

# The Use of Word Association in Learning/Expanding Vocabulary Knowledge by Iranian EFL Learners

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**Abstract** – The current study investigated the relationship between vocabulary size and word association knowledge in the Iranian EFL context. In tandem with the main underlying tenets of the investigation, the researchers strived to find whether instruction through word association offers any potential advantages as to the Iranian EFL learners' retention and expansion of vocabulary knowledge. To this aim, 50 senior EFL learners were initially given a vocabulary level test (2k, 3k, 5k, and the university word level) to gauge their vocabulary size. Having examined the learners' vocabulary size, a word association test was given to the testees to examine their word association knowledge more deeply. Afterwards, a questionnaire was given to the testees in order to further investigate the ways and techniques learners use in associating different words to particular words. Finally, some testees were interviewed in order to elicit any other individual techniques employed by the learners. The analysis of word knowledge and word association tests indicated that word association as a technique has a positive and effective role in learning or expanding vocabulary knowledge. The results obtained from the questionnaire further revealed that learners made use of word association technique more than other ones in learning or expanding their knowledge of vocabulary. In addition, the analysis of the interviews substantiated the gained upshots, in that word association was found to be one of the mostly utilized techniques by the learners in the process of vocabulary learning.

**Keywords** – Vocabulary Learning Techniques; Word Association; Word Knowledge

## 1. Introduction

### 1.1. Background

Vocabulary is central to communicating in a foreign language. Without sufficient words to express a wide variety of meanings, communicating in a foreign language cannot happen in a meaningful way (McCarthy, 1990). Hunt and Beglar (2005, p. 2), argue that “the heart of language comprehension and use is the lexicon.” Other authors have gone even further in arguing that “the single most important task facing language learners is acquiring a sufficient large vocabulary” (Lewis, 2000, p. 8), or that “the most striking differences between foreign learners and native speakers is in the quantity of words each group possesses” (Laufer, 1998, p. 255).

It seems that one of the ways which can be used to expand vocabulary knowledge is word association technique. As regards the importance of word association technique, Richards, Platt and Platt (1992) contend that it is an efficient technique via which one can achieve a wide range of vocabulary knowledge; it can also help language learners support the long-term retention of vocabulary. Word association, as a way in which words are associated with one another, helps language learners learn,

retain and remember vocabulary items more efficiently. Richards and Platt (ibid) claim that 'association' is the first level of word knowledge processing via which words are linked to synonyms, definitions, or different contexts, and the next two levels are referred to as 'comprehension' and 'generation'. Hence, it can be conferred that for a word to be fixed in a learner's mental lexicon, it needs to have associations with other words, sounds, or even pictures already acquired.

### 1.2. Statement of the Problem

"Without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (Wilkins, 1972, p. 111). People have attempted to learn second languages from at least the time of the Romans, and perhaps before. In this period of more than two thousand years, there have been numerous different approaches to language learning, each with a different perspective on vocabulary. At times, vocabulary has been given pride of place in teaching methodologies, and at other times neglected. One thing that all of the partners involved in the learning process (students, teachers, materials writers, and researchers) can agree upon is that learning vocabulary is an essential part of mastering a second

language. Maybe that is why we usually carry dictionaries rather than grammar books everywhere we go.

Given the difficulties of vocabulary learning in a second or foreign language (L2), along with the obvious necessity of trying to overcome them, one would expect that vocabulary instruction would be at the top of the agenda for language teachers. However, the opposite is often the case. Vocabulary is not explicitly taught in most language classes, and students are expected to 'pick-up' vocabulary on their own without any guidance. Courses on reading, writing, speaking, listening, grammar, and culture are common in L2 programs, but very few vocabulary courses exist. Many instances of so-called vocabulary instruction involve merely giving students lists of words to memorize or providing limited practice opportunities, with no further assistance to the often overwhelmed learners. Hague (1987) and Carter (1987) both decry the neglect of vocabulary instruction in L2 classes, and suggest a variety of possibilities for rectifying the situation. After all, vocabulary has a brilliant role in learning a language, without knowing enough words you cannot speak well.

One of the prerequisites of efficient vocabulary learning is being fluent in using the vocabulary. Also, knowing a word well depends on how it relates to the learners' previous knowledge. The relation of our vocabulary to the previous word repertoire is possible when we know many words and a wide range of associative words. We should bear it in our mind that our knowledge of vocabulary is not static: words known one day can be forgotten the next, while words not known today may be easy to bring to mind tomorrow (Meara and Sanchez, 2001).

Drawing on the importance of vocabulary knowledge, in general and the application of sound and efficient techniques for expanding one's vocabulary repertoire, in particular, the current study is after investigating the potential effect of word association – as a fruitful vocabulary learning technique – on Iranian EFL learners' word knowledge expansion.

Therefore, to be able to come up with a satisfactory explication as to the main postulation of the research, the following research questions were formulated:

Q1: Does instruction through word associations offer potential advantages to the Iranian EFL learners?

Q2: Do word association techniques contribute to learning/expanding vocabulary knowledge?

Q3: Are the students aware of vocabulary learning techniques, especially word association, among other techniques?

### 1.3. Significance of the Study

Vocabulary is central to communicating in a foreign language. As such, vocabulary acquisition is a primary concern for foreign language learners, and

it is the focus of their interest and attention. The long-neglected Cinderella – vocabulary – has received more and more attention in second language (L2) teaching and research since the 1980s (Yuping, 2010). "Teaching or studying grammar is based on a set of rules with a coherent structure, which students follow or remember, but the same is not true of vocabulary" (Maignashca, 1993, p. 91). Within the last few years, vocabulary has been viewed as an important aspect in second language learning; in fact, many believe just as important as the main skills of reading, writing, listening, and speaking. Paul Nation (1997, p. 6) explains, "Vocabulary knowledge enables language use, language use enables the increase of vocabulary knowledge, and knowledge of the world enables the increase of vocabulary knowledge and language use and so on."

In addition to the importance of vocabulary, word association is also one of the major subjects studied in linguistics, psychology and psycholinguistics. According to Richards et al. (1985), word association is a way in which words come to be associated with each other, and which influences learning and remembering of words. As Sinopalnikova (2003) states, the term association is used in psycholinguistics to refer to the connection or relation between ideas, concepts, or words, which exist in the human mind and is manifested in the following way: an appearance of one entity entails the appearance of the other in the mind. Thus, it can be inferred that, word associations can show the familiarity effect, that is responses are faster to familiar words and if a word has been presented before, it takes a shorter time to respond to that word.

Though a plethora of investigations have, thus far, been carried out on the significance of word association in varied facets of learning, no research, to date, has been done on the usefulness of this highly productive technique in the Iranian context (as far as the researchers' knowledge lets them claim). With regard to the fact that vocabulary constitutes a core component of language proficiency (Richards & Renandya, 2002), a close scrutiny is called for to come up with a clear-cut view as to what procedures and techniques are liable to lead to an ameliorated retention rate of vocabulary. Thus, in an attempt to somehow compensate for this paucity of research on the issue at hand, i.e. word association and its implications for vocabulary learning, the current study seeks to pinpoint the potential effect of this vocabulary acquisition technique on Iranian EFL learners' vocabulary learning process.

## 2. Literature Review

### 2.1. Word Association

The use, effect, and application of word association have been investigated in different disciplines. Research has shown that using associations is more effective than only rote memory for learning vocabulary or other techniques such as

explicit definitions and inferring word meaning from context (Bai, 2005; Cunningham, 1990; Machalias, 1991; Meara, 1978, 1994; Palmberg, 1990; Soderman, 1993; Vasiljevic, 2008; White, 1988).

Word association involves making associations between the new word or concept and the words or concepts already in the learner's memory, thus creating some context for the learner. The theory is that as long as these associations are meaningful to the learner, they will strengthen the learner's existing schemata and at the same time make the new word more accessible (Crookall & Oxford, 1990).

As Wright (1987, p. 53) puts it "the associations can be simple or complex, ordinary or strange, as long as they are significant to the learner. The learner of English may associate *bread* with *butter* using semantic, auditory, and possibly visual associations." Furthermore, as he claims, "associations can also be in the form of a multipart development, moving from one concept to another, such as *school-book- paper-tree-country-earth*."

Word association can involve making links among items listed in a finite group of new words, thus providing the basis for subdividing and rearranging the group based on certain associative attributes, such as part whole. Alternatively, word association can reflect more divergent thinking, in which the learner creates new associations between a new word, e.g., *tyrannical*, and any personally meaningful word or concept, which is not in the list of new words, e.g., *my mean old Aunt Louise* (Crookall & Oxford, op.cit.).

Word association tasks, in which the teacher asks the students to make new associations, can be used for diagnosis of what students already know and what they need to learn. Students' initial associations might be about synonyms, antonyms, reverses, attributes, definitions, superordinates, subordinates, personal experiences, sound similarities, and so on (Carrell, 1984). Cohen and Aphek (1986) studied the use of mnemonic associations and found that although these devices sometimes slowed down or limited possible meanings, they made vocabulary learning easier and longer lasting.

Word associations, embodying the connections that learners hold in their minds, are an important part of word knowledge (Richards, 1976), and as such, play an important role in vocabulary acquisition. In addition to the valuable input they provide, word associations can also constitute output useful for the investigation into how well learners know specific words and how learners' word knowledge changes over time.

Related words reinforce one another's meanings and so we *understand* words to the full in association with other related words. Psycholinguists say that they tend to *keep close* to each other in the mental lexicon, and that we may get the most of their meaning and recall them more easily when placed within a context, which illustrates their whole scope of their deepest meaning. For example, Moon (1997) explains that we can hardly think or talk about *wind* without saying that it *blows*. Hatch & Brown (1994)

have also illustrated such relations with *tree*, which is linked by extension to other instances of individual trees such as: elm, pine, willow, oak, etc. and by intention, *tree* is linked to attributes or features which characterize it such as; root, branches, leaves, trunk.

Garman reports that, meaning association is a key aspect to semantics. What he says is as follows:

Meaning association is a key aspect to semantics. These mental connections may go from very basic facts and relations (synonyms - antonyms) to very advanced and sophisticated analogies, which set the ground for figurative language and metaphors. This cross-reference meaning associations have been recorded by 'relational theories', which have been drawn after psycholinguistic studies such as slips of the tongue (*right for left, door for window*), closely related terms priming (*doctor-nurse*), the 'tip of the tongue phenomenon', and others (Garman, 1991, p. 46).

In the current study, the researchers' attempt to find out the positive effects of word association and its rank among other techniques, based on the choices made by the learners, in learning/expanding vocabulary knowledge. Now that part of the theoretical foundation of the study has been set, some account is to be given, at this juncture, regarding the empirical body of research done on word association.

## 2.2. Empirical Studies Related to Word Association Technique

In an early probe into the usefulness of word association, White (1988), worked on the role of associational patterns and semantic networks in vocabulary development in L2. He argues that teaching methods that exploit word association structure may be an efficient way of teaching vocabulary.

Palmberg (1987) also had a research on improving foreign language learners' vocabulary skills. Palmberg briefly reviewed current thinking on the development of vocabulary in an L2, and outlined a number of activities based on word associations, which could be used to enhance lexical control.

Machalias (1991) has worked on semantic networks in vocabulary teaching and their application in the foreign language classroom. Machalias provides a brief discussion of word associations in L2 learners, and goes on to describe a dozen ways of exploiting semantic networks for vocabulary learning in classrooms.

Vasiljevic (2008) has studied teaching vocabulary to advanced Japanese students by using the word association approach. In the study, he examines the effectiveness of three different approaches to vocabulary instruction in an advanced reading class: word associations, explicit definitions, and inferring word meaning from context. It is a small-scale experiment focused on advanced adult Japanese learners of English who had limited contact with the target language. The three approaches were evaluated based on their contribution to the growth of both

receptive and productive word knowledge. Data collected and the analysis of mechanisms behind the three approaches suggest that instruction through word associations offers potential advantages to high-level learners, which are reflected primarily in the quality of L2 vocabulary knowledge.

Cunningham (1990) conducted a word association research on two groups of pupils whose native language was Irish and found that the group with more English input provided more paradigmatic responses and less phonological responses. A study by O’Gorman (1996) shed further light on this issue. Her data were collected from L2 word association test responses of 22 Cantonese speakers whose English was in the intermediate level. In this investigation, O’Gorman expected to find evidence in support of Meara’s view, but her data turned out the opposite way—most responses had clear semantic links with relevant stimuli.

Soderman (1993) carried out a word association experiment on English learners whose native languages were Finnish and Swedish respectively and found that each lexical item had its own processing history. What is more, she also indicated that the syntagmatic paradigmatic shift might not be caused by learners’ language proficiency because her experiment showed that high-proficiency learners’ responses, especially the responses to low-frequency stimuli, also included a large number of clang while there were also quite a number of paradigmatic responses among low-proficiency learners’ responses.

Finally, Bai (2005) carried out an empirical study among his non-English-major postgraduates. He discovered that L2 mental lexicon is more unstable than that of L1 and that unfamiliar words induced clangs or no association in students’ mind.

### 3. Method

#### 3.1. Design and Procedure

In order to seek answers to the research questions posed in the study, a three-phased research design was developed that included both quantitative and qualitative elements. The quantitative part of the study, with the help of surveys, sought to focus on the word associations of the participants and its effect on their word knowledge. Moreover, this part is used to classify vocabulary learning techniques and thus to identify their ranks among the participants who use them. Whereas, the qualitative part, consisting of semi-structured interview sessions, provides more insights into other possible vocabulary learning techniques, the participants may experience.

The quantitative phase of the study sought to answer all the three research questions of word association’s potential advantages to the EFL learners, its contribution to the learning/expanding vocabulary knowledge, and finally students’ awareness of vocabulary learning techniques, especially, word association. In doing so, two different tests were designed and administered to the participants of 50 university students. The two tests

were a 45-item word association test and a word knowledge test consisting of four parts, a 2000 W, a 3000 W, a 5000 W, and Academic Words. The participants (N = 50) took the two tests at different times and the first and second research questions were taken into consideration. For the first research question, the correlation between the two tests was calculated in order to see whether there are any relationships between them and if there is any, how significant it is.

For the second research question, the collected data for word association test were ranked in three levels based on the minimum and maximum scores received by the participants in the test and from these three levels, the participants were classified as weak, average, and good performers. After that, their received scores in vocabulary level tests were put next to their word association test scores and then compared. To respond the third research question, quantitative and qualitative procedures were applied. Quantitatively, a questionnaire and qualitatively, a semi-structured interview was administered. The results of the questionnaire were analyzed by SPSS software and the recorded interview was reviewed several times to extract the required parts.

Data collection was organized in two phases. In the first phase, the quantitative data were gathered using two tests, namely, vocabulary levels test version 2, and word association test along with a vocabulary-learning technique questionnaire. The students were asked to write down their names on the tests and the questionnaire because some of them were to be summoned randomly for subsequent interviews considering their performances in the tests. The participants’ answers were subjected to statistical analysis (described in the data analysis section). Some weak, average, and good performers (5 from each group) were asked to participate in interviews. The objective of this second phase was to gather qualitative data concerning any other vocabulary learning techniques along with the ones included in the questionnaire. Interviews were conducted, recorded, and transcribed. The data gathered in the interviews were finally analyzed and categorized.

#### 3.2. Participants

A total of 62 language learners took part in this study. After analyzing the data, 50 people from different proficiency levels could get the pass and were selected. The subjects were randomly selected from the senior English majors (TEFL) from Azar-Abadegan University in Urmia. The participants’ native languages were Turkish, Kurdish, and Farsi and none of them had been to an English-speaking country.

Since the focus was on the effect of association on learning or expanding vocabulary knowledge, the sex and age variables of the students were not controlled. Both male and female students were randomly included in this study without paying attention to the

number of each sex; also, the participants belonged to different age groups ranging from 22 to 25 years old.

### 3.3. Instruments

To gather the required data in order to answer the research questions, the 2000, 3000, 5000, and the university word-level tests along with the word association test were administered to the subjects. The 10,000 word level test was not used since it contained the least frequent words that might be found very difficult to be used even by the advanced learners. In addition, semi-structured interviews were also conducted. The vocabulary levels test version 2 (2000, 3000, 5000, Academic) is devised by Schmitt, et al. (2001). It is composed of five different word frequency levels, i.e. 2000, 3000, 5000, University Word Level, and 10,000. The test employs word-definition-matching format. There are 60 words and 30 definitions in groups of six and three, respectively at each of the 5 levels.

The word association test was taken from Kent-Rosanoff Word Association List (1910). From the list, 45 stimuli words were selected randomly. The participants were given a list of 45 words with four blank spaces. They had to fill in each blank with the first English word that they thought of when they read the words. For taking this test, the subjects had 25 minutes. As Schmitt (1997, 2000) states, asking for multiple responses gives the subjects additional chances to supply these more typical associations, and thus may well be a fairer measure. Providing multiple typical responses would supply a more convincing illustration that the stimulus word is incorporated into the subject's lexicon in a way similar to a native speaker.

The vocabulary learning techniques is a 12-item Likert type questionnaire trying to identify the participants' awareness of vocabulary learning techniques. The items in this questionnaire are extracted from vocabulary learning: a critical analysis of techniques (Crookall & Oxford, 1990). The participants were supposed to check *Never*, *Seldom*, *Average*, *Much*, and *Too much* for each of the 12 items (techniques) to specify which technique(s) they tend to use more and which ones less. These were identified through ranking the techniques with the number of responses for each one. For the ease of reading, understanding and providing appropriate responses, the questionnaire was translated into Persian language.

Moreover, in order to increase the validity of the results, semi-structured interviews were carried out to support and complement the data based on which the findings were reported. The interview process was performed in Persian. Interviews can provide access to things that cannot be directly observed, such as feelings, thoughts, intentions or beliefs; also, they provide participants with opportunities to select, reconstruct, and reflect upon details of their experiences within the specific context of their lives (Merriam, 1998, as cited in Ohata, 2005).

### 3.4. Data Analysis

SPSS (version 11.5) was used to analyze the quantitative data obtained from the vocabulary levels test version 2, word association test, and the vocabulary-learning technique questionnaire. The first scale administered in the quantitative phase of the study was vocabulary levels test version 2. For the analysis of responses given to this test, a value of 1 is given to each correct response, that is, each set, if all are correct, gets 3 marks and the overall score for each level is 30.

The second scale was word association test. In this test there were 45 stimuli words with 4 blank spaces for each and the participants were to write down the first word that came to their mind four times. A value of 25% is given to each time try, of course if correct and related, and every 4-time try for each item scores 1. The overall score in this test is 45. After scoring and specifying the values, SPSS was used to find the correlation between the two tests. Pearson correlation was used to find this relation and any statistical significance between the two tests. In addition, in order to find the differences between the mean scores, one-way ANOVA was applied.

For the vocabulary-learning technique questionnaire, the obtained data was also fed to SPSS. Friedman Test was used to identify the ranks, priorities, and importance of techniques among the participants.

The data analysis of the interviews followed the steps of qualitative content analysis, seeking common patterns in the responses. Interview data were analyzed and interpreted following the grounded theory data analysis techniques and procedures, which is a qualitative research method that uses a systematic set of procedures to arrive at an inductively grounded theory. For this purpose, the audio-recorded interviews were transcribed and the comments of the subjects were written down. Then, the vocabulary learning techniques proposed by the subjects were sorted out from their comments and classified in order to find any specific or personal techniques along with the ones proposed in the questionnaire.

## 4. Results and Discussion

### 4.1. Quantitative Findings

In this section, the quantitative findings related to the proposed research questions will be given and further discussed.

#### 4.2.1. The Results of Word Knowledge Test

The mean score for 2000, 3000, 5000, and academic words is 25.5000, 19.6200, 11.8600, and 21.6400, respectively (see Table 1). In the table, (N.) refers to the number of the students. (Min.) and (Max.) refer to the minimum and maximum score that the subjects have taken in each of the tests. The last

three columns demonstrate the standard deviation, standard error of mean, and variance of each word level test.

Table 1  
Word Levels Test Results

W. Level	N.	Min.	Max.	M	SD	SEM	Variance
2000 W.	50	15.00	30.00	25.5000	3.50073	.49508	12.255
3000 W.	50	10.00	30.00	19.6200	5.53612	.78292	30.649
5000 W.	50	2.00	21.00	11.8600	5.41732	.76612	29.347
Academic W.	50	13.00	29.00	21.6400	4.62363	.65388	21.378

In addition to the above statistics, the frequency and the percentage of the received scores were calculated for each of the word level tests in order to analyze them in more details in the following tables. In Table 2, the frequency and percentage of the 2000 word level scores are presented. In addition, the cumulative percent of the 2000 word level is also provided.

Table 2  
2000 Word Level Test Scores' Frequencies and Percentage Results

Received Scores	Frequency	Percent	Cumulative Percent
15.00	1	2.0	2.0
18.00	1	2.0	4.0
19.00	1	2.0	6.0
20.00	3	6.0	12.0
21.00	3	6.0	18.0
22.00	2	4.0	22.0
23.00	3	6.0	28.0
24.00	1	2.0	30.0
25.00	3	6.0	36.0
26.00	5	10.0	46.0
27.00	5	10.0	56.0
28.00	16	32.0	88.0
29.00	5	10.0	98.0
30.00	1	2.0	100.0
Total	50	100.0	

In Table 3, the frequency and percentage of the 3000 word level scores are presented along with the cumulative percentage of the 3000 word level.

Table 3  
3000 Word Level Test Scores' Frequencies and Percentage Results

Received Scores	Frequency	Percent	Cumulative Percent
10.00	2	4.0	4.0
11.00	3	6.0	10.0
12.00	4	8.0	18.0
14.00	3	6.0	24.0
15.00	2	4.0	28.0
16.00	1	2.0	30.0
17.00	3	6.0	36.0
18.00	2	4.0	40.0
19.00	4	8.0	48.0
21.00	4	8.0	56.0
22.00	4	8.0	64.0
23.00	3	6.0	70.0
24.00	2	4.0	74.0
25.00	6	12.0	86.0
26.00	2	4.0	90.0

27.00	4	8.0	98.0
30.00	1	2.0	100.0
Total	50	100.0	

In Table 4, the frequency, percentage, and cumulative percentage of the 5000 word level is provided.

Table 4  
5000 Word Level Test Scores' Frequencies and Percentage Results

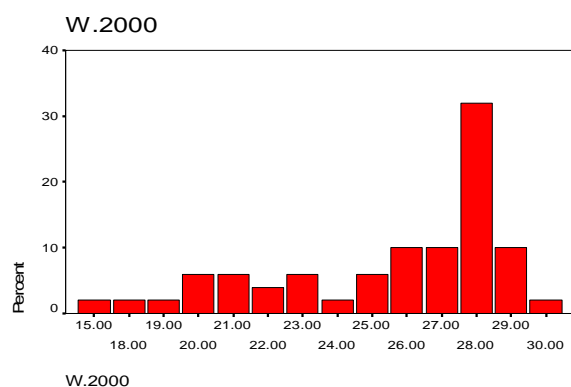
Received Scores	Frequency	Percent	Cumulative Percent
2.00	1	2.0	2.0
3.00	2	4.0	6.0
4.00	2	4.0	10.0
5.00	2	4.0	14.0
6.00	2	4.0	18.0
7.00	4	8.0	26.0
8.00	4	8.0	34.0
9.00	3	6.0	40.0
10.00	3	6.0	46.0
11.00	2	4.0	50.0
13.00	2	4.0	54.0
14.00	2	4.0	58.0
15.00	6	12.0	70.0
16.00	4	8.0	78.0
17.00	2	4.0	82.0
18.00	3	6.0	88.0
19.00	2	4.0	92.0
20.00	2	4.0	96.0
21.00	2	4.0	100.0
Total	50	100.0	

In Table 5, the frequency and percentage of the academic word level scores and also its cumulative percentage is demonstrated.

Table 5  
Academic Word Level Test Scores' Frequencies and Percentage Results

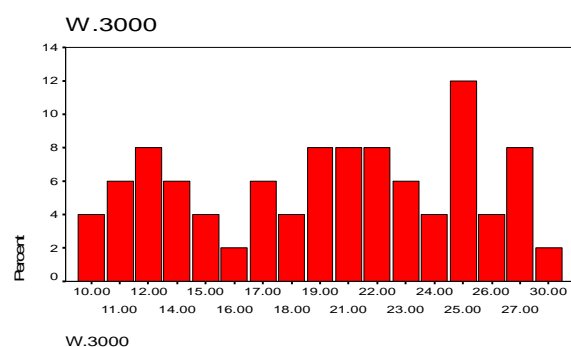
Received Scores	Frequency	Percent	Cumulative Percent
13.00	2	4.0	4.0
14.00	1	2.0	6.0
15.00	4	8.0	14.0
16.00	1	2.0	16.0
17.00	3	6.0	22.0
18.00	5	10.0	32.0
19.00	2	4.0	36.0
20.00	2	4.0	40.0
21.00	3	6.0	46.0
22.00	4	8.0	54.0
23.00	1	2.0	56.0
24.00	5	10.0	66.0
25.00	4	8.0	74.0
26.00	3	6.0	80.0
27.00	6	12.0	92.0
28.00	3	6.0	98.0
29.00	1	2.0	100.0
Total	50	100.0	

All the tables presented above can be clear enough to understand, however, for the better presentation of frequencies and percentages, they are also provided in figures below. As Figure 1 shows, for the 2000 word level test, the frequency of scores between 26 and 29 is 10% and higher. The frequency of the test score of 28 has the highest percentage, that is, 32%.



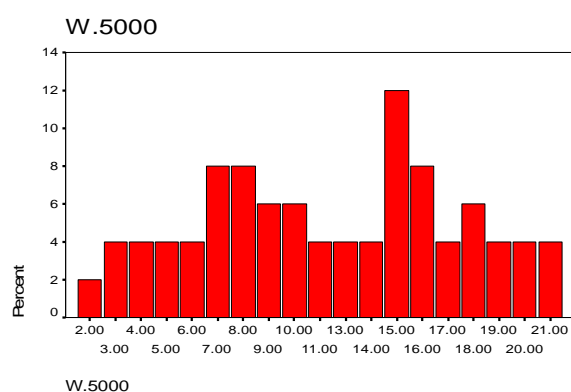
**Figure 1.** 2000 word level test scores' frequencies and percentage.

As Figure 2 presents, for the 3000 word level test, the frequency distribution of the scores is almost 4% and higher. The frequency of the test score of 25 has the highest percentage, that is, 12%.



**Figure 2.** 3000 word level test scores' frequencies and percentage.

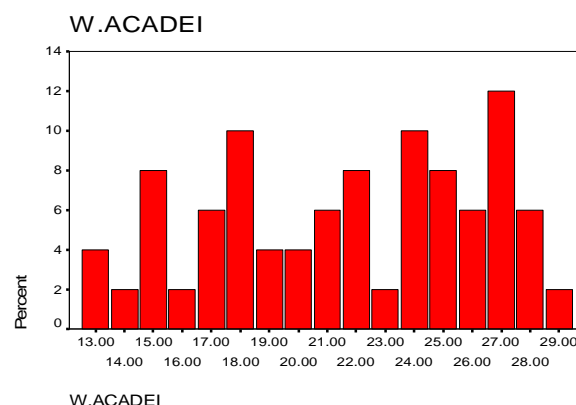
As you can see in Figure 3, for the 5000 word level test, the frequency distribution of most scores is 4% and higher. The frequency of the test score of 15 has the highest percentage, which is, 12%.



**Figure 3.** 5000 word level test scores' frequencies and percentage.

As you can see in Figure 4, for the academic word level test, the frequency distribution of the test score

of 27 has the highest percentage, that is, 12% and the second highest test scores are 18 and 24 with the same percentage, which is 10%.



**Figure 4.** Academic word level test scores' frequencies and percentage.

#### 4.2.1.1. Discussion

As the tables and figures present, the rate of frequency distribution of the scores in 2000-word level is mostly related to higher test scores (see Figure 1). However, as we look at 3000, 5000, and academic word levels, the rate of frequency distribution of the test scores is spread among all scores. Moreover, the highest rate in the 3000, 5000, and academic word level is 12% compared with the 2000 word level which is 30%. In addition, even these spread frequency distribution rate percentages of the scores have a declining move from the 3000 to 5000, and to the academic word level (see Figures 2, 3, and 4). This means that the subjects' vocabulary ability decreases as the word level increases. According to Zimmerman (1997) vocabulary is central to language and of critical importance to the typical language learners; vocabulary problems frequently interfere with communication and communication often breaks down when learners lack necessary vocabulary. The findings of this section are in line with that of Zimmerman, since learners' performance in 2000 word level is good but it decreases in higher word levels (3000, 5000, and Academic) for most of them. It means that learners' understanding of basic vocabulary for handling elementary level of communication is acceptable; however, in intermediate and advanced levels, many of them lack necessary vocabulary, thus, sometimes they fail in communication. Only those with higher scores in 2000, 3000, 5000, and Academic word level tests seem to be successful in different communication levels.

#### 4.2.2 The Results of Word Association Test

The mean score for word association test is 14.2450 with the standard deviation equal to 4.54863 (see Table 6). In the table, (N) refers to the number of the students. The minimum received score is 6.00 and

the maximum score is 24.75. Moreover, the standard error of mean is .64327 and the variance is 20.690.

Table 6

Word Association Test Results

	N	Min	Max	M	SD	SEM	Variance
Word Association	5	6.0	24.7	14.245	4.5486	.6432	20.690
n	0	0	5	0	3	7	

#### 4.2.3 The Results of the Relationship between Word Association Test and Word Knowledge Tests

To find the relationship between word association and 2000 word level, Pearson Correlation Coefficient was used (see Table 7). In the table, the correlation between the two variables is  $r = 0.725$  with the significance level of  $p = 0.000$  and since  $p$  is less than 0.05, the correlation between the two variables is meaningful. That is, with an increase in association scores, the use of 2000 word level vocabulary goes up as well, and the effect of this increase is 52.5.

Table 7

The Correlation between Word Association and 2000 Word Knowledge

Variables	Pearson Correlation	r-square	N	Sig. Level
Association	0.725	0.525	50	0.000
2000 W				

For finding the relationship between word association and 3000 word level, Pearson Correlation Coefficient was used (see Table 8). In the table, the correlation between the two variable is  $r = 0.764$  with the significance level of  $p = 0.000$  and since  $p$  is less than 0.05, the correlation between the two variables is meaningful. That is, with an increase in association scores, the use of 3000 word level vocabulary goes up as well, and the effect of this increase is 58.3.

Table 8

The Correlation between Word Association and 3000 Word Knowledge

Variables	Pearson Correlation	r-square	N	Sig. Level
Association	0.764	0.583	50	0.000
3000 W				

To find the relationship between word association and 5000 word level, Pearson Correlation Coefficient was used (see Table 9). In the table, the correlation between the two variable is  $r = 0.737$  with the significance level of  $p = 0.000$  and since  $p$  is less than 0.05, the correlation between the two variables is meaningful. That is, with an increase in association scores, the use of 5000 word level vocabulary goes up as well, and the effect of this increase is 54.3.

Table 9

The Correlation between Word Association and 5000 Word Knowledge

Variables	Pearson Correlation	r-square	N	Sig. Level
Association	0.737	0.543	50	0.000
5000 W				

Association	0.737	0.543	50	0.000
5000 W				

For finding the relationship between word association and academic word level, Pearson Correlation Coefficient was used (see Table 10). In the table, the correlation between the two variable is  $r = 0.708$  with the significance level of  $p = 0.000$  and since  $p$  is less than 0.05, the correlation between the two variables is meaningful. That is, with an increase in association scores, the use of academic word level vocabulary goes up as well, and the effect of this increase is 50.1.

Table 10

The Correlation between Word Association and Academic Word Knowledge

Variables	Pearson Correlation	r-square	N	Sig. Level
Association	0.708	0.501	50	0.000
Academic W				

In order to determine the possible differences among the means and also to know which mean score differs from others, one-way ANOVA for the 2000, 3000, 5000, and Academic word knowledge tests was used. Table 11 presents the results of ANOVA for the differences among the mean scores.

Table 11

One-way ANOVA for the 2000, 3000, 5000, and Academic Word Knowledge Tests

		Sum of Squares	df	Mean Square	F	Sig.
2000 Word	Between Groups	377.474	2	188.737	39.774	.000
	Within Groups	223.026	47	4.745		
	Total	600.500	49			
3000 Word	Between Groups	978.383	2	489.191	43.928	.000
	Within Groups	523.397	47	11.136		
	Total	1501.780	49			
5000 Word	Between Groups	917.288	2	458.644	41.396	.000
	Within Groups	520.732	47	11.079		
	Total	1438.020	49			
Academic Words	Between Groups	650.288	2	325.144	38.471	.000
	Within Groups	397.232	47	8.452		
	Total	1047.520	49			
Word Knowledge Mean (2000, 3000, 5000, Academic)	Between Groups	707.132	2	353.566	94.371	.000
	Within Groups	176.088	47	3.747		
	Total	883.220	49			

In addition, since the number of people in each group was not equal (weak = 17, average = 17, and good = 16), for comparing the mean scores, post hoc tests, namely, Ryan-Einot-Gabriel-Welsch (R-E-G-W) F test for the 2000, 3000, 5000, and Academic word knowledge tests was applied. Tables 12, 13, 14, and 15, show the R-E-G-W F test results for the 2000, 3000, 5000, and Academic word knowledge tests respectively.



Table 12

The R-E-G-W F Test Results for the 2000 Word Knowledge Test among Weak, Average, and Good Performers

Groups	N	Subset for alpha = .05	
		1	2
Weak	17	21.7647	
Average	17		26.7059
Good	16		28.1875
Sig.		1.000	.057

As we can see in Table 13, for 2000 word knowledge test, the mean of weak group ( $M = 21.7647$ ) is meaningful and significant ( $p = 1.000$ ); whereas, the mean for average ( $M = 26.7059$ ) and good group ( $M = 28.1875$ ) is not meaningful and thus not significant ( $p = .057$ ). In other words, weak performers are significantly different from average and good performers, while, average and good performers are not different in the 2000-word knowledge test.

Table 13

The R-E-G-W F Test Results for the 3000 Word Knowledge Test among Weak, Average, and Good Performers

Groups	N	Subset for alpha = .05		
		1	2	3
Weak	17	13.8824		
Average	17		20.6471	
Good	16			24.6250
Sig.		1.000	1.000	1.000

For the 3000 word knowledge test, the mean for all the groups, that is, weak ( $M = 13.8824$ ), average ( $M = 20.6471$ ), and good ( $M = 24.6250$ ) is meaningful and significant ( $p = 1.000$ ). In other words, all the performers (weak, average, good) are different in the 3000-word knowledge test.

Table 14

The R-E-G-W F Test Results for the 5000 Word Knowledge Test among Weak, Average, and Good Performers

Groups	N	Subset for alpha = .05		
		1	2	3
Weak	17	6.2941		
Average	17		12.8824	
Good	16			16.6875
Sig.		1.000	1.000	1.000

As for the 5000 word knowledge test, the mean for all the groups, that is, weak ( $M = 6.2941$ ), average ( $M = 12.8824$ ), and good ( $M = 16.6875$ ) is also meaningful and significant ( $p = 1.000$ ). This means that, weak, average, and good performers are all different in the 5000 word knowledge test.

Table 15

The R-E-G-W F Test Results for the Academic Word Knowledge Test among Weak, Average, and Good Performers

Groups	N	Subset for alpha = .05		
		1	2	3
Weak	17	16.8824		
Average	17		22.7059	
Good	16			25.5625
Sig.		1.000	1.000	1.000

Finally, for the Academic word knowledge test, the mean for all the groups, that is, weak ( $M = 16.8824$ ), average ( $M = 22.7059$ ), and good ( $M = 25.5625$ ) is also meaningful and significant ( $p = 1.000$ ). This also shows that the Academic word knowledge test is different among weak, average, and good performers.

Moreover, the same test (R-E-G-W) was repeated for the total word score mean of 2000, 3000, 5000, and Academic word knowledge tests, in order to identify the differences between the weak, average, and good performers' mean. Table 16 presents the obtained results.

Table 16

The R-E-G-W F Test Results for the Total Word Score Mean of 2000, 3000, 5000, and Academic Word Knowledge Tests among Weak, Average, and Good Performers

Groups	N	Subset for alpha = .05		
		1	2	3
Weak	17	14.7059		
Average	17		20.7500	
Good	16			23.7656
Sig.		1.000	1.000	1.000

As Table 16 presents, the total word score mean of 2000, 3000, 5000, and Academic word Knowledge Tests for the weak ( $M = 14.7059$ ), average ( $M = 20.7500$ ), and good ( $M = 23.7656$ ) group is also meaningful and different; moreover, the existing difference is significant ( $p = 1.000$ ). In other words, even the total word score mean of weak, average, and good performers in 2000, 3000, 5000, and Academic word knowledge tests is significantly different.

#### 4.2.3.1 Discussion

As we can see in the above tables, the correlation coefficient between word association and word knowledge is meaningful, that is, there is a positive relation between the two variables. The findings of this section are in line with the study conducted by Palmberg (1987) mentioned earlier in the literature review. On the development of vocabulary in an L2, Palmberg outlines a number of activities based on word associations, which could be used to enhance lexical control. He reported that foreign language

learners' vocabulary skills could be improved by using word association.

The analysis of variance (ANOVA) done for vocabulary knowledge tests (2000, 3000, 5000, and Academic) presents that the mean of these tests is different from each other and this difference is significant ( $p = 0.00$ ). In addition, the R-E-G-W F test results show the exact differences among the mean scores of vocabulary knowledge tests (see Tables 12, 13, 14, 15, and 16). Therefore, the ANOVA done for vocabulary knowledge tests (2000, 3000, 5000, and Academic) confirms the differences among the groups (weak, average, and good) and thus the role of word association in the existence of these differences.

In order to show this role (word association in word knowledge) in a more lucid and intelligible way, the participants and their performances in the word association test were classified into three categories; namely, *Weak*, *Average*, and *Good*. After that, their categorized performances in the word association test were placed next to their word knowledge test scores and then compared. Next section explains this classification in detail.

#### 4.2.4 The Results of Performance Divisions

In the previous section, the calculated correlations specified by SPSS along with ANOVA, revealed that

there is a positive relationship between word association and word knowledge. In this part, we are going to identify, in detail, whether word association technique has any effects on vocabulary knowledge and thus learning or expanding it. For this, the received association test scores of the subjects were divided into three parts; the association scores from 0 to 11.5 was named WEAK, from 11.75 to 15.75 AVERAGE, and from 16 and higher was named GOOD. This division was based on the minimum and maximum received scores in word association test. As a result, 17 students fell into the first category (WEAK), 17 students were placed in the second category (AVERAGE), and 16 students were labeled as GOOD (see tables 18, 19, and 20). After that, the students' word-knowledge test scores were placed in front of their association scores and the total word knowledge score of each participant was calculated and written in the last column. In the last row of each table, the mean of each column was computed and added to the tables. This last row in each table helped us go one-step further in specifying the effect of word association on learning or expanding word knowledge more lucidly and intelligibly (see Figures 5, 6, and 7). In Table 17, you can see the weak performers' results in word association and word knowledge tests. As the table reveals, the word association of 17 students is between 0 and 11.5. The mean of association scores is 9.52 and the mean of the total word score is 58.82.

Table 17

Weak Performers in Word Association Test and Their Word Knowledge Scores

Students' No.	Association 0 – 11.5	2000 W	3000 W	5000 W	Academic W	Total Word Score
32	6	15	11	3	14	43
25	7.5	27	12	8	19	66
24	8.25	20	10	9	15	54
33	8.75	19	11	5	15	50
26	9	20	11	8	16	55
29	9	25	18	8	18	69
23	9.25	21	12	3	18	54
37	9.5	21	19	7	21	68
36	10	21	14	5	17	57
21	10.25	25	14	7	17	63
35	10.25	24	15	4	21	64
20	10.5	22	10	10	18	60
28	10.5	26	12	6	22	66
31	10.5	23	12	2	13	50
38	10.5	20	26	7	15	68
41	10.75	18	14	6	15	53
22	11.5	23	15	9	13	60
Total = 17	M = 9.52	M = 21.76	M = 13.88	M = 6.29	M = 16.88	M = 58.82

Table 18, presents the average performers' results of 17 participants in word association between 11.75 and 15.75 and word knowledge tests. The mean score

of word association scores is 14.01 and of the total word score is 83.

Table 18

Average Performers in Word Association Test and Their Word Knowledge Scores

Students'	Association	2000 W	3000 W	5000 W	Academic	Total Word
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No.	11.75 – 15.75				W	Score
1	12.5	25	17	15	18	75
30	12.5	26	19	13	22	80
39	12.5	28	21	8	20	78
44	12.75	23	17	16	17	73
27	13	27	23	11	25	86
40	13	27	16	4	23	70
34	13.25	22	18	10	20	70
48	14	28	22	14	24	88
11	14.25	28	27	20	28	103
7	14.5	28	19	10	21	78
9	14.5	28	21	16	22	87
47	14.5	28	25	7	26	86
6	15	26	27	18	27	98
46	15	28	21	15	25	89
45	15.5	28	22	14	24	88
8	15.75	28	17	11	19	75
14	15.75	26	19	17	25	87
Total = 17	M = 14.01	M = 26.70	M = 20.64	M = 12.88	M = 22.70	M = 83

In Table 19, the good performers' word association and word knowledge score results are given. As you can see, 16 students are named as good performers;

their word association scores are 16 and higher and its mean is 19.50 and their total word score mean is 95.06.

Table 19

Good Performers in Word Association Test and Their Word Knowledge Scores

Students' No.	Association 16 and higher	2000 W	3000 W	5000 W	Academic W	Total Word Score
4	16	28	21	15	24	88
18	16	29	23	17	26	95
5	16.25	27	26	9	24	86
15	17	29	23	16	22	90
50	17	28	25	15	26	94
17	17.25	29	22	18	24	93
3	17.5	27	30	20	27	104
49	19	28	25	21	27	101
43	19.5	28	27	19	27	101
10	19.75	29	25	16	29	99
2	20	28	25	21	28	102
16	21	26	22	19	28	95
13	22.75	28	24	13	27	92
12	23.5	30	24	15	25	94
19	24.75	29	27	18	27	101
42	24.75	28	25	15	18	86
Total = 16	M = 19.50	M = 28.18	M = 24.62	M = 16.68	M = 23.93	M = 95.06

#### 4.2.4.1 Discussion

From the data mentioned in the tables above, it can be concluded that word association has a positive effect on word knowledge, that is, with an increase in word association scores, the word-knowledge test scores increase, as well. As the data reveals in this study, since the good performers have higher

association scores, they have scored higher marks in the word level tests (2000, 3000, 5000, Academic Words). Conversely, as the weak performers have lower association scores, their scores in the word level tests is lower, too. These findings are consistent with the reports of other researchers such as Vasiljevic (2008) supporting the positive role and effect of word association in generating vocabulary

reinforcement exercises for the learners and teaching vocabulary to advanced students. In order to show these relations and effects more objectively and clearly, these relations and effects (word association on word knowledge) are presented in figures below. In the following figures, the mean of word association scores of weak, average and good performers along with their mean of total word knowledge scores are put next to each other and compared in three separate figures. The blue bars

represent association means and the purple bars represent total word knowledge means. In Figure 5, the weak performers' mean ( $M = 9.52$ ) in association (the blue bars) and their word knowledge test scores' mean of 2000, 3000, 5000, and Academic words (the purple bars) are compared. As we can see, for the weak performers in association with the mean of 9.52, the mean of total word knowledge score is 58.82.

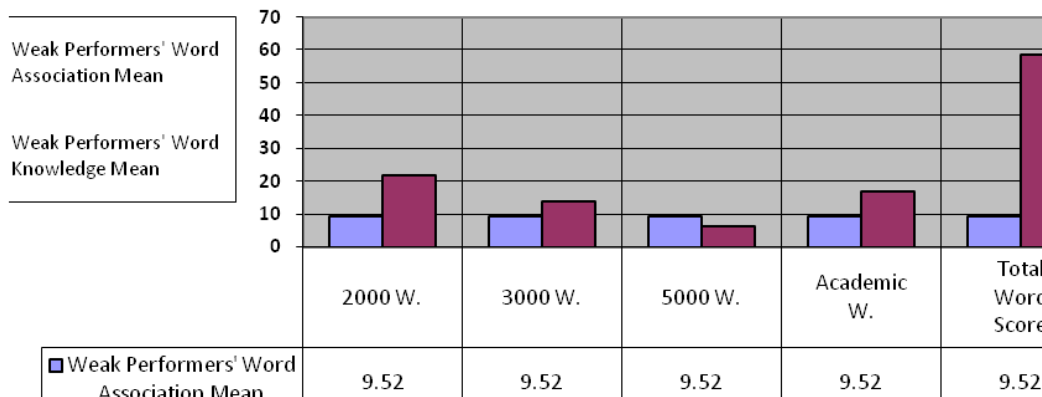


Figure 5. Weak performers' mean of association and word knowledge scores.

In Figure 6, for the average performers, the mean of association (the blue bars) is 14.01 and it is compared with their word knowledge test scores' mean of 2000, 3000, 5000, and Academic words (the

purple bars). As we can see, for the average performers in association with the mean of 14.01, the mean of total word knowledge score is 83.

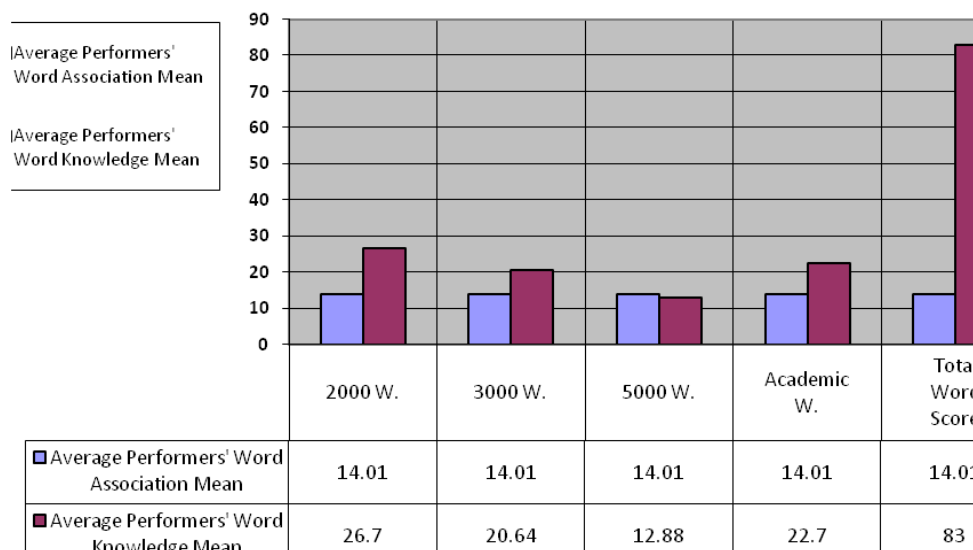
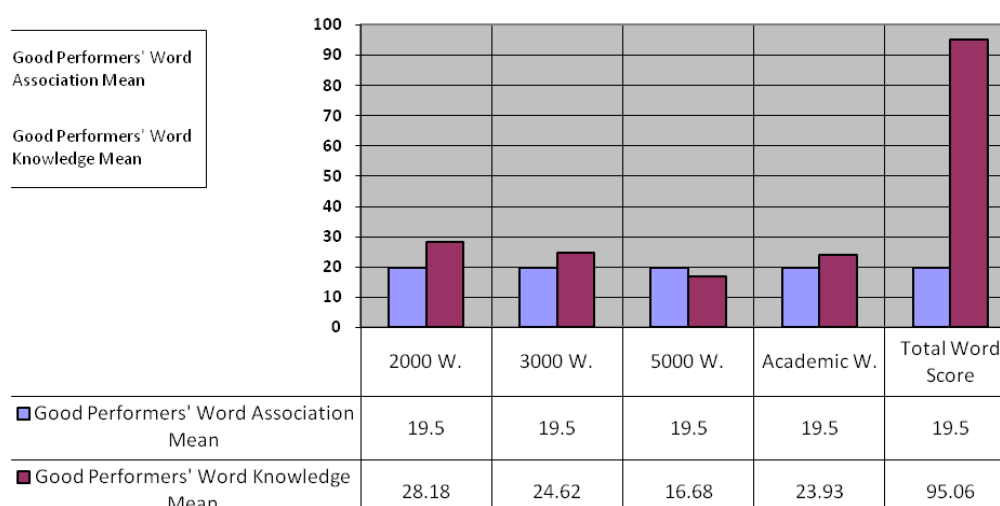


Figure 6. Average performers' mean of association and word knowledge scores.

In Figure 7, for the good performers, the mean of association (the blue bars) is 19.50 and their word knowledge test scores' mean of 2000, 3000, 5000, and Academic words (the purple bars) are added to the

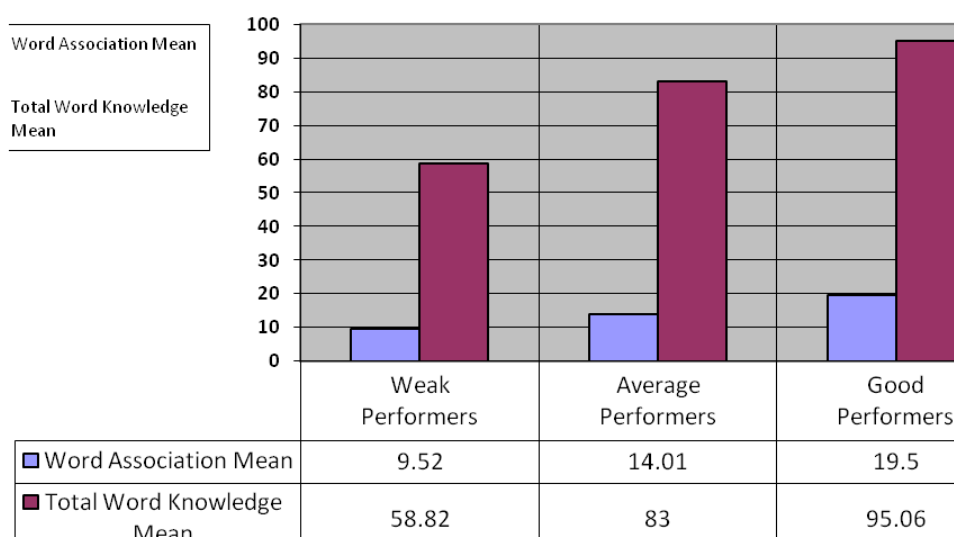
figure. As we can see, for the good performers in association with the mean of 19.50, the mean of total word knowledge score is 95.06.



**Figure 7.** Good performers' mean of association and word knowledge scores.

In Figure 8, only the mean of both word association and total word knowledge scores of the weak, average, and good performers are compared. In

this figure, the relation and effect of word association on the participants' word knowledge can be clearly identified.



**Figure 8.** Word association and total word knowledge mean of weak, average, and good performers

Therefore, we can conclude that word association technique has a positive effect on learning or expanding vocabulary knowledge, since with an increase in word association test scores, the scores of word knowledge test increases, as well. In addition, the weak, average, and good performers' received scores in word association test and word knowledge tests all reveal this positive effect (word association on word knowledge).

#### 4.2.5 The Results of Vocabulary Learning Techniques Questionnaire

In the previous section, we found that word association technique has a positive effect on learning or expanding vocabulary knowledge. In this section, we are going to analyze 12 vocabulary-learning techniques in order to find out to what extent, are the

students aware of vocabulary learning techniques? Meanwhile, word association technique will be evaluated again among other techniques in order to find its priority and rank among other techniques. These 12 vocabulary-learning techniques will be approached qualitatively in order to identify the use of these techniques among the subjects qualitatively and also identify any other techniques apart from these 12 ones that the participants may use.

A 12-item Likert-type questionnaire of vocabulary learning techniques was given to the participants (N = 50). They had five choices for each item, namely, *Never*, *Seldom*, *Average*, *Much*, and *Too much* and they were supposed to check only one choice for each item. After giving the questionnaire, the collected data were analyzed by SPSS and the results were given in tables. The goal of the questionnaire was to find the priority and ranking mean of each technique

used by the participants. In Table 21, the priority and ranking mean of each technique is presented. In order to prioritize the importance of techniques among the subjects, Friedman Test was used. As we can see, techniques with higher priority have also higher-ranking mean. In other words, students have used techniques with a higher-ranking mean more than other ones. In Table 20, technique number 5 (Word Association) with the ranking mean of 9.01 has the highest priority (12) and techniques number 3 (Use of Dictionary) with the ranking mean of 8.72 and number 9 (Watching English Movies and Cartoons) with the ranking mean of 8.62 have the second (11) and third (10) priorities among the participants. Technique number 4 (Word Grouping) with the ranking mean of 4.14 has the lowest priority (1) for the subjects.

Table 20

Ranking Mean and Priority of Techniques among the participants Based on Friedman Test

Techniques	Priority	Ranking Mean
1 Memorizing Words from Word Lists (Word – Meaning)	3	5.41
2 Use of Flashcards	5	5.65
3 Use of Dictionary	11	8.72
4 Word Grouping	1	4.14
5 Word Association	12	9.01
6 Visual Imagery	4	5.49
7 Aural Imagery	2	4.55
8 Reading English Literature, Such as English Novels, Essays or Short Stories	6	6.01
9 Watching English Movies or Cartoons	10	8.62
10 Listening to English Songs	8	7
11 Talking with Tourists, Travelers, and Chatting with English People on the Internet	9	7.28

12	Taking Notes from Unknown Words	7	6.12
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The highest priority = 12 The lowest priority = 1

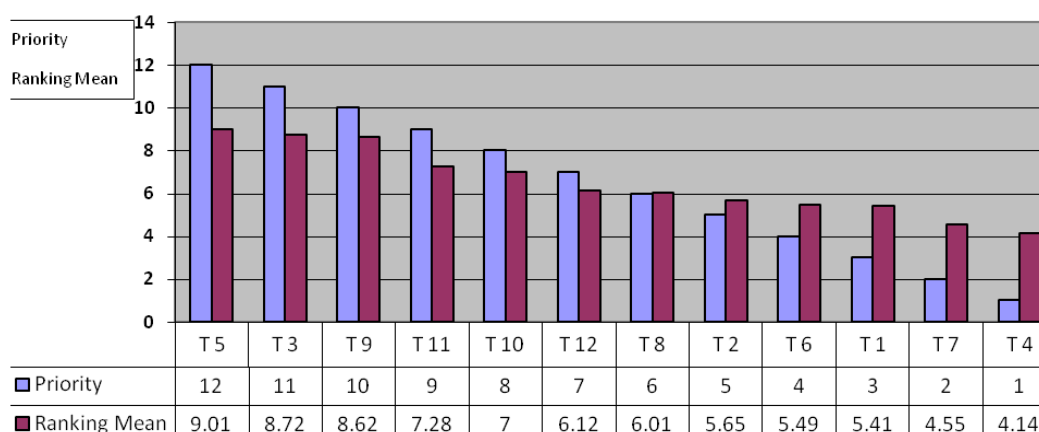
To investigate and prioritize the importance of techniques among the participants and explore the effects of vocabulary learning techniques in learning or expanding vocabulary knowledge, Friedman Test was used. The results indicate that since the Chi-square is 130.547 ( $\chi^2 = 130.547$ ) with the freedom degree of 11 ( $df = 11$ ) and significance level of 0.000 ( $p = 0.000$ ), there is a significant difference among the effects of different techniques in learning or expanding vocabulary knowledge. Table 21, presents this difference based on Friedman Test.

Table 21

Friedman Test Results of Priority and Importance of Techniques Among the Participants

N	Chi – Square	Df	Asymp. Sig.
50	130.547	11	0.000

To increase the lucidity and intelligibility of the findings of the questionnaire, the analyzed data were presented in a figure. In Figure 9, the priorities along with their ranking means are presented. *T* stands for techniques and the numbers next to each *T* indicate the sequence of each technique as written in the questionnaire. For example, *T* 5 means that this technique is the fifth item in the questionnaire. As we can see, the relationship between priority and ranking mean can be clearly understood from this figure. Priority 12 with the highest-ranking mean states that the subjects have used this technique more than other ones, whereas, priority 1 with the lowest-ranking mean indicates that the participants have least used this technique.



**Figure 9.** Ranking mean and priority of techniques among the participants based on Friedman Test

#### 4.2.5.1 Discussion

As the results of the questionnaire reveal, from the 12 techniques used by the participants in learning or expanding vocabulary knowledge, word association technique (synonyms, antonyms, collocations, clangs, etc.) is applied by the subjects more than other

techniques. Although students are aware of some vocabulary learning techniques, word association had the first priority and importance among the students (see Table 21 and Figure 9).

The findings of this part are in line with that of Vasiljevic (op.cit.). As mentioned earlier, 2.7.6, his research has shown that using associations is more

effective than only rote memory for learning vocabulary or other techniques such as explicit definitions and inferring word meaning from context. In this study, word association was evaluated among other techniques. The results were similar to that of Vasiljevic; word association technique was the first priority of the learners.

### 4.3 Qualitative Findings

This section will progress on the basis of semi-structured interviews taken from the same participants about the use of different vocabulary learning techniques for learning or expanding vocabulary knowledge.

One research method used for collecting data is interview. Semi-structured interviewing is perhaps the most common type of interview used in qualitative research. In this type of interview, the researcher wants to know specific information, which can be compared and contrasted with information gained in other interviews. To do this, the same questions need to be asked in each interview. However, the researcher also wants the interview to remain flexible so that other important pieces of information can still arise. For this type of interview, the researcher produces an interview schedule. This may be a list of specific questions or a list of topics to be discussed. This is taken to each interview to ensure continuity.

An interview schedule consisting of 5 questions was prepared. 20 participants were selected randomly to answer these 5 questions about vocabulary learning techniques, personal techniques, their opinions about English language learning, and the importance of vocabulary learning. The interview process happened in one session and it took about 2 hours. The subjects were interviewed one by one, the whole interview was recorded by a tape recorder, and then the related and required information was extracted and transcribed on paper for further, better, and more precise analysis.

During the interview, the learners were encouraged to talk about what they actually did currently to learn vocabulary on their own, not what they did at early stages of their studies or what they would like to do. More importantly, as suggested by Kvale (1996), the interview generally started with a briefing and finished with a debriefing. Thus, in the briefing the researchers somewhat "broke the ice," stated the purpose of the interview and clarified any doubts. Regarding the debriefing, the researchers commented on some interview outcomes as a way of creating a sense of relevance to the interviewee's contributions.

Whatever answers the participants provided for the proposed questions in the interview, all were common in one thing that vocabulary is crucial for communication. Moreover, if sometimes they fail in communication and connecting with people, it is because of the lack or limited amount of vocabulary in different fields. This common sense about vocabulary among the interviewees is in line with Zimmerman (op.cit.) claiming that vocabulary is

central to language and of critical importance to the typical language learners; vocabulary problems frequently interfere with communication and communication often breaks down when learners lack necessary vocabulary.

The findings of the qualitative phase are also consistent with the statement from Lewis (op.cit.) arguing that learning vocabulary is the core task in SLA, and any language skills of listening, speaking, reading, writing, translating, cannot exist without vocabulary. Words are the currency of communication. A robust vocabulary improves all areas of communication. Almost all the interviewees in this study were on the same boat and admitted the major and positive role of vocabulary in all areas of communication.

### 5. Concluding Remarks

This research project, in quest of finding the effect of word association technique in learning or expanding vocabulary knowledge, commenced from the context of EFL classroom. In two following sessions, two tests were administered to 50 participants. One test was word knowledge test of 2000, 3000, 5000, and Academic. The other test was a 45-item word association test and the participants were to write the first 4 associations that come to their mind for each item. The aim of word knowledge test was to elicit the participants' vocabulary level and the aim of word association test was to specify the participants' amount of using this technique. The study chiefly aimed at finding positive effects that word association may have on word knowledge.

The preliminary results of this study clearly point to the existence of relation between word association and word knowledge with a high correlation. Another noteworthy point, found in this study, is that word association has a positive effect on vocabulary knowledge. For this, the participants were divided into three parts, namely, weak, average, and good, based on their received scores in word association test. Then their vocabulary level test scores were put next to their word association test scores and compared. The results indicated that weak performers in word association do not have good vocabulary knowledge. Moreover, average performers are somehow average in word knowledge but good performers in word association, have good vocabulary knowledge. After all, it was concluded that, with the increase in the score of word association, the vocabulary knowledge of the participants improves. Therefore, the answers for our first two research questions: 1) Does instruction through word associations offer potential advantages to the Iranian EFL learners? and 2) Do word association techniques contribute to learning/expanding vocabulary knowledge? are: Yes, instruction through word association has advantages and it can also contribute to the learning or expanding vocabulary knowledge.

For the third research question (To what extent, are the students aware of vocabulary learning



techniques, especially, word association?), we approached from two phases. Quantitatively, we administered a 12-item vocabulary-learning technique questionnaire in order to find the priority and importance of the techniques among the participants and qualitatively, we conducted a 5-question interview randomly from 20 participants in order to have an in-depth investigation of the techniques. The quantitative and qualitative results both indicated that from among the many techniques used by the participant for learning or expanding vocabulary knowledge, word association technique is more colorful.

One more time it is worth to mention that, word association technique has a positive contribution to learning or expanding vocabulary knowledge. Next time you wish to learn some new words, why not, try word association technique.

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