

# The Effect of Mnemonic Keyword Strategy Instruction on Vocabulary Retention of Students with Learning Disabilities

Mohammad Abedrabbu Al-Khawaldeh<sup>1</sup> & Fadi Maher Al-Khasawneh<sup>2</sup>

<sup>1</sup>Assistant Professor of Special Education, Faculty of Education, King Khalid University, Abha, Saudi Arabia

<sup>2</sup>Assistant Professor of Applied Linguistics, Faculty of Languages and Translation, King Khalid University, Abha, Saudi Arabia

Correspondence: Fadi Maher Al-Khasawneh, King Khalid University, Abha, Saudi Arabia, P.O. Box 9100, Abha 61421, Asir, Saudi Arabia. E-mail: falkhasoneh@kku.edu.sa

Received: April 11, 2019 Accepted: June 3, 2019 Online Published: July 3, 2019

doi:10.5539/ijel.v9n4p138

URL: <https://doi.org/10.5539/ijel.v9n4p138>

## Abstract

The present study aimed at investigating the effect of teaching mnemonic keyword strategy on vocabulary learning and retention among students with learning disabilities in Asir region, Saudi Arabia. The participants of this study included 40 students with learning disabilities studying in the ninth grade in one of the middle schools in Abha, Saudi Arabia. These students were equally distributed into two groups (20 students in the control group and 20 students in the experimental group). Vocabulary achievement test (pre-test, post-test, and delayed test) prepared by the researchers to collect the data of this study. Also, the researchers designed 10 lessons to teach the experimental group keyword strategy, while the control group did not receive such instruction. The results of the study showed that there were no statistically significant differences between the control group and the experimental group in the pre-test of vocabulary achievement, while statistically significant differences were found between both groups in the post-test of vocabulary achievement in favor of experimental group. Furthermore, there were statistically significant differences between both groups in the delayed test of vocabulary achievement in favor of experimental groups either.

**Keywords:** Mnemonics, keyword strategy, learning disabilities, Saudi learners

## 1. Introduction

Vocabulary learning is a substantial part for students to success in their academic life and it is widely believed that vocabulary acquisition should be included in the syllabus design (Schmitt, 2008). Previous literature affirmed the connection between vocabulary learning and the language skills (i.e. reading, listening, writing, and speaking) and its vital role in academic success (Chang, 2006). Vocabulary retention is also a fundamental factor in learning a foreign language since learners need to retain the acquired words not only learn them (Thornbury, 2002). Remembering words depends heavily on the depth of processing those words (Bahrck, 1984). Consequently, different strategies have been suggested to facilitate vocabulary retention. One of the most significant strategies that facilitate vocabulary retention is mnemonic vocabulary strategy since it links the newly learned words to the learners' prior knowledge through using visual or acoustic cues (Thornbury, 2002). Mnemonic strategy instruction has been proven to have impact on students with learning disabilities (Conderman & Pedersen, 2005; Brigham, Scruggs, & Mastropieri, 2011). Mnemonic strategy instruction has been used in general and special education for decades; this strategy uses memory devices which assist learners to acquire new words and retain them for a long time (Mastropieri & Scruggs, 1991). Mnemonic keyword strategy is of the most effective strategies in teaching and learning vocabulary; it includes using both verbal and visual mental imagery to link the newly learned words with previously known knowledge (Meara, 1980; Nation, 2001).

### 1.1 Problem Statement

The focus of teaching English has long been on grammar and the instruction of vocabulary was ignored; specialists believed on the importance of mastering grammar before focusing on any other language skills (French, 1983). Teachers think that vocabulary meaning can only be learned through experience and it is difficult to teach it in the classroom. The recent research indicates that vocabulary is a crucial skill and it is deserved to investigate vocabulary instruction and its impact on developing language skills (Foil & Alber, 2002).

Khalafi and Oroji (2016) point out that learners should be instructed on how to specify word knowledge and get better understanding of words and their meanings. Keyword strategy is one of the important strategies that can help learners to achieve that purpose. It assists students to make meaningful words and create conversations without the fear of forgetting words (Khalafi & Oroji, 2016). Students with learning disabilities are said to have limited vocabulary knowledge, and this limited knowledge leads to cause difficulties in their learning of English language skills (Heatherbell, Dicey, Goldworthy, Vanhanen, & Henickkling, 1996). Students with learning disabilities lack the ability to read and their limited knowledge of vocabulary is attributed to the insufficient memorization strategies. These students easily forget newly learned words and vocabulary acquisition is highly related to poor memory abilities (Amiryousefi & Ketabi, 2011). The extensive review of literature has revealed limited concentration on studying the effect of keyword strategy on students' vocabulary retention. More specifically, very few studies shed lights on such effect among students with learning disabilities in Saudi context. Therefore, this study aims at identifying the effect of mnemonic keyword strategy instruction on vocabulary retention among Saudi students with learning disabilities. The results obtained from the present study could contribute in drawing the attention of EFL teachers and learners towards the importance of keyword strategy in enhancing learning and retention of newly learned words. It also contributes in developing specific activities suitable for students with learning disabilities, which could improve the learning and retention of new vocabularies. Explicit instruction could be integrated in the teaching curriculum of this specific group (students with learning disabilities) to enhance long-term vocabulary retention.

## 2. Literature Review

### 2.1 Vocabulary Instruction and Learning

Vocabulary instruction is very important in teaching foreign languages. There is an increasingly demand for more vocabulary instruction for students from different grades (Souleyman, 2009). The knowledge of words meanings is highly associated with effective vocabulary instruction (Butler, 2007). Bromely (2002) states guidelines for teachers to effectively vocabulary instruction as follows:

- a) Show an attitude of interest and excitement about language and words.
- b) Assess student knowledge and the word 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.
- i) Do not overlook the internet as a way to motivate word learning.

Teaching vocabulary can be done through two strategies: direct/explicit instruction and indirect/implicit instruction. Explicit instruction involves teaching certain words directly by providing the meanings of those words, while implicit instruction includes teaching vocabulary indirectly through different strategies; extensive reading is one of those strategies (Corbett, 2009). Both direct and indirect strategies are important in vocabulary instruction with relatively higher importance for direct teaching (Bastanfar & Hashemi, 2010). The researchers in the present study focused on explicit instruction/direct strategy as the participants included students with learning disabilities. Similarly, learning vocabulary involves direct and indirect strategies. Direct learning includes explicit instruction of specific word-learning strategies, while indirect learning strategy involves learning through students' daily life experience with written and oral language (Robson, 2009). Direct learning strategy has a great advantage of deep vocabulary learning since it draws the learners' attention to various aspects of words such as phonological, orthographical, syntactic, morphological, collocations and semantic aspects (Perhan, 2008). Laufer (2005) argues that explicit instruction is recommended in learning vocabulary for many reasons. The first reason is that students are not serious to get the exact meaning of a word in reading texts. Secondly, learners need to know 95%–98% of text words to comprehend it, so guessing meaning from contexts is not reliable especially if students do not possess that amount of vocabulary size. Thirdly, the new learned words need to be introduced again in quick time to avoid being forgotten. Hence, the direct teaching of vocabulary is more beneficial for school students rather than tertiary students since they have a considerable amount of vocabulary, which allows them guess meanings from context. The researchers of this study have chosen the direct strategy as the participants are students in the middle school with learning disabilities.

## 2.2 Vocabulary Retention

Merriam Webster Dictionary (2019) defines word retention as “a preservation of the aftereffects of experience and learning that makes recall or recognition possible”. Richards and Renandya (2002) defines vocabulary retention as “the ability to recall or remember things after an interval of time” (p. 80). Mohammad (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”. Learners should analyze the newly learned words not only learn them; they should go deeper of the connection between word form and its meaning in order to retain the meanings of words (Carik & Tulving, 1975). Nation (2001) argues the significant processes of vocabulary retention. These processes include noticing, retrieval, and creative use. He defines noticing as giving attention to newly faced vocabulary; this attention could be paid through learners’ interest and motivation. Retrieval process involves the ability to remember the word during the task, while creative use includes using the newly learned word in context with its various meanings and functions. The retention of word meaning is highly correlated with learner’s ability to remember. Mnemonics strategies are highly recommended to enhance the student’s ability to memorize and keyword strategy is one of the paramount mnemonics strategies.

## 2.3 Keyword Strategy

Keyword strategy is considered as an important way of facilitating the connection between the word form and its meaning; it is also used to learn a second or a foreign language such as English, Chinese, French, and Spanish (Nation, 2001). Weiland (1990) argues that the keyword strategy contains a two-step process: a perceptual link and a semantic link. The perceptual process links between the foreign word and the native word (the keyword) which represents the foreign word. In this process, the learner is given a native word which partially constitutes acoustic or orthographical portion of the foreign word. The semantic process includes connecting the native keyword meaning and its equivalent in the foreign word in certain ways such as mental or visual image of words. In a similar vein, Nation (2001) mentions that the keyword strategy includes two steps of learning vocabulary. The first step involves thinking of the native word (the keyword) that looks like the initial part or all parts of obscure foreign language word. The second step includes thinking of certain visual image where the meaning of both unknown and known word is consolidated. Hauptmann (2004) points out that the keyword is characterized by particular features. It should be phonetically similar to the foreign word, the association between the keyword and target word should be unique, the sensory nature should be included in the visual image such as movements, tasting, sounds, and smells. In addition, interactivity, simplicity, creativity, involvement of both words (native and target word) are also very much important in keyword strategy.

## 2.4 Previous Studies

A number of research (Whitescarver, 2018; Fasih, Izadpanah, & Shahnava, 2018; Al-Lahham, 2016; Khalafi & Oroji, 2016) have been conducted to investigate the effect of mnemonic keyword strategy on vocabulary learning and retention among ESL/EFL learners. Whitescarver (2018) studies the effectiveness of mnemonic devices on vocabulary acquisition and retention of high school students with learning disabilities. The participants of this study included six students, two female students and four male students. The single-subject ABAB design has been used to teach students how to acquire and retain vocabulary. The results showed that the mnemonic device has a positive effect on students’ acquisition and retention of words. In addition, the survey administered after instruction revealed good rating of enjoyment and easiness of using the mnemonic design. Fasih, Izadpanah and Shahnava (2018) investigated the effect of mnemonic vocabulary instruction on improving content word learning. The subjects of this study contained 230 students from 6 high school students in Zanjan, Iran. Quasi-experimental design was employed to investigate the effect of mnemonic explicit instruction on content vocabulary learning. There were one control group (115 students) and one treatment group 115 students. The instruction lasted for four weeks in two thirty-minute sessions in a week. The results showed that vocabulary instruction has positively affected the learning of content vocabulary among students. Al-Lahham (2016) examined the relationship between keyword-based teaching and English vocabulary retention. The participants of this study encompassed 78 who study in eighth grade in Palestine. The quasi-experimental design was adopted in this study, in which two groups were assigned, one control group (38 students) and one treatment group (40 students). The researcher of this study designed 8 lessons based on keyword strategy which were used to instruct the treatment group, while control group has not received such instruction and only received the conventional method of teaching. The results of this study revealed statistically significant differences between the control group and the treatment group in the post-test scores of the vocabulary achievement test. The treatment group surpassed the control group in that test due the explicit instruction of vocabulary given to that group. Khalafi and Oroji (2016) studied the effect of teaching keyword strategy on vocabulary learning among Iranian intermediate EFL learners. The sample of this study involved 40 female

students selected from one English Language Institute in Iran. The sample was equally divided into two groups (i.e., control group and experimental group). The researchers of this study provided a booklet with English words with their Persian keywords to the experimental group, while the control group has not been provided with such booklet. The results of this study showed that the keyword strategy had a positive effect on students' vocabulary learning and retention. The students stated that using keyword strategy makes learning words more interesting which, in turn, motivates students for learning vocabulary.

### **3. Method**

#### *3.1 Research Design*

The present study adopted the quasi-experimental design which involves two groups (i.e., experimental group and control group). The experimental group has received the explicit instruction of keyword strategy, while the control group has received the traditional method of teaching. The present study includes three variables: the independent variable (keyword strategy), the first dependent variable (vocabulary learning), and the second dependent variable (vocabulary retention). The instruction process lasted for eight weeks and both groups have been taught by the researcher.

#### *3.2 Participants*

The participants of the present study contained 40 students with learning disabilities as diagnosed by the Directorate of Education in Asir region, Saudi Arabia. The control group which consisted of 20 students and the experimental group which also consisted of 20 students. The participants of the present study were randomly selected from the ninth-grade classes and equally distributed into two groups.

#### *3.3 Instrumentation*

To achieve the objective of this study, vocabulary achievement test has been administered to students. A pre-test was used to check the students' vocabulary level and a post-test was administered to check the students' improvement in vocabulary learning, while a delayed test was used to check the students' ability to retain the newly learned words. The test has been developed by the researchers and it contains 20 words which were phonetically similar to the Arabic keywords. The test has been sent to experts in English language teaching and curriculum design in King Khalid University. The test items have been modified due to the experts' constructive feedback. The reliability of the test has been checked through using Cronbach Alpha value, which was .899 and this indicates a good reliability value.

#### *3.4 Data Collection and Analysis*

The vocabulary achievement test was piloted with a group of 15 students from outside the sample of this study. The main purpose of the pilot tests was to have an idea about the suitable time to allocate for completing the test and to check the test reliability as well. The students needed 90 minutes to complete the test. For the main study, the test was administered to students during their normal classes in the 5th week of the first semester in 2018/2019 academic year. The researchers have designed 10 lessons of keyword strategy to teach the experimental group, while the control group did not receive any kind of instruction. The students had been instructed about the objectives of the study and the test will not affect their total mark in their courses. In addition, they had been informed about the way of completing the test by giving examples before the commencement of the official test. The researchers have occasionally helped the students to read some questions since some of them had reading disabilities. The Statistical Package for Social Sciences (SPSS) version 18 was used to analyze the data of the present study. Descriptive statistics were employed to show the mean scores of the two groups in the pre-test and post-test. Paired Samples T-Test was used to check the statistical differences of mean scores between control and experimental groups, while Paired Samples T-Test was also used to show the statistical differences between the post-test and the delayed test of the experimental group.

### **4. Results**

This section presents the results obtained to show the statistically significant differences between the control group which did not receive keyword strategy instruction and the experimental group which receives the instruction.

#### *4.1 Pre-Test of Vocabulary Achievement*

The pre-test was administered to check the statistical differences between students before embarking with the treatment. Independent Samples T-Test was used to achieve this purpose (see Tables 1).

Table 1. Independent samples T-Test of vocabulary Pre-Test

	Group	N	Mean	Std. Deviation	T-Value	Sig.
Test	Control	20	6.75	2.881	1.716	.194
	Experimental	20	8.30	2.830	1.716	

As revealed in Table 1, the mean score of the experimental group was ( $M = 8.30$ ,  $Std. Deviation = 2.830$ ), while the mean score of the control group was ( $M = 6.75$ ,  $Std. Deviation = 2.881$ ). The Independent Samples T-Test showed no significant differences between the control group and the experimental group in the pre-test of vocabulary achievement ( $\alpha \geq 0.05$ ).

#### 4.2 Post-Test of Vocabulary Achievement

This section presents the results obtained to check the statistical differences between the control group and the experimental group after the explicit instruction of keyword strategy (see Table 2).

Table 2. Independent samples T-Test of vocabulary Post-Test

	Group	N	Mean	Std. Deviation	T-Value	Sig.
Test	Control	20	6.30	2.792	8.148	.047
	Experimental	20	12.40	1.846	8.148	

As shown in Table 2, the mean score of the group was ( $M = 6.30$ ,  $Std. Deviation = 2.792$ ), while the mean score of the experimental group was ( $M = 12.40$ ,  $Std. Deviation = 1.846$ ). The Independent Samples T-Test showed statistically significant differences between the control group and the experimental group in the post-test of vocabulary achievement ( $\alpha \leq 0.05$ ).

#### 4.3 Delayed Test of Vocabulary Achievement

This section presents the results obtained to check the statistical differences between the control group and the experimental group in the delayed test of vocabulary achievement (see Table 3).

Table 3. Independent samples T-Test of vocabulary Delayed-Test

	Group	N	Mean	Std. Deviation	T-Value	Sig.
Test	Control	20	6.85	2.109	10.742	.036
	Experimental	20	13.00	1.450	10.742	

As shown in Table 3, the mean score of the group was ( $M = 6.85$ ,  $Std. Deviation = 2.109$ ), while the mean score of the experimental group was ( $M = 13.00$ ,  $Std. Deviation = 1.450$ ). The Independent Samples T-Test showed statistically significant differences between the control group and the experimental group in the delayed test of vocabulary achievement ( $\alpha \leq 0.05$ ).

## 5. Discussion

The main purpose of the present study was to investigate the effect of keyword strategy instruction on vocabulary learning and retention among Saudi ninth grade students with learning disabilities. The results revealed that teaching keyword strategy has a positively significant effect on the students' vocabulary learning and retention in favor of the experimental group. Meaning that, the explicit instruction of keyword strategy contributes to activating the students' previous knowledge and retention of newly encountered words. The results of the present study in line with many prior research works that confirmed that positive effect of keyword strategy instruction on vocabulary learning and retention (Whitescarver, 2018; Fasih, Izadpanah, & Shahnava, 2018; Al-Lahham, 2016; Khalafi & Oroji, 2016). The results showed that the experimental group outperformed the control group in the post-test of vocabulary achievement, and this proves the positive effect of keyword strategy instruction on vocabulary learning. This result might be attributed to several reasons. First, the explicit instruction of keyword strategy offered vocabulary learning in a catchy and interesting manner especially for this particular kind of students (students with learning disabilities). Second, the nature of the various lessons that have been presented in the explicit instruction contribute to decreasing the boredom feeling among the students. Third, using pictures plays a vital role in vocabulary learning and retention since students find it innovative method of teaching vocabulary. Finally, the explicit instruction of keyword strategy provides the opportunity for

students to connect the word form with its meaning in a way that contributes to use the working memory capacity, and then perform well in the achievement test of vocabulary (Al-Lahham, 2016). In addition, the results revealed that there was statistically significant difference between the control and the experimental group in the delayed test of vocabulary achievement. In other words, the explicit instruction keyword strategy had a positive effect on vocabulary retention; it transferred vocabulary learning from short-term memory to long-term memory. This result could also be referred to the variety of ways in presenting the new vocabulary such as interactive pictures, visual presentation, and sound files, which have not been used with the control group.

## 6. Conclusion

The results of the present study concluded the important role of including keyword strategy in learning and retaining vocabulary. Using keyword strategy contributes in enhancing the students' motivation towards learning vocabulary due to the various methods of presenting new words. In light of these results, teachers and curriculum designers should be aware of the importance of teaching keyword strategy since it assists in enhancing vocabulary learning among students with learning disabilities. Future research works are highly recommended to replicate this kind of studies to get more insights of the role of keyword instruction on vocabulary learning and retention. It is also recommended to conduct further studies that investigate the effect of keyword strategy instruction on enhancing language skills such as reading, listening, writing, and speaking among students in general and among students with learning disabilities in particular.

## Acknowledgment

This study was sponsored by the Research Group Program of the Scientific Deanship at King Khalid University, Kingdom of Saudi Arabia (R.G.P.IL105L40).

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