المنخفضة في التحصيل و الاحتفاظ ، و أظهرت نتائج الدراسة كذلك أن هناك أثرًا لتفاعل طريقة التدريس مع سعات الذاكرة العاملة المختلفة لتلميذات الصف الثالث متوسط على تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها.

المملكة العربية السعودية

وزارة التعليم العالي

جامعة الطائف

كلية التربية

قسم المناهج و تقنيات التعليم

صفحة الموافقة

فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها لدى تلميذات المرحلة المتوسطة ذوات السعات المختلفة للذاكرة العاملة

رسالة مقدمه من

منى بنت عبدالله بن بخيت الزهراني

لجنة الحكم على الرسالة:

1	**الأستاذ الدكتور/ علي عبدالسميع قورة**	**عضواً خارجياً**	

أستاذ المناهج و طرق تدريس اللغة الانجليزية –كلية التربية – قسم المناهج و طرق تدريس اللغة الانجليزية – جامعة طيبة– المدينة المنورة

2	**الدكتور/ محمود محمد محسب**	**عضواً داخلياً**	

أستاذ المناهج و طرق تدريس اللغة الانجليزية المشارك – قسم المناهج و تقنيات التعليم– كلية التربية – جامعة الطائف – الطائف

3	**الدكتورة/ مرفت محمد الحديدي**	**مشرفا ومقرراً**	

أستاذ المناهج و طرق تدريس اللغة الانجليزية المشارك – قسم المناهج و تقنيات التعليم– كلية التربية – جامعة الطائف – الطائف

تاريخ المناقشة: 21 / 6 / 1432 هــ.

بسم الله الرحمن الرحيم

فاعلية التدريس القائم على الكلمة المفتاحية في تحسين تحصيل مفردات اللغة الانجليزية و الاحتفاظ بها لدى تلميذات المرحلة المتوسطة ذوات السعات المختلفة للذاكرة العاملة

رسالة مقدمة

كمتطلب تكميلي للحصول على درجة الماجستير في التربية

(مناهج و طرق تدريس اللغة الانجليزية)

إعداد

منى بنت عبدالله بن بخيت الزهراني

إشراف

د.مرفت محمد صالح الحديدي

أستاذ المناهج و طرق تدريس اللغة الانجليزية المشارك

كلية التربية ـ قسم المناهج و تقنيات التعليم ـ جامعة الطائف

1432هـ