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## The Effect of Mnemonic Strategy on EFL college Students' Achievement in Reading Comprehension

**A B S T R A C T**

This study aims to:

Find out the effect of Mnemonic Strategy on university students' achievement in English reading comprehension, Find out whether there is any significant difference between students' achievement at the recognition level on one hand, and their achievement at the production level, on the other hand . Find out whether there is any significant difference between the achievement of male students and that of females in English reading comprehension. The sample of this study consists of ninety two EFL second-year students that represents 28.75 percent of its original population and divided into two equal groups. To fulfill the aims of this study an experiment has been designed . The two groups have been taught the same instructional material. The experimental group has been taught according to Mnemonic strategies , while the control group has been taught according to the traditional way. An achievement test has been constructed , validated ,and applied to the two involved groups. The required data has been collected and analyzed statistically .

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اثر استراتيجيات مساعدات التذكر على تحصيل طلبة الكلية دارسي اللغة الانكليزية كلغة اجنبية في

الاستيعاب القرائي

نوال أحمد محمود المفرجي

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**الخلاصة:**

تهدف الدراسة الحالية الى ما يلي:

معرفة تأثير استراتيجيات مساعدات التذكر على تحصيل طلاب الجامعات في مادة الاستيعاب القرائي باللغة الإنجليزية معرفة إذا كان هناك أي فرق كبير بين تحصيل الطلاب على مستوى الادراك من ناحية ، وتحقيقهم على مستوى الإنتاج ، من ناحية أخرى. معرفة إذا كان هناك أي فرق كبير بين تحصيل الطلاب الذكور والإناث في الاستيعاب القرائي باللغة الإنجليزية. تتكون عينة هذه الدراسة من اثنين

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وتسعين طالباً من طلاب المرحلة الثانية لطلبة الكلية دارسي اللغة الإنجليزية لغة أجنبية يمثلون ٢٨,٧٥ في المائة من السكان الأصليين وينقسمون إلى مجموعتين متساويتين. لتحقيق أهداف هذه الدراسة ، تم تصميم تجربة. تم تعليم المجموعتين نفس المواد التعليمية ، لمدة اثني عشر أسبوعاً. تم تدريس المجموعة التجريبية وفقاً لاستراتيجية مساعدات التذكر (الكلمات المفتاحية والصور ، الحرف الأول من كل كلمة ) ، بينما تم تدريس المجموعة الضابطة وفقاً للطريقة التقليدية. تم بناء اختبار تحصيلي والتحقق من صحته وتطبيقه على المجموعتين المعنيتين. تم جمع البيانات المطلوبة وتحليلها إحصائياً.

## Section On

### 1.0 Introduction

Teaching students to become effective readers is an important goal of the compulsory of schooling years. It involves extending student's vocabularies and knowledge of the world, developing their knowledge of English grammar and their decoding skills, developing their reading fluency and extending their ability to comprehend what they read and view from the literal level to the inferential and critical levels (Richards and Renandya,2002:12).

Language and communication are at the heart of the human experience. The major aim beyond learning EFL is to communicate and maintain proficiency in English. Harmer (1983 :32) sees that learning a foreign language is taking place most successfully when learners are put in communicative situations in the target language . Therefore , for many years educators try to find new ways to motivate learners to fulfill this aim (Kilickay , 2006 : 1).

### 1.1 Statement of the Problem

Failure to retain or forget is one of the foremost culprits about why students fail to achieve higher academic competence. Some students confess that they cannot remember many of the things that are being taught to them.

Amoli and Karbalaei (2012:460) affirm that one of the biggest problems with vocabulary learning is that what we learn today will be forgotten tomorrow.

The most likely answer according to Waring is that learners may do enough for retention over time. Retention over time involves learners to make a conscious effort to link the word with its meaning. It is easier to forget a word than to remember it. Waring argues that our brains are designed to forget, not remember. If a student has just learned ten new Words. It is normal for most of them to be forgotten within a few days and maybe only one or two will be retained in memory.

The researcher indicates that EFL college learners often complain that they forget the new words soon after they memorized them and cannot recall the newly learnt words and use it especially in productive skills.

An obvious problem many teachers face is their students cannot remember all of the information they have been taught. It is hard to enough to cover everything on the curriculum in one year, let alone make sure students remember everything they need to know for a test or assignment. Another problem teachers face is a student being unable to stay focused or pay attention. Students these days have so many distractions available right at their fingertips. From new technology, to lack of sleep, to personal issues, a student can have their mind preoccupied on anything and everything besides the subject at hand. Many students in today's schools struggle with the process of memorization and recall. An even bigger number of students deal with an increasing amount of distractions that can slow down or inhibit their learning.

Hence, the current study attempts to investigate the effectiveness of Mnemonic strategy in teaching reading comprehension for EFL university students.

## **1.2 Aims of the study**

This study aims to :

1. Find out the effect of mnemonic strategy on university students' achievement in English reading comprehension.
2. Find out whether there is any significant difference between students' achievement at recognition level on one hand, and their achievement at the production level, on the other hand.
3. Find out whether there is any significant difference between the achievement of males and females students in English reading comprehension.

## **1.3 Hypotheses of the study**

The following hypotheses are put forward in order to be verified throughout the experimental of the current study:

1. There is no statistically significant difference between the mean scores of the experimental group and control group in the posttest.
2. There is no statistically significant difference between the mean scores of students' achievement at the recognition and production levels.
3. There is no statistically significant difference in the mean scores of students' achievement between males and females.

## **1.4 Value of the Study**

The current study is supposed to be valuable since it tries to familiarize EFL learners with the view of mnemonics in education field, so as to improve their achievement in English reading comprehension. Reading comprehension usually has aimed at helping a reader to comprehend the text. Reading comprehension should involve at least two people, the reader and the writer. This process includes decoding the writer's words and then using background knowledge to learn new knowledge.

Mnemonic can enable students with skills for deriving the main idea, summarizing, and paraphrasing information in a manner that makes the reading experience meaningful and unique for the learner. It also enable the learners to navigate a text and develop meaning from what they learn. In addition the value of this study could be itemized as follows:

1. It provides the EFL college students with the required steps to be followed throughout enhancing mnemonic strategy in teaching English reading comprehension.
2. It provides away for students to acquire knowledge that they will need for higher-order thinking.
3. It inform syllabus specialists and designers the necessary information about the role of mnemonic strategy in learning and teaching EFL.

## **1.5 Limits of the Study**

This study is limited to EFL second year college students at the university of Kirkuk college of Education for Humanities, Department of English who are studying reading comprehension during the first course of the academic year 2018- 2019.

## **1.6 Procedures**

The following steps will be followed in order to achieve the aim of the study :

- 1-Selecting two groups of 2nd year college students from the college of Education for Humanities at Kirkuk University.
- 2-Teaching the same English reading comprehension by the researcher herself, by using the mnemonics strategy with the experimental group and using the traditional way with the control group.
- 3- Constructing an achievement test.

4-Subjecting the two groups of students to the achievement test , collecting data and treating it statistically.

5-Obtaining results and drawing some conclusions, recommendations, and suggestions for further work.

## **1.7 Definitions of the Basic Terms**

### **1.7.1 Effect**

It means "change that is caused in a person or thing by another person or thing" (Collins,1987:451)

### **1.7.2 Mnemonic strategy**

Mnemonic strategies mean "systematic procedures for enhancing the memory and making information more meaningful" (Laing,2010:11)

### **1.7.3 Reading comprehension**

It refers to “the linguistic process of reconstructing the intended message of a text by translating its lexical and grammatical information into meaning units that can be integrated with the reader knowledge and cognitive structure ” (Harris,1982:266).

### **1.7.4 Achievement**

It means " the mastery of what has been learnt or the degree of acquisition achieved by an individual in any instructional material in a specific educational field" (Allam,2000:305).

## **Section Two**

### **2.0 An Introductory Note**

The first part of this chapter reviews the concept of mnemonic strategy, its elements, its practical structure, teaching English through reading comprehension ,and the essential element of reading comprehension, also reviews the characteristics of reading comprehension. The second part of this chapter sheds light on the related previous studies.

## 2.1 Theoretical Background

## 2.2 The Dual Coding Theory

The dual coding theory is a cognitive theory invented by Allan Paivio, it attempts to give equal weight to verbal and non-verbal processing. Paivio states that Concrete language is remembered better than abstract language in a wide variety of tasks. (Paivio,1986:54). Paivio(ibid) argues the dual coding theory attempts to give equal weight to verbal and non-verbal processing. Paivio (ibid) states:

**"Human cognition is unique in that it has become specialized for dealing simultaneously with language and with nonverbal objects and events. Moreover, the language system is peculiar in that it deals directly with linguistic input and output (in the form of speech or writing) while at the same time serving a symbolic function with respect to nonverbal objects, events, and behaviors. Any representational theory must accommodate this dual functionality."**

Clark and Paivio(1991:166) state The successful transmission of new skills and knowledge depends on student learning and memory processes that have received much attention from educational and cognitive researchers. They marked effects of concreteness and imagery on memory for educational material have been reported, and the results are generally consistent with the experimental research and with the DCT analysis. The interactive images in the keyword mnemonic technique, for example, link to-be-learned translations with familiar keywords that sound like the unfamiliar vocabulary words. Later presentation of the new word, or its English equivalent, cues retrieval of the keyword, which in turn reintegrates the image and the translation. This technique has been shown to facilitate vocabulary learning in various educational domains, including native- and second-language learning. Keyword and other imagery techniques have considerable relevance for education because new vocabulary is a major element in school learning, especially in languages and sciences.

Allan Paivio(cited in Kraiger,2015:174) establishes this theory, as a memory aid in 1971. It attempts to give equal weight to verbal and non- verbal processing. Paivio affirms "Human cognition is unique in that it has become specialized for dealing simultaneously with language and with nonverbal objects and events. Moreover, the language system is peculiar in that it deals directly with linguistic input and output (in the form of speech or writing) while at the same time it serves as a symbolic function with respect to nonverbal objects, events, and behaviors. Any representational theory must accommodate this dual functionality". Dual Coding theory identifies three types of processing:

- (1) representational, the direct activation of verbal or non-verbal representation.
- (2) referential, the activation of the verbal system by the nonverbal system or vice-versa.
- (3) associative processing, the activation of representations within the same verbal or nonverbal system. A given task may require any or all of the three kinds of processing (Paivio,1986:53).

### **2.3 The Concept of Mnemonic Strategy**

The word mnemonic is derived from the Greek word and Mnemosyne ,referring to the ancient Greek goddess of memory. The use of mnemonics date back to 500 B.C. (Brunvand,1996:1024). Evans (1989:270) states that Simonides is said to be the father of mnemonics. This poet was born at Iulis, in the Island of Ceos, in 556 B.C, and he died in 467 B.C. Mnemonic strategy is invented by Simoides about 2500 years ago. Orators promoted this method and considered it as a way of memorizing speeches by educators and learners during the middle ages and by philosophers such as Bruno who desired to unify all memories' knowledge through the organization of images.

Aristotle (cited in Nicholas,1977:47) stated that it is impossible to think without mental pictures, he used mnemonics to explain his statements concerning imagination and thoughts. Memory and thought have been linked historically to the concept of imagery. What is related to memory originated in western culture as a mnemonic strategy.

The fundamental aspect in developing mnemonic strategies is to find a way to relate new information to information that is already in the long-term memory of students. If this connection can be made, the memory of this information has the potential of being remembered for a very long time. Mnemonics instruction with school age students is commonly implemented as an instructional strategy for teaching word recognition and vocabulary. The effectiveness of the use of these strategies is well documented. Research shows that students, including secondary and college level, remember 2 to 3 times as much factual information, maintain information over delayed recall periods, and enjoy using them. Other research findings “provide evidence that instruction involving the use of mnemonic devices does enhance a student’s formal reasoning skills and that this has the potential for application of knowledge to more varied tasks” (Laing, 2010:354). In addition, “the use of mnemonics with college age students might

have enough potential for making learning easier and possibly more fun” (Higbee, 1994:11).

Bakken and Simpson(2011:80) argued that It may be helpful to mention what mnemonic strategies are not. Mnemonic strategies do not represent a "philosophy" of education. Mnemonic strategies should be implemented for only one reason: to help people remember to-be-learned information. Mnemonic strategies are also not an overall teaching method or curricular approach. The focus of mnemonic strategies is so specific that they are intended to be implemented to enhance the recall of the components of any lesson for which memory is needed. These strategies are comprehension strategies, and also to aid the recall of new information. It should be noted that students who are trained mnemonically also perform better on comprehension tests of that specific content . That is generally because the implementation of the mnemonic strategies helps them remember more information that can be applied on comprehension tests ;therefore it should be emphasized that mnemonic strategies are the “cure all” for success in school and college. There are many different things that students need to do to be successful in a school environment and college. The ability to remember content specific information is only one part of the entire process. The good news is when there is academic content that needs to be remembered, mnemonic strategies could be an important instructional component that teachers could implement.

The psychological process of mnemonic in its natural form is of course memory. The use of mnemonic technique and its development have a very long history. Many special techniques have been produced over this time frame, the effectiveness of some of those has been documented more or less convincingly such as bona fide memory prostheses. Given that a lot of people think that their memory is not as good as they want it to be. Thus, enthusiasm for mnemonics has been repetitive for centuries. So, the natural process of memory is the natural memory (Worthen and Reed Hunt,2011:1).

Worthen and Reed Hunt add that the heavy use of mnemonics strategies continued through the middle ages. During this time, good memory was highly revered, and mnemonic training was an integral part of the educational system. Moreover it is believed that lawyers of this time committed entire sets of laws and codes to memory using a variety of mnemonic techniques. Particularly interesting is a translation of the mnemonic techniques advocated by Hugh of St Victor. Hugh of St Victor strongly advocated the use of mental imagery to enhance memory. However the most striking characteristic of Hugh of St



Victors instruction is the emphasis that was placed on the organization of to-be-remembered information specifically he used the analogy of the meticulous organization of among changer who could quickly and without hesitation retrieve the appropriate coins from a pouch that contained numerous coins of different types. It was suggested that information to be remembered should be organized similarly. With rigorous mental organization, the to-be- remembered would be stored in distinct locations in memory and would thus be immune from interference and easily retrieved. Although the method of loci used by ancient orators provided an ordered placement of information within a mental image. Hugh of St. Victors system appears to be more strongly related to modern organizational mnemonic techniques such as categorical and schematic organization.

(Worthen and Reed Hunt,2011:4).

## **2.4 Elements of Mnemonic Network**

Building upon the insights of formal mnemonic systems, it has known as a mnemonic network, and it has been developed for second language acquisition. A mnemonic network is based on certain cognitive-linguistic principles that have been shown to facilitate the learning process, that is, attention, association, and imagination. The organizing principle of a mnemonic network is semantic ( Rather than associating to-be-remembered items with locations, as in the method of loci, or unrelated objects that comprise peg-words, target words are linked to core concepts in the learner's first language. In order to replicate native speaker acquisition, pronunciation of a word is learned along with its meaning before proceeding to reading and writing. Creating acronyms that indicate both the semantic and phonetic aspects of the target word is arguably the most effective way to accomplish this. The anchor of a mnemonic network is not a keyword, therefore, but an acronym, which encodes both the entire pronunciation of the target vocabulary word and a link (i.e., clue) to its meaning. The semantic connection is therefore not as attenuated as in the keyword approach, as shown in table(1) (paivio,1981:782).

## **2.5 Mnemonic Strategy Improves and Develops Students' Reading Comprehension**

Paivio (1981:17) stated that mnemonic and DCT plays an important role in reading comprehension. He added "DCT predicts that word concreteness and imagery value should be central variables in cognitive and educational tasks related to meaning. Empirically, concreteness and imagery value have been

measured by ratings of the ease with which words, sentences, or larger units of text evoke a visual, auditory, or other mental picture, or the degree to which they refer to tangible objects with concrete referents (concreteness)".

Horwitz (2008:120) stated that it is difficult to read an article or a story in students' first language without knowing what the story might be about. Learners can face difficulty in reading when they do not know what kinds of information to expect in their reading, also they cannot remember what they have memorized. For these reasons Horwitz added " the teachers' most important job is to help students activate their back ground knowledge immediately before reading by using mnemonics".

Reading depends on both decoding of words and understanding of ideas; therefore mnemonic activities remind students the information they already know. In addition, imagery mnemonic contains pictures which are intended to help students prepare for reading. By using mnemonic students can anticipate the type of information they will probably encounter and thus read more effectively (Ibid,121).

## **Section Three Procedures**

### **3.1 Experimental design**

Experimental design is "the blueprint of the procedures that enable the researcher to test hypotheses by reaching valid conclusions about the relationship between independent and dependent variables" (Best and Khan,2006:177). The experimental design of this study is called "the posttest only, Equivalent-Group design" as it shown in (Table 2). It includes the following steps:

1. Selecting two groups of students randomly.
2. Make equalization between the students of the experimental group and control group in some variables.
3. Managing the independent variable only to experimental group.
4. Teaching the control group according to the traditional way.
5. Subjecting the two involved groups of students to the posttest.

**Table(2)**

N	Groups	Dependent variable	Independent variable
1	Experimental Group	Mnemonic strategy	Reading comprehension
2	Control Group	Traditional method	

### 3.2 Population and Sample

The whole population of the present study includes 160 second year students of the Department of English at the College of Education of Human Sciences / University of Kirkuk, during the academic year 2018-2019. The students are grouped into three sections, A, B, and C. Section A and B have been selected randomly to be control and experimental groups whose total number is 106. Section A consist of fifty four students. Section B consists of fifty two students, while section C consists of fifty four students, fifty students of section C have been selected as a pilot study. Eight students are excluded from section(A) and six students are excluded from section(B). some of those students are repeaters and others are excluded because of their age. Thus, forty six students have been selected from section B as experimental group and forty six students from section A as a control group. Thus, the total number of the involved sample is ninety two students who represent 28.75 percent of its original population as shown in table (3).

**Table(3)**

#### The Population and Sample

Group of Students	No. of The sample before excluding	No. of Repeaters	No. of Largest age group students	No. of Sample
Experimental	52	2	4	46
Control	54	2	6	46
Total	106	4	10	92

The equalization between the two groups requires controlling the following variables which may cause a variance the students' achievement such as, their age, their general level in English reading comprehension(pretest) and their parents' educational level.

### **3.3 Instructional Material and Students' Instruction**

The material which has been taught to the experimental and control groups includes three passages. "**Your Negative Attitude can Hurt your Career**", "**When to use Female nouns**" and "**the Colorful World of Synesthesia**". The first passage "**Your Negative Attitude can Hurt your Career**" is written by Julia Cameron. The purpose of this article is to persuade and educate people how to be positive, the main idea of this passage is that people do not like to be around negative co-workers. The author said that it is ok to be positive in body language, speech, and facial expressions. the author also suggests that if you are feeling negative about your job try to make changes where you can. The second passage "**When to use Female nouns**" is written by Melissa Gilbert it talks about how we use feminine and masculine in English language and other languages, it also talks about paired nouns; such as "prince and princess", "duke and duchess" and so on. Gilbert mentioned some Gender-neutral nouns such as "flight attendent". Gilbert suggests that if there is a gender-neutral term in general, use it and remember that rules are just shortcuts what matters is getting across the messages you want to send and trying to block those you do not. The third passage "**the Colorful World of Synesthesia**" is written by Bryan Singer. The purpose of this article is to educate students that we do not live in the world of reality, we live in the world of how we perceive reality, and this sensation called Synesthesia. People with synesthesia experience a blending of their senses, so some see sound, smell colors, or taste shapes. Most synesthetes see numbers, letters, and days in specific colors. Singer added that in group of 200 people you can probably find one person with synesthesia. A lot of sensory processing of people happen in the cortex.

### **3.4 Construction of the Posttest**

An achievement test has been constructed by considering the contents and behavioral objectives of the instructional material. It consists of nine questions, and scored out of hundred, as shown it in table(9) . The first five questions measure students' achievement at the recognition level while the other last four questions measure students' achievement at the production level. The first question contains five multiple -choice items and one mark is specified for each item that encircle the correct option. Question two contains five items with

blanks to be filled with suitable words and scored out of five .Question three contains five true/ false items and scored out of five. Question four contains six items in list (A) with 5 completions in list (B) and scored out of five. Question five contains five items for giving the suitable synonym for the following words. Question six contains two items A and B, it is out of 15 marks. (A) demands students to write whether their first language have gender-specific nouns or verbs and giving examples, it is out of 10 marks, Whereas (B) demands adding the correct verb-forming suffix to turn each word into a verb, it is out of five marks. Question seven includes a passage to be summarized and given title by students, it is out of 20 marks. Question eight contains five questions from the text to be answered by the students, it is out of 20 marks four marks for each item. Whereas question nine is out of 20 marks contains two items ten marks for each item, demanding the students to Explain the meaning of the following statements depending on the passages that they have studied.

**Table(4)**

**The Specifications of the Contents and Behaviors of the Achievement-Test**

Level	No. Of Questions	Content	Behaviors	No. Of Items	Marks
Recognition	1	A text that the students should choose the correct answer	Encircle the correct answer	1 2 3 4 5	1 1 1 1 1
	2	Specific items from the text the students should complete it according to their understanding	Fill in the blanks with suitable words	1 2 3 4 5	1 1 1 1 1
	3	Contains sentences from the text, the students should understand it and write whether it is true or false	Write true or false in front of each item	1 2 3 4 5	1 1 1 1 1
	4	Words that the	Match the	1	1

		students should give them suitable definitions	items with their definitions	2 3 4 5	1 1 1 1
	5	Words that the students should give synonyms of them	Give the synonym of the following words or phrases	1 2 3 4 5	1 1 1 1 1
Production	6	The students should write down some examples to activate their grasping.	Share examples about gender specific nouns or verbs.	2	15
	7	Contains a text and the students should summarize it and give a suitable title in order to understand or mentally grasp the meaning	Write a brief summary for the given passage and give a suitable title	2	20
	8	Main idea question it covers passages that the students have studied	1 2 3 4 5	4 4 4 4 4	
	9	Inferential question in which the information is like a hint. The students should read the question carefully and write down what it means	1 2	10 10	

### **3.5 Scoring Schema of the Posttest**

Testees' answers are scored out of 100 . One mark is specified for each correct item or answer and zero for each wrong answer in the first five questions , i.e. at recognition level. Whereas at the production level, five marks are specified for each correct answer and zero to each wrong answer at the four question. Question six is scored out of fifteen "A" is scored out of ten marks, and "B" is scored out of five mark, one mark for each item. seventh question is scored out of twenty. Question eighth is scored out of twenty also, and question nine scored out of twenty marks . ten marks is specified for each item. The last three questions are scored by the committee in terms of a certain criteria, namely : vocabulary, grammar, idea, organization and the literary features. The papers were collected and scored by the researcher himself, after two weeks the researcher re scored the papers. The scores were compared for reliability.

### **3.6 Test Reliability**

Reliability is one of an important characteristic of a good test. A test is reliable if its degree of accuracy stays stable and consistent in each time is conducted with the same condition for the same sample of students (Veram and Beard, 1981: 86). The pilot sample of fifty students have been subjected to the same test twice within an interval of twelve days. The place ,time, and quietness of administration have been considered throughout the two occasions of the test. Cronbach's Alpha formula has been used to find out the correlation coefficient between the two sets of scores. results show that the correlation coefficient of reliability is 0.80 which is considered an acceptable degree.

## **Section Four Analysis of Data**

### **4.0 Introductory Note**

This chapter is allocated to the statistical analysis of the collected data and the discussion of the results in order to verify the following hypotheses:

1. There is no any significant difference between the mean scores of the experimental group's achievement and that of the control group in the posttest.
2. There is no any significant difference between the mean scores of students' achievement at the recognition level and that at production level.

3. There is no any significant difference between the mean scores of meals' achievement and that of the females in the posttest.

#### **4.1 Comparison Between the Achievement of the Experimental Group and that of the Control Group in the Posttest**

In order to find out whether there is any significant difference between the mean scores of the experimental group, and that of the control group in the posttest, both mean scores are obtained and compared. Results show that the mean scores of the experimental group is 81,413 and that of the control group is 69.652 By using the t-test formula for two independents samples the computed t-value is found to be 4.875 while the tabulated t- value is found to be 2.02 at the degree of freedom (44) and the level of significant (0.05), as shown in table(5).

This indicates that there is a statistical significant difference between the mean scores of the experimental group and that of the control group, and for the benefit of the former. This means that the achievement of the experimental group which has been taught by mnemonic strategy is better than the achievement of the control group which has been taught by the traditional technique. Thus, the first hypothesis is rejected.

**Table(5)**

**Means, Standard Deviation, and t-Values of the Two Groups On the Achievement Test**

Group	No. of Students	Means Scores	SD	T-Value		DF	Level of Significance
				Computed	Tabulated		
EG.	46	81.413	11.074	4.875	2.021	44	0.05
CG.	46	69.652	12.046				

#### **4.2 Comparison Between Students' Achievement at the Recognition Level and that at the Production Level**

The mean scores of the students' achievement at the recognition level and that at the production level of the experimental group in the posttest are



calculated and compared in order to find out whether there is a statistical significant difference between them. The obtained results show that students' mean scores at the recognition level is found to be 47.239 and that at the production level is found to be 33.67 The t-test formula for two related samples is used and results show that the computed t- value is 17.837 and the tabulated t-value is 2.014 at the degree of freedom (45) and level of significant (0.05), as shown in table (6)

This means that there is statistically significant difference in favor of production since the computed t-value(17.837) is higher than tabulated value (2.014) at df=45 and significant level=0.05. Therefore, the second hypothesis is rejected.

**Table (6)**

**Students' Mean cores and T-Values of the Experimental Group Recognition Level and Production Level**

Experimental Group	No. of Students	Mean Scores	SD	D F	T-Value		Level of Significance
					Computed	Tabulated	
Recognition	46	33.67	6.12	45	17.837	2.014	0.05
Production	46	47.239	6.12				

### **4.3 Comparison Between Males' Achievement and that of Females' Achievement in the Posttest**

The obtained mean scores of the males' achievement in the posttest is 68.142 whereas that of the and females' performance is 12.579. Then the t-test formula for the two independent samples is used to find whether there is any statistical

significant difference between the obtained mean scores of the two groups. The computed value is 0.324 which is found to be lower than the tabulated value 2.021 at the degree of freedom (44) and the level of the significance (0.05), as shown in table (7). Hence, the third hypothesis which states there is no statistical significant difference in the mean scores of students' achievement between males and females is accepted.

**Table(7)**

**Means, Standard Deviation, and t-Values of Males and Females' Achievement in the Posttest**

Group	No. of Students	Mean Scores	SD	T-Value		DF	Level of Significance
				Computed	Tabulated		
Male	7	68.142	9.83	0.324	2.02	44	0.05
Female	39	69.769	12.57				

**4.4 Discussion of the Results**

The obtained results indicate that the students of the experimental group is significantly better than the students of the control group in their achievement in reading comprehension. This means that mnemonic strategy is an efficient strategy for teaching English reading comprehension. Results of the present study also indicate that mnemonics played the same role of efficiency on students' achievement at both recognition and production levels, for male and female students. The improvement of students' achievement in English reading comprehension by using the mnemonics may be due to the following reasons :

1. The EFL university students find that the mnemonic strategy is enjoyable because they could choose their own members and activities.
2. Learners can remember information easily.
3. Students enjoyed mnemonic strategy because it allows them to express their own opinions freely, and thus stimulate their critical thinking and creative thinking.
4. Mnemonic strategy helps students to store information in the long-term memory and recall it when needed.

## **4.5 Conclusions**

In the light of the findings of the present study , the following points are concluded :

1. The achievement of the students of the experimental group is better than the students of the control group which indicates that those students have positively responded to the suggested technique and that mnemonic strategy is an effective technique that stimulates students' creativity in generating and organizing their ideas, encourages brainstorming, and arouses motivation by using images, key words, first letters and encoding information
2. Group exercises in class have helped the students to develop strategies for effective communication, generating ideas, managing conflict, managing personal and interpersonal stresses and better performance.
3. Using mnemonic strategy helps students to understand, organize and analyze all elements of reading comprehension in the best way.
4. Using mnemonic strategy Often enables information to be better retained in memory.
5. The use of mnemonic strategy is useful to improve the social interaction among students . The students share information , generate ideas, participate in the exercises and answer the questions freely.
6. University students show a positive response towards mnemonic strategy since it is easy and simple to design as well as exciting in use.
7. Mnemonic instruction helps students with intellectual and developmental disabilities learn unfamiliar content more easily.

## **4.6 Recommendations**

1. In teaching English reading comprehension , teachers are advised to focus on the procedures of mnemonic strategy rather than using the traditional methods to improve students' achievement.
2. Curriculum designers in the Ministry of Higher Education and Scientific Research are invited to adopt mnemonic strategy technique in teaching English reading comprehension.
3. Teachers of English reading comprehension should employ various instructional devices such as, charts , data show , mind mapping tool and films

inside the classroom, in order to simplify the presented texts and storm their students brains .

4. Teachers of English reading comprehension should encourage the students to speak, communicate and use English language inside classroom .

5. Teachers as well as the educators should focus on the dual coding theory in teaching reading comprehension i.e using verbal and visual processes.

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Level	No. of Questions	Levels of Bloom's Taxonomy	Number of Items	Mark Total	Percentages
<b>Recognition</b>	1	Application	5	5	5%
	2	Application	5	5	5%
	3	Knowledge	5	5	5%
	4	Application	5	5	5%
	5	Knowledge	5	5	5%
<b>Production</b>	6	Analysis	2	15	15%
	7	Synthesis	2	20	20%
	8	Analysis	5	20	20%

	9	Evaluation	2	20	20%
Total	6		27	100	100 %

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## Appendix

### The Percentage that the Test Questions Formulate in Terms of the Various Levels of Cognitive Behavioral Objectives

#### (Recognition Level)

**Q1 Choose the correct answer from the following sentences: (5m)**

1-.....is an adjective.

- a. anxious
- b. assume
- c. attitude
- d. mentally

2-Using a term like "authoress" to refer to female authors can cause problems because.....

- a. some people might not know the word
  - b. the term may become obsolete
  - c. it is not a common term
  - d. it suggests that female authors have lower status
3. If you normally have positive expectations you might consider yourself.....
- a. a pessimist
  - b. an optimist
  - c. feminist
  - d. realist
4. An equivalent noun pair like "prince" and "princess".....
- a. is always OK to use
  - b. is never OK to use
  - c. is not common in most languages
  - d. has gained currency recently
5. A lot of sensory processing happens in.....
- a. nerve fibers
  - b. the cortex
  - c. the axons
  - d. white matter

**Q2 Fill in the blanks with suitable words: (5m)**

( doctor, draw conclusions, ,gender-neutral, gifted programme ,antonym, obsolete )

- 1.....reach opinion or belief about something.
2. Nouns such as, teacheress, soldieress are called.....
- 3.....can be masculine or feminine.

4.....term like flight attendant are always acceptable.

5.....designed for exceptionally intelligent students.

**Q3 Put ( T)for the true sentence and( F)for the false sentence : (5m)**

1.Knowledge alone will not make a person creative.

2.The fact that most English words have many meanings support the idea that people do not communicate with words alone.

3.The gossip is a good habit.

4.One reason interviews cause job seekers so much anxiety is the need to make a favorite first impression.

5.The synonym of "confusing" is "strange".

**Q4 Write the number of the word and the letter of its appropriate meaning: (5m)**

1.techniques

a. particular ways of doing things

2.perspective

b. not very exciting or unusual.

3.manipulate

c. delayed.

4.common place

e. use or control something with skill.

5.postponed  
of view.

f. way that you think about something; or your point

**Q5 Give the synonym of the following words or phrases as they are used in the passages you have studied. (5m)**

1- took it for granted

2- analogous

3- tattletale

4- trimming head count

5- prunes

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**(Production Level)**

**Q6 Write on( A) and (B): (15m)**



**A. Does your first language have gender-specific nouns or verbs? Share some examples?**

**B. Add the correct verb-forming suffix to turn each word below into a verb:**

1.personal

2.length

3.moist

4.equal

5.active

**Q7 Read the article below then: (20m)**

**1.write a summary of it.**

**2.Give a suitable tittle.**

Over the past couple of decades, we have become more aware of danger of eating disorders. Two of the most common eating disorders are an orexia nervosa and bulimia nervosa. People with anorexia starve themselves and become dangerously thin but continue to think they are overweight. The starvation often causes damage to their hearts and kidneys and causes their bones to become brittle and easily breakable. Approximately 20% of people who suffer from anorexia die from their illness. People who suffer from bulimia binge, or eat excessive amounts of food, and then purge. The purging damages their teeth and throats. Bulimia can also results in heart failure, internal bleeding ,damage to the kidneys and liver, and death. The United States has the highest rate of eating disorders in the world. Because of this fact, many people believe that anorexia bulimia are strictly American diseases. they might be surprised to disorders can be found in Europe, Asia, the middle of East, and Africa.

**Q8 Answer the questions below from your textbook: (20m)**

1.Who is Lauren Milligan?

2.Why can habitual negativity become a problem?

3.Who is Edward Hubbard?

4. Why did Hurley and Chen get the idea for creating YouTube?

5. What is a common interview question?

**Q9 Explain the meaning of the following statements depending on the passages that you have studied. (20m)**

- 1- "The clichéd business advice of bringing your boss solutions, not problems, is actually true."
- 2- " We don't live in the world of reality; we live in the world of how we perceive reality."