The Role of Flashcard and Wordlist Strategies with Concrete vs. Abstract Words on Iranian EFL Learners' Vocabulary Development

[1]Farahman Farrokhi
[2]Mohammad Zohrabi*
[3]Aysan Bolandnazar

Abstract

The aim of the present study was to investigate the effect of flashcard and wordlist strategies with regard to concrete vs. abstract words on vocabulary development of Iranian intermediate EFL learners. The current study had a quasi-experimental design and consisted of two experimental groups and one control group. Ninety Iranian intermediate university students participated in this study. The participants were determined on the basis of Quick Placement Test (QPT). Eighty vocabulary items were selected from the wordlists presented on Paul Nation's website for the treatment, and they were applied via two different strategies (flashcard/wordlist), and two different kinds of words (concrete/abstract). A pretest, an immediate test and a posttest were administered. To analyze the results, the SPSS software was employed. The experimental groups using flashcards and wordlists were found to outperform the control group. However, no statistically difference was observed between flashcard vs. wordlist strategies. Also, the findings showed that students will probably remember the concrete words for a longer period of time in comparison to abstract words. These findings will probably give insights into language pedagogy by encouraging English teachers to choose the teaching materials which can facilitate the process of teaching and learning.

Keywords: Vocabulary Learning Strategy, Flashcard, Wordlist, Concrete Words, Abstract Words

1. Introduction

Language is an instrument for expressing thought and the sign of mental development. The important role of language in cognitive and social development is self-evident. The main use of language is to transfer thoughts from one mind to another. Thought comes first, while language is an expression. Words are the basic units since they construct the spoken and written language. Word power would probably lead to fluent speaking and effective writing. In order to express ideas and feelings, as well as to explore and analyze the world, one needs words. Communication throughout the world, has now become necessary to grasp the opportunity to gain information. Language is a means to communicate. It is the most important tool for everyone to communicate with others.

For the purpose of learning a second or foreign language and being able to communicate effectively, one needs to learn the four main skills of speaking, writing, listening, and reading. The role of vocabulary as an inseparable part of any communication is self-evident since a meaningful communication necessitates the knowledge of vocabulary. Jordan (2000) believes that vocabulary knowledge is an important domain of second language competence. As Lewis (1993) points out, "Vocabulary should be at the center of language learning" (p. 36).

One of the components of language learning strategies is vocabulary learning strategiy, with the knowledge of which learners can better understand vocabulary. Two of the most common

[1] Professor; f-farrokhi@tabrizu.ac.ir; English Department, Faculty of Persian Literature, University of Tabriz, Tabriz Iran.

[2] Assistant Professor, (Corresponding Author), mohammadzohrabi@gmail.com; English Department, Faculty of Persian Literature, University of Tabriz, Tabriz Iran.

[3] MA in TEFL, aysanbolandnazar41@gmail.com; English Department, Faculty of Persian Literature, University of Tabriz, Tabriz Iran.

vocabulary learning strategies are the use of flashcards and wordlists. According to Schmitt (1997), wordlists and flashcards are two types of cognitive strategies. Flashcards have been used by many teachers for different purposes in the history of language learning. One of the examples is to teach learners to expand their vocabulary knowledge and use drills when learning a second or foreign language (Ervin, 1988).

Furthermore, semantically, words are considered to be either concrete or abstract. According to Alduais and Almukhaizeem (2015), in the studies investigating the differences between concrete and abstract words, the effect of concreteness has been discovered greatly. The effect of concreteness emphasizes that concrete words are remembered easier than abstract ones. Abstractness effect, on the other hand, refers to the idea that abstract words are remembered better than concrete words. Moreover, the term 'zero effect' was introduced as an occasion in which the number of recalled concrete and abstract words is equal. As a rule, concrete words are encoded and retrieved faster and easier than abstract words. This issue has been mostly indicated through free and cued recall, recognition, and paired associate learning (e.g., Marschark & Paivio, 1977; Nelson & Schreiber, 1992; Paivio et al., 1994).

Based on the ideas discussed above, being aware of the ways in which learners adopt the strategies effectively to increase their vocabulary knowledge is essential. Thus, the principal focus of the current study is to examine two types of strategies (flashcard/wordlist), and two types of words (concrete/abstract) and their effects on the vocabulary development of Iranian EFL learners.

2. Review of the Related Literature

2.1. Definition and History of Flashcard

Flashcards are one of the most widely and commonly used strategies in language as well as vocabulary learning. A flashcard is a small piece of paper, which is available for the learners both in the class and their extracurricular time. The size of a business card, in which the target word is presented on the one side, and its first language equivalent is written on the next side, is mostly preferred because it makes for an activity. They can be very useful for drilling and as a warming up exercise at the beginning of the period.

Paper flashcard has been used since 19th century, with reference to Disentangle (1834), a set of phonics flashcards which were prepared by English educator, Favell Lee Mortimer, and were regarded by some as the first flashcards. A single sided horn book was used for early literacy education prior to that. A German scientific journalist Sebastian Leitner in the 1970s, specifically in his book entitled "so learnt man Lerner. Der Weg Zum Erflog (How to learn)", introduced the Leitner system for scheduling flashcards.

According to Suyanto (2008), "Flashcards are usually made from thin and stiff paper. The flashcard must always be, large, brief, neat and clear so that it can be seen from the rear" (p. 109). Also the use of capital letters are preferred since it is easy to read from a rear of the room. The flashcards can be displayed by the teacher or by a pupil. Thornbury (2002) affirms that flashcards are considered to be a useful and practical strategy for vocabulary learning, by the help of which the teachers can illustrate a simple order of activities to the students. Furthermore, teachers can also make use of flashcards in the classroom to present and review new words. One of the most important advantage of flashcards is that they can be carried anywhere and learners can study them at leisure time (Brown, 2000). Furthermore, they can be organized to create logical groupings of the target words (Cohen, 1990; Gairns & Redman, 1990).

2.2. Wordlists

Wordlists are a common practice almost everywhere in the world. They present both the words and their definitions on the same side. Typically, words are written in a left column and their definitions right next to them, with or without example sentences.

Oxford and Crookall (1990) affirmed that wordlists are very common. They have classified wordlists into decontextualized techniques. In general, such lists are not embedded in a

communicative context, in other words, their relationship with their context of use are not directly and clearly demonstrated. However, assumptions undergirding wordlist technique seem to claim that students do not need to bother with context when learning vocabulary; rote memorization is perfectly sufficient. Sometimes L2 wordlists are presented with no native language equivalents. Such lists are referred to as unpaired lists. More often though, lists include both the target words and their L1 equivalents. This type of lists are also called paired or paired-associate wordlists. Many researchers believe that paired lists are not sufficient for vocabulary learning (Carrell, 1984; Sawffar, 1988; Hudson, 1982). In Carrell's words (1984), "merely presenting a list of unfamiliar or new vocabulary items to be encountered in a text, even with definitions appropriate to their use in that context, does not support the induction of a new schema…" (p. 335). According to Norein Osman and Alhomoud (2015), paired lists have been very useful for vocabulary learning. They believe that vocabulary learning is accumulative, and that every little effort is helpful. It is apparent that a paired list provides minimal or no context; and in spite of the fact that students can manage to memorize the L2-L1 pairs in a list, they won't probably be able to use the new vocabulary in communicative interactions without further external support. However, it will be helpful to look at vocabulary learning as a continuum where wordlists are at one end of that continuum, and they are only one step towards mastery of vocabulary, whereas the fully contextualized contexts are at the other end.

2.3. Concrete and Abstract Words

The difference between concrete and abstract words is the second element that needs to be reviewed in this section. Semantically, words can be regarded as either concrete or abstract. Jefferies et al. (2010), state that:

> Concrete words or concepts contain the meanings of tangible things that can be experienced through our senses – therefore, we can easily create mental images for concrete words. In contrast to concrete words, abstract concepts are not directly correlated to tangible objects and mostly do not readily evoke mental images. These concepts refer to mental states or ideas. (p. 492)

According to West and Holcomb (2000), words which represent concrete concepts can be processed more efficiently and quickly, compared with words that represent abstract concepts. It has been discovered that concrete words (words that refer to particular events or objects, e.g., *airplane*) are cognitively processed better in comparison to abstract words (words that refer to more complex and general concepts or ideas, e.g., *kindness*). Generally speaking, concrete words are memorized and encoded in a faster and more complete manner. This issue has been revealed through recognition, cued and free recall, and paired associate learning (e.g., Marschark & Paivio, 1977; Nelson & Schreiber, 1992). Furthermore, when a sentence is concrete, the time allocated to its comprehension is generally shorter (Schwanenflugel & Shoben, 1983; Haberlandt & Graesser, 1985). In addition, in meaningfulness and truthfulness judgment tests, subjects respond to concrete concepts faster than abstract ones (Klee & Eysenck, 1973; Holmes & Langford, 1976). While Richmond and Ninch (1977), in one investigation stated that no significant difference exists between the retention of abstract and concrete words, the majority of the studies conducted on this issue proved that the concrete words are retained easier and faster than abstract ones in language learning for a longer period of time. Walker and Hulme (1999) showed that words with concrete meanings are consistently retained better in speaking and writing; in other words, in two different forms of language production.

The aim of this section is to investigate in which type of retention, concrete and/or abstract words are retained better, and also to see if any differences is witnessed between two types of recall that would influence retention of concrete words over abstract ones or vice versa.

2.4. Studies Related to Flashcards

In an investigation on the use of flashcards, Ehri and Roberts (1979) examined whether printed words were learned better in isolation or in context. The posttest scores showed that first graders to whom the words were presented in context were able to learn the semantic identities of printed

Chabahar Maritime University
Iranian Journal of English for Academic Purposes   ISSN: 2476-3187
IJEAP, 2021, 10(1), 88-107   (Previously Published under the Title: Maritime English Journal

words better. Furthermore, the children who were trained to use flashcards could read words easier and also understood more about orthographic forms.

Cuvo and Klatt (1992) compared three instructional conditions: a) instructing community-referenced sight words, b) using flashcards for instructing sight words, and c) phrases with a videotape in the school and instructing the sight words with the natural signs in community to young learners with moderate and mild mental retardation. The findings indicated that in all three situations mentioned above, the sight words of community-referenced were acquired rapidly and the flashcard and videotape conditions were also generalized to the community sites. In spite of the fact that some researchers have claimed that flashcards might be used as an instrument to make class enjoyable for the students, the findings of these studies provided evidence for their positive effects on language learning.

Nakata (2008) compared vocabulary learning with wordlists and flashcards in order to determine which strategies lead to superior and higher spaced learning. In his study, he found out advantages and superiority of flashcards by pointing out drawbacks of wordlists. He stated that because the definition is presented right next to the words on a wordlist, this feature may deprive learners from attempting to recall the meaning.

Baleghizadeh and Ashoori (2011), although acknowledging the advantages of flashcards, did not find compelling evidence that supports the remarkable superiority of flashcards over wordlists in their research. They intended to compare the efficacy of flashcards and wordlists with a t-test. The sample was purposefully drawn from a junior high school consisting of 18 male students in Iran. The participants were divided into two different groups and learned identical vocabulary words. However, flashcards were used for one group and wordlists for the other. When students took the posttest, they were given twenty words in L2, and they were expected to write the definitions in Farsi. Exactly two days after the results of delayed posttest, they did observe a slightly higher average score from the flashcard group (16.83), than from the wordlist group (15.55).

Komacha, and Khodareza (2012) conducted a research study entitled "The Impact of Using Vocabulary Flashcard on Vocabulary Knowledge of Iranian Pre-University Students". Fifty female learners participated in the study. They were randomly divided into two groups. Each group consisted of 25 participants. The experimental group received the vocabulary flashcard treatment and the control group received vocabularies in traditional way. Analysis of the results in the posttest showed that there were significant differences between the groups. The findings also revealed that the experimental group had higher levels of vocabulary knowledge in comparison to the control group. Thus, it was found that the use of flashcards in teaching vocabulary to learners led to greater vocabulary improvement.

Azabdaftari and Mozaheb (2012) compared the use of flashcards and cell phones for vocabulary learning. The subjects of the study were 80 students who studied English Literature and Translation. The findings revealed that using cell phones would be a better strategy for language and vocabulary learning in comparison to the use of other strategies, such as flashcards.

Sitompul (2013) examined the effect of using flashcards on vocabulary learning. The participants were assigned into two groups: an experimental and a control group. The level of vocabulary knowledge for both groups were the same. The flashcards treatment was given to the experimental group and the wordlist treatment to the control group. The findings indicated that after being taught how to use flashcards and wordlist, the students' vocabulary improved. The students who used flashcards had superior motivation to learn English and were able to retain words better. Moreover, they could understand vocabulary without difficulty. Students in the control group, however, understood that wordlist was a boring strategy.

Mojarradi (2014) carried out a research to investigate the effect of using flashcards on vocabulary learning of 40 pre-university students attending high school. The students were received a pretest to make sure that they were homogenous at the level of vocabulary knowledge. The students were divided into two experimental and control groups. They answered pretest and posttest

Chabahar Maritime University
Iranian Journal of English for Academic Purposes   ISSN: 2476-3187
IJEAP, 2021, 10(1), 88-107   (Previously Published under the Title: Maritime English Journal

questions. Finally, the findings indicated that flashcard strategy had positive effects on vocabulary learning.

Norein Osman and Alhomoud (2015) investigated the role of flashcards vs. wordlists for vocabulary building among Majmmah high School students. The participants consisted of ninety students who studied at King Abdullah High School. There were three experimental groups (thirty participants in each): a) studied vocabulary from bilingual wordlists; b) studied vocabulary from bilingual flashcards (the target word and its Arabic meaning were on one side); c) studied vocabulary from bilingual flashcards, where the target words were on one side, and their Arabic meanings were on the other side. The study followed T1-treatment-T2 format, where the participants were pretested with the target words, given the new vocabulary, and post-tested on the target words for any retention or attrition effects. Finally, the findings of the research indicated that no significant differences existed between the subject's performances on three types of flashcards in King Abdullah High School.

Taghizadeh and Porkar (2018) conducted a research study entitled "Flashcard, SMS and Tablet and their Impacts on EFL Learners' Vocabulary Knowledge and Attitudes". Forty five Iranian advanced EFL learners participated in the study. They were divided into three groups. The first group used tablet to learn the vocabulary items, the second group learned the vocabularies via SMS, and the third group used flashcards. The results indicated that instruction of vocabulary through using SMS, flashcard, and tablet positively affected the subjects' performance on the vocabulary test. The majority of the learners who used flashcards, claimed that flashcard was effective for learning English words and argued that they could provide flexible learning anywhere and at any time.

In another study, Jo (2018) compared the usefulness of wordlists and flashcards. Twenty-four Chinese ESL students participated in the research and studied 64 low-frequency English words. Of the total number of words, 32 words were recalled through flashcards and the other 32 via wordlists. Paired samples t-tests showed no significance difference between the use of flashcards and wordlists.

2.5. Studies Related to Wordlists

Van Benthuysen (2003) investigated the benefits of using wordlist in vocabulary instruction. His study was carried out with a class of fourteen Japanese college students. The findings of the study confirmed the fact that decontextualized learning of vocabulary through wordlist can be valuable in second language instruction.

In a study conducted in Taiwan, Lu (2004) reported that with regard to vocabulary retention, EFL learners who learned vocabularies through bilingual wordlists significantly performed much better than high school students who learned the same target words by reading articles. However, both groups performed in a similar way in terms of the overall reading comprehension.

Compatible with Lu's findings, the results obtained from Lin's (2009) study indicated that studying wordlists had significantly more positive impacts on vocabulary retention of Taiwanese high school students. Nevertheless, both in terms of word retention and overall scores on a reading proficiency test, the differences between the two types of wordlists were not significant.

Hsiao-Yun and Yihsiang (2012) examined the effects of wordlist versus word card strategy, and massed versus spaced practice strategy on English vocabulary retention of EFL high school students in Taiwan and then investigated their opinions toward each of these strategies. The subjects consisted of 120 Taiwanese EFL junior students, who were then assigned into card-massed, card-spaced, list-massed, and list-spaced groups. One hundred twenty target words were instructed to these students during identical eight week sessions. The target words were presented on either word lists or word cards. Statistical analysis of test scores revealed that the implementation of the word card led to significantly superior vocabulary recall. This condition was somehow true about spaced practice (studying or practicing all the selected target words at one-week intervals), but the findings obtained were not significant in comparison to that of massed practice (studying or practicing all the

Chabahar Maritime University
Iranian Journal of English for Academic Purposes   ISSN: 2476-3187
IJEAP, 2021, 10(1), 88-107   (Previously Published under the Title: Maritime English Journal

selected target words at one time). Findings obtained from individual interviews and analyzing questionnaires indicated that the majority of the participants employing the word card strategy preferred this strategy to the wordlist strategy, believing that the word card strategy made vocabulary retention easier.

In another study, Tatsuya (2008) compared the use of word cards, wordlists, and computers in vocabulary learning in order to find out which strategy leads to the most successful learning. Two hundred twenty-six Japanese high school students participated in this study. During the experiment, they studied 10 English words using one of the three learning strategies: cards, lists, and computers. The employment of one-way analysis of covariance (ANCOVA) revealed that in spite of the fact that there was no significant difference between the list group and the other two, the PC group performed better than the list group.

Studies that have been carried out to examine the effects of wordlist strategy on vocabulary retention are more than research conducted on the impacts of word card strategy. The results of Qian's (1996) study, for instance, showed that the retention of ESL vocabulary was augmented by memorizing decontextualized wordlists more significantly in comparison to studying contextualized words. Furthermore, Laufer and Shmueli (1997) indicated that words which were presented in wordlists could be retained better than those given in texts or elaborated texts. Moreover, Mehrpour (2008) noted that the use of wordlists for memorizing new EFL words yielded better vocabulary retention in comparison with making written or oral sentences.

Piribabadi and Rahmany (2014) also conducted a study in which they examined the effect of the wordlist method and keyword method teaching on ESP vocabulary learning across lower- and upper-intermediate proficiency levels. The Islamic Azad University students of Tehran participated in this study and they were divided into two groups. A total of 120 Industrial engineering students, within an average age of 21 years at an intermediate language proficiency level participated in the study. According to the results, the performance of the keyword method group at upper-intermediate level was significantly better than that of the upper-intermediate wordlist method group. Furthermore, the lower-intermediate level students who were in the keyword method group had exceeded those in the wordlist method. Moreover, the scores of all the students in the keyword method group were higher than those of the wordlist method group, irrespective of their proficiency level. The results of the study also revealed that with regard to the students' proficiency level, the instruction of keyword method was more advantegouse in comparison to the wordlist method, in learning vocabulary.

2.6. Studies Related to the Concrete and Abstract Words

Several studies have been conducted in order to examine the effect of concreteness or superiority of concrete words over abstract words regarding their impact on retrieval. For example, Schwa et al. (1992, as cited in Alduais & Almukhaizeem, 2015) investigated the concreteness impacts of strategic imagery, context availability, and automatic-imagery hypothesis predictions to remember concrete and abstract words. Three experimental conditions were carried out to support the view that concrete words are more strongly remembered than abstract materials.

De Groot and Keijzer (2000), in their study, investigated the role of concreteness and abstractness in vocabulary learning of foreign language learners. They concluded that learning of concrete words were easy and less prone to forgetting in comparison with abstract words.

West and Holcomb (2000) carried out a study which supported the finding that in terms of cognitive processing, concrete words have superiority over abstract ones. The participants of the study involved 36 students whose ages ranged from 19 to 23 years. They were assigned to three groups, each of which revealed one level: surface, semantic, and imagery level. The reaction time (RE) and even-related brain potential (ERP) instruments were used. According to the results, in semantic and imagery tasks, ERPs were shorter for concrete words in comparison to abstract words, particularly with regard to the task of imagery.

In their study, Harad and Coch (2009) investigated the effect of concreteness on backward recall and word processing ability. The participants consisted of fourteen adults. The number of concrete and abstract words was 120 for each type of word. The most striking result to emerge from their data was that concrete words were remembered more accurately in comparison with abstract words.

Likewise, Fliessbach et al. (2006) examined concrete and abstract word processing based on the idea that concrete words have superiority over abstract ones since they lead to better remembrance. Their study was built on two theories. Both of the theories supported the assumption that learners are more likely to remember concrete words than abstract ones. The first theory is called *dual-coding theory* which claims that concrete words are recalled better than abstract words since they possess "dual coding … in the form of a sensory and verbal code", (ibid, p. 1413). The second one is called *context-availability theory* and argues that concrete words are better remembered than abstract words since they possess "a high available semantic network" (ibid, p. 1413). The drawn conclusion was mostly in favor of concrete words than the abstract ones concerning activated places in the brain.

Despite the belief about the fact that concrete words are more easily recalled in comparison to abstract words, Richmond and Ninch (1977) researched concrete vs. abstract word learning in subjects who were in first grade. Eight words were chosen (four abstract, four concrete) from common word lists and presented mechanically to participants. The participants were divided into two groups of high and low ability level. A 2×2 analysis of variance revealed that no significant difference existed in the participants' ability to learn abstract or concrete words. Furthermore, the performances of the participants with low level of readiness were not significantly different from those with high level of readiness. As a result, concreteness or abstractness of a word might not be a significant and deciding factor in learning of words.

Alduais and Almukhaizeem (2015) also investigated whether abstract words are recalled better than the concrete words. Three groups of undergraduates who studied at King Saud University, Saudi Arabia, were chosen for the study. They were trained in order to recognize the differences between abstract and concrete words more easily. The findings revealed a zero effect and no advantage neither for concrete words over abstract ones nor vice versa. The research questions that guided the present study were as follows:

Research Question One: Is there any statistically significant difference between flashcard vs. wordlist strategies in terms of their effects on the retention of Iranian intermediate EFL learners' vocabulary development?

Research Question Two: Is there any statistically significant difference between concrete vs. abstract words in terms of their effects on the retention of Iranian intermediate EFL learners' vocabulary development?

3. Method

3.1. Participants

A total of 90 Iranian university undergraduate students of English literature and translation (30 students for each of the three groups) were selected from University College of Rab-bi Rashid in Tabriz, Iran, using the convenience sampling method. The average age ranged from 18 to 28 and all the students were freshmen, sophomores, juniors and seniors. The gender of the students was not taken into consideration in the present study. The students were at intermediate level, which was determined by the *Quick Placement Test*.

Table 1: Characteristics of The Participants

Number of the participants	90
Age range	18-28
General English proficiency level	Intermediate
Gender	Female / Male

Language background	Turkish / Persian

3.2. Instrumentation

3.2.1. Test of Language Proficiency

A standard language proficiency test, i.e. quick placement test of Oxford University Press and University of Cambridge Local Examinations Syndicate (2004, version 2) was administered to homogenize the students and determine their English language proficiency level.

3.2.2. Source of Vocabulary

The researchers selected a total of 80 low frequency vocabulary words from the wordlists presented on Paul Nation's website (see also, www.victoria.ac.nz/lals/about/staff/paulnation#_vocab-lists), in which words are presented from the first most common one thousand English words to the tenth most common one thousand English words. In order to ensure that the minimum number (if not none) of the words included in the wordlists and flashcards had already been known to the participants, vocabulary items were carefully selected from list number six, seven and eight, effectively preventing even upper-intermediate L2 English students from knowing their meanings.

As mentioned above, a total of 80 words were selected for the present study. Two types of strategies, flashcard and wordlist, were used in this study and all the 80 words were used in both strategies. In addition, the words used in both strategy groups were the same. These 80 words had one main feature: half of the words were concrete and the other half were abstract. In other words, out of 80 words, 40 words had concrete meanings (e.g., *coral*) and the other 40 had abstract meanings (e.g., *exuberant*).

3.2.3. Vocabulary Test 1

The first vocabulary test was based on all 80 words that the participants studied by means of flashcards and at the other time the same 80 words were studied by means of wordlists.

3.2.4. Vocabulary Test 2

The second test of vocabulary was distributed to the participants in the form of delayed posttest. The format and words were the same as the first vocabulary test. Just the order of the words were changed by the researchers in order to prevent the students from memorizing the order, and therefore, measure the students' retention of words more accurately.

3.3. Design of the Study

The study employed quasi-experimental design and the participants were selected using convenience sampling method. This study examined the outcomes; it compared the outcomes for students receiving the program activities with outcomes for similar group of students not receiving program activities named as control group.

3.4. Procedure

Before the treatment, 80 short answer vocabulary test items with a blank next to them, which had been administered to a pilot group, were used as a pretest by the researchers. During the pretest for all the three groups, the researchers were present and observed each student to avoid cheating. After the completion of pretest, each experimental group received one type of vocabulary learning strategy in the class. The treatment was given to two groups. The researchers gave flashcard and wordlist strategies for two experimental groups respectively. All of the 80 low frequency vocabulary words from the wordlists presented on Paul Nation's website, were taught for each group. The control group received the conventional method of PPP (Present, Practice and Produce). The treatment lasted for 10 minutes in each of the five sessions. The researchers in each group informed the participants that the vocabulary study session should be done individually without any discussion with their classmates and they just need to save their time and try to keep as many words as possible in their minds within the limited time. Also no use of cell phone and dictionary was allowed in this stage. After the treatment, 80 short answer vocabulary test items with a blank space

next to them were conducted as an immediate posttest for the three groups. In this test the order of words were changed to increase the content validity. Two weeks later, the delayed posttest consisting of 80 short answer vocabulary test items, was distributed among the three groups. This test measured the degree of vocabulary retrieval in the three groups.

3.5. Data Analysis

An ANOVA test was employed for analyzing the data. For a mixed-method ANOVA to represent valid results, it should adhere to the following five assumptions. The dependent variable must be measured at the continuous level. The within-subjects factor (i.e. within-subjects independent variable) should include at least two categorical, related, or matched pairs and at the same time, the between-subjects factor (i.e. between-subjects factor independent variable) should also include at least two categorical, independent groups. The groups containing within-subjects or between-subjects factor shouldn't have any significant outliers. Furthermore, for each combination of the groups consisting of the two sets of factors, the dependent variable should be normally distributed. Homogeneity of variances is also required for each combination of the groups. Moreover, the variances of the differences among the related groups of the within-subject factor for all groups of the between-subjects factor, known as sphericity, must be equal. Thus, since the data met these assumptions using SPSS Statistics, we can safely use mixed-method ANOVA to analyze the data.

Table 2: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
.889	.894	7

Cronbach's alpha is 0.889, which shows a high level of internal consistency of average cronbach alpha for each sub-scale including control, flashcard, wordlist, concrete, abstract, Persian words, and English words.

Table 3: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Control	280.2556	6741.496	.778	.639	.866
Flashcard	268.8556	6133.810	.819	.934	.855
Wordlist	268.9222	7044.971	.462	.510	.898
Concrete	264.2444	6411.737	.782	.834	.862
Abstract	269.2556	6326.934	.667	.539	.875

4. Results

Application of parametric statistical analyses is acceptable if a number of assumptions are recognized. The assumption of normality of the analyzed data was checked by computing the skewness and kurtosis ratios (i.e. skewness and kurtosis values divided by their standard error) from the table of descriptive statistics (Table 4). Since all the ratios were within $\pm$ 1.96, the data were regarded as normally distributed and therefore mixed ANOVA was conducted as a parametric test; it was required to verify homogeneity of variances of the data sets:

Table 4: Normality Test

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Control	30	16.00	70.00	34.6889	13.29412	.865	.254	-.120	.503
Flashcard	30	20.00	80.00	46.0889	17.07330	.380	.254	-.874	.503
Wordlist	30	16.00	80.00	46.0222	16.68612	.446	.254	-.692	.503
Concrete	30	3.00	80.00	45.6111	18.45961	.354	.254	-.708	.503
Abstract	30	16.00	80.00	46.6444	18.77801	.262	.254	-.893	.503

Valid (listwise)	N	30

Since all the ratios were within ±1.96, the data were considered normally distributed and therefore a parametric test was conducted.

4.1. Research Question One

Mixed between-within Subjects analysis of variance was employed to explore the impact of the flashcard and wordlist strategies on Iranian intermediate EFL learners' vocabulary retention, across three time periods. Table 5 provides the number of participants (N), mean scores, and Standard deviations (Std):

Table 5: Descriptive Statistics of Flashcard, Wordlist, and Control across Three Time Periods

	Groups	Mean	Std. Deviation	N
Pretest	Flashcard	35.44	11.425	30
	Wordlist	35.50	11.515	30
	Control	35.43	11.464	30
	Total	35.46	11.339	90
Immediate Posttest	Flashcard	40.63	12.845	30
	Wordlist	38.03	10.526	30
	Control	29.93	7.620	30
	Total	36.20	11.392	90
Delayed Posttest	Flashcard	62.33	13.100	30
	Wordlist	58.27	15.328	30
	Control	48.33	12.386	30
	Total	56.31	14.746	90

With regard to Table 5, there were not any significant differences among the mean scores of the flashcard (M= 35.44, Std= 11.42), wordlist (M=35.5, Std=11.51), and control group (M= 35.43, Std= 11.46) at the outset of the study. However, the mean score of the flashcard (M=40.63, Std= 12.84), wordlist (M=38.03, Std=10.52), and control group (M=29.93, Std= 7.62) differed at time 2. Moreover, their scores (flashcard group (M=62.33, Std= 13.1)), (wordlist group (M=58.27, Std= 15.32)), (and control group (M=48.33, Std=12.38)) increased in the delayed posttest.

Table 6: Box's Test of Equality of Covariance Matricesa of Flashcard and Wordlist Groups

Box's M	74.548
F	5.901
df1	12
df2	36680.538
Sig.	.07

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups

a. Design: Intercept + Group
Within Subjects Design: Time

Box's Test of Equality of Covariance Matrices shows a Sig. value that is greater than .05 for vocabulary learning and it shows that the assumption of equality of covariance is assumed.

Table 7: Multivariate Testsb of the Flashcard and Wordlist Strategies

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.723	112.474[a]	2.000	86.000	.000	.723
	Wilks' Lambda	.277	112.474[a]	2.000	86.000	.000	.723
	Hotelling's Trace	2.616	112.474[a]	2.000	86.000	.000	.723
	Roy's Largest Root	2.616	112.474[a]	2.000	86.000	.000	.723
Time * Group	Pillai's Trace	.277	6.988	4.000	174.000	.19	.138
	Wilks' Lambda	.723	7.559[a]	4.000	172.000	.19	.150
	Hotelling's Trace	.382	8.123	4.000	170.000	.19	.160
	Roy's Largest Root	.382	16.605[b]	2.000	87.000	.19	.276

a. Exact statistic
b. The statistic is an upper bound on F that yields a lower bound on the significance level.
c. Design: Intercept + Group
Within Subjects Design: Time

The sig. level for Wilks' Lambda in the time*group row (.19) is greater than alpha level of .05, indicating that the interaction effect is not significant. The next step is to assess the main effects for each of the independent variables. The sig. level for Wilks' Lambda in the time row (.00) is smaller than alpha level of .05, which indicates that the main effect is statistically significant. This suggests that there was a change in EFL learners' vocabulary development across three different time periods among different groups. The comparisons between specific groups or the so-called planned contrast or a simple custom contrast is illustrated in Table 8:

Table 8: Multiple Comparisons of Flashcard, Wordlist, and Control Groups

Measure: MEASURE_1

	(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Flashcard	Wordlist	2.20	2.500	.654	-3.76	8.16
		Control	8.23*	2.500	.004	2.27	14.20
	Wordlist	Flashcard	-2.20	2.500	.654	-8.16	3.76
		Control	6.03*	2.500	.047	.07	12.00
	Control	Flashcard	-8.23*	2.500	.004	-14.20	-2.27
		Wordlist	-6.03*	2.500	.047	-12.00	-.07
Games-Howell	Flashcard	Wordlist	2.20	2.618	.680	-4.12	8.52
		Control	8.23*	2.674	.009	1.79	14.68
	Wordlist	Flashcard	-2.20	2.618	.680	-8.52	4.12
		Control	6.03*	2.180	.020	.79	11.28
	Control	Flashcard	-8.23*	2.674	.009	-14.68	-1.79
		Wordlist	-6.03*	2.180	.020	-11.28	-.79

Based on observed means.
The error term is Mean Square (Error) = 93.778.
* The mean difference is significant at the .05 level.

The first null hypothesis was accepted since there was no statistically significant difference between the wordlist and flashcard strategies in terms of their effects on the retention of Iranian intermediate EFL learners' vocabulary development. However, both flashcard and wordlist groups differed significantly with the control group.

Table 9: Mauchly's Test of Sphericityb of the Flashcard and Wordlist Strategies

Measure:MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Square	Chi- df	Sig.	Epsilon[a]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Time	.550	51.359	2	.000	.690	.713	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

b. Design: Intercept + Group

Within Subjects Design: Time

Mauchly's Test of Sphericity (Table 9) indicated that the assumption of sphericity had been violated $(\chi^2(2) = 51.35, p = .00)$ for the flashcard and wordlist strategies.

Table 10: Levene's Test of Equality of Error Variances a of the Flashcard and Wordlist Strategies

	F	df1	df2	Sig.
Pretest	.001	2	87	.999
Immediate Posttest	5.007	2	87	.051
Delayed Posttest	1.494	2	87	.230

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group
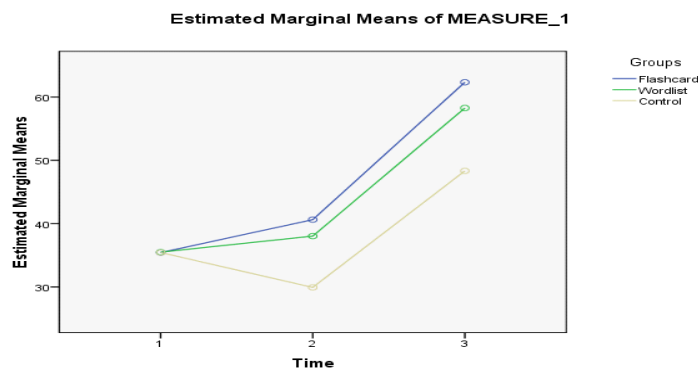
Within Subjects Design: Time

Moreover, in accordance with Levene's Test of Equality of Error Variances (Table 10), the sig. value is greater than alpha level (.05) for three time periods. This shows that the assumption of equality of variance is assumed.

Table 11: Tests of Between-Subjects Effects of the Flashcard and Wordlist Strategies

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	491264.033	1	491264.033	1746.192	.000	.953
Group	3270.867	2	1635.433	5.813	.004	.118
Error	24476.100	87	281.334			

As it is shown in Table 11, the sig value is .004. Therefore, there is a significant difference in the vocabulary development among the participants in the three different instructional methods (flashcard, wordlist, and control). Furthermore, the effect size of the between subject effect for the group which is demonstrated in the Tests of Between-Subjects Effects, is .11. The partial eta squared is large and it suggests that in comparison with the control group, there is a difference in the effectiveness of the two teaching strategies. It also indicates that the flashcard and the wordlist

Estimated Marginal Means of MEASURE_1

Chabahar Maritime University
Iranian Journal of English for Academic Purposes ISSN: 2476-3187
IJEAP, 2021, 10(1), 88-107 (Previously Published under the Title: Maritime English Journal

groups outperformed the control group.

Figure 1: Comparison of Flashcard, Wordlist, and Control Group.

Here we can see that there is a general increase from left to right. This would suggest that we might have both a significant linear and a significant quadratic component on EFL learners' vocabulary retention.

4.2. Research Question Two

Mixed between-within Subjects analysis of variance was used to explore the effect of the concrete and abstract words on the retention of Iranian EFL learners' vocabulary development across three time periods. Table 12 provides the number of participants (N), the mean scores, Standard deviations (Std):

Table 12: Descriptive Statistics of Concrete, Abstract, and Control across Three Time Periods

	Groups	Mean	Std. Deviation	N
Pretest	Concrete	36.33	10.548	30
	Abstract	35.20	8.356	30
	Control	35.43	11.464	30
	Total	35.66	10.103	90
Immediate Posttest	Concrete	46.3333	5.85063	30
	Abstract	40.4000	18.05280	30
	Control	29.9333	7.62000	30
	Total	38.8889	13.51856	90
Delayed Posttest	Concrete	69.43	3.036	30
	Abstract	61.47	15.527	30
	Control	48.33	12.386	30
	Total	59.74	14.425	90

With regard to Table 12, no significant differences among the mean scores of the concrete (M= 36.33, Std= 10.54), abstract (M=35.2, Std=8.35), and control group (M= 35.43, Std= 11.46) were observed at the outset of the study. However, the mean score of the concrete (M=46.33, Std= 5.85), abstract (M=40.4, Std=18.05), and control group (M=29.93, Std= 7.62) differed significantly at time 2. Moreover, their scores (concrete group (M=69.43, Std= 3.03)), (abstract group (M=61.47, Std= 15.52)), (and control group (M=48.33, Std=12.38)) increased at delayed posttest.

Table 13: Box's Test of Equality of Covariance Matricesa of Concrete and Abstract Groups

Box's M	133.100
F	10.536
df1	12
df2	36680.538
Sig.	.08

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.
a. Design: Intercept + Group
Within Subjects Design: Time

Box's Test of Equality of Covariance Matrices shows a Sig. value that is greater than .05 for vocabulary learning and it shows that the assumption of equality of covariance is assumed.

Table 14: Multivariate Testsb of the Concrete and Abstract Groups

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.772	145.507[a]	2.000	86.000	.000	.772
	Wilks' Lambda	.228	145.507[a]	2.000	86.000	.000	.772
	Hotelling's Trace	3.384	145.507[a]	2.000	86.000	.000	.772
	Roy's Largest Root	3.384	145.507[a]	2.000	86.000	.000	.772

		Pillai's Trace	.328	8.535	4.000	174.000	.07	.164
Time Group	*	Wilks' Lambda	.672	9.454[a]	4.000	172.000	.07	.180
		Hotelling's Trace	.488	10.370	4.000	170.000	.07	.196
		Roy's Largest Root	.488	21.218[b]	2.000	87.000	.07	.328

a. Exact statistic

b. The statistic is an upper bound on F that yields a lower bound on the significance level.

c. Design: Intercept + Group

Within Subjects Design: Time

The sig. level for Wilks' Lambda in the time*group row (.07) is greater than alpha level of .05 which shows that the effect of interaction is not significant. Moreover, the sig. level for Wilks' Lambda in the time row (.00) is smaller than alpha level of .05, which indicates that the main effect is statistically significant. This suggests that there was a change in EFL learners' vocabulary development across three different time periods among different groups. The comparisons between specific groups or the so-called planned contrast or a simple custom contrast is demonstrated in Table 15:

Table 15: Multiple Comparisons of Concrete, Abstract, and Control Groups

Measure: MEASURE_1

	(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Tukey HSD	Concrete	Abstract	5.0111[*]	1.92461	.029	.4219	9.6003
		Control	12.8000[*]	1.92461	.000	8.2108	17.3892
	Abstract	Concrete	-5.0111[*]	1.92461	.029	-9.6003	-.4219
		Control	7.7889[*]	1.92461	.000	3.1997	12.3781
	Control	Concrete	-12.8000[*]	1.92461	.000	-17.3892	-8.2108
		Abstract	-7.7889[*]	1.92461	.000	-12.3781	-3.1997
Games-Howell	Concrete	Abstract	5.0111[*]	1.74060	.016	.8014	9.2208
		Control	12.8000[*]	1.83004	.000	8.3682	17.2318
	Abstract	Concrete	-5.0111[*]	1.74060	.016	-9.2208	-.8014
		Control	7.7889[*]	2.17569	.002	2.5551	13.0227
	Control	Concrete	-12.8000[*]	1.83004	.000	-17.2318	-8.3682
		Abstract	-7.7889[*]	2.17569	.002	-13.0227	-2.5551

Based on observed means.

The error term is Mean Square (Error) = 55.562.

*. The mean difference is significant at the .05 level.

The second null hypothesis was rejected since statistically significant difference was also observed among the abstract, concrete, and control groups in terms of their effects on the retention of Iranian EFL learners' vocabulary development at an intermediate level. The concrete group outperformed

Chabahar Maritime University
Iranian Journal of English for Academic Purposes   ISSN: 2476-3187
IJEAP, 2021, 10(1), 88-107   (Previously Published under the Title: Maritime English Journal

the abstract group. Furthermore, both abstract and concrete groups differed significantly with the control group.

Table 16: Mauchly's Test of Sphericityb of the Concrete and Abstract Groups

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Square	Chi- df		Sig.	Epsilon[a]		
						Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Time	.946	4.818	2		.090	.948	.991	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Maybe used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.
b. Design: Intercept + Group
Within Subjects Design: Time

Mauchly's Test of Sphericity (Table 16) showed that the assumption of sphericity had been assumed, $\chi^2 (2) = 4.81$, $p = .09$, for the concrete and abstract groups.

Table 17: Levene's Test of Equality of Error Variancesa of the Concrete and Abstract Groups

	F	df1	df2	Sig.
Pretest	1.435	2	87	.244
Immediate Posttest	24.243	2	87	.872
Delayed Posttest	21.062	2	87	.565

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Group
Within Subjects Design: Time

Moreover, in accordance with Levene's Test of Equality of Error Variances (Table 17), the sig. value is greater than alpha level (.05) for three time periods. It shows that equality of variance assumption is assumed.

Table 18: Tests of Between-Subjects Effects of the Concrete and Abstract Groups

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	541005.170	1	541005.170	3245.668	.000	.974
Group	7488.541	2	3744.270	22.463	.000	.341
Error	14501.622	87	166.685			

As it is shown in Table 18, the sig value is .00. Therefore, there is a significant difference in the vocabulary development among the participants in the three different instructional methods (concrete words, abstract words, and control). Furthermore, the effect size of the between subject effect for the group which is given in the Tests of Between-Subjects Effects is .34. The partial eta squared is very large and it suggests that the two teaching strategies are diffrerent from the control group, in terms of usefulness and effectiveness. It also indicates that the participants of concrete group outperformed the abstract group.

Chabahar Maritime University
Iranian Journal of English for Academic Purposes   ISSN: 2476-3187
IJEAP, 2021, 10(1), 88-107   (Previously Published under the Title: Maritime English Journal
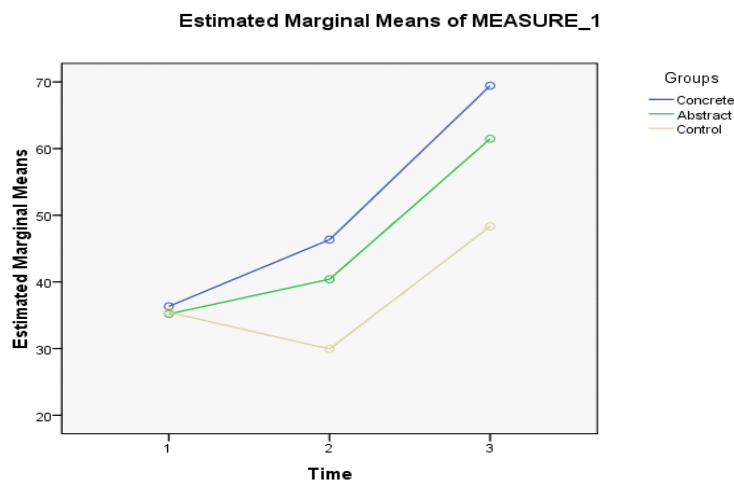
Figure 2. Comparison of Concrete, Abstract, and Control Group.

Here we can see that there is a general increase from left to right. This would suggest that we might have both a significant linear and a significant quadratic component on EFL learners' vocabulary retention.

5. Discussion and Conclusion

Vocabulary knowledge is a fundamental component of a learner's general proficiency in a second/foreign language, and it is a prerequisite for successful communication, (Nation, 2001). The aim of the present study was to investigate the effects of flashcard vs. wordlist strategies, and concrete vs. abstract words on Iranian intermediate EFL university students' vocabulary development. As stated earlier, this study included two research questions, which were investigated and analyzed.

First of all, the findings of this study indicated that the two experimental groups which used flashcard and wordlist strategies outperformed the control group which did not used these vocabulary learning strategies during the immediate and delayed posttests. This is in agreement with Nation`s (2001) statement, who argued that vocabulary strategies are useful and can be helpful in increasing students' vocabulary level.

Second, in light of the literature in the field that has already been reviewed, the findings of the present study retained the first null hypothesis and demonstrated that there was not a statisticant difference between the average scores of the participants when learning words with flashcards and wordlists, both during the immediate posttest and the delayed posttest. This finding is consistent with Jo's (2018) study, who found out that the retention of the words learned through flashcard and wordlist were the same. Moreover, Baleghizadeh and Ashoori (2011) did not find compelling evidence that supports the remarkable superiority of flashcards over wordlists in their research. Furthermore, Norein Osman and Alhomoud's (2015) research demonstrated that there were not any significant difference between the flashcard and wordlist words.

On the contrary, it was hypothesized that flashcards would lead to better learning than wordlists (Mondria & Mondria-de Vries, 1994; Nakata, 2008; Schmitt & Schmitt, 1995), because flashcards tend to be more flexible and students can categorize them based on their difficulty. But it should be noted that, the hypothesis which states that flashcards can result in better learning than wordlists, is only partially supported by the findings of the current study. In other words, based on the results from the delayed posttest, in which the average score from flashcards is slightly higher than that of wordlists, albeit it is not statistically significant either, it might be inferred that the words memorized using flashcards remain for a longer period of time in the learners' memory than words memorized using wordlists. This suggests that the advantage of flashcards over wordlists is limited. There seems to be two main reasons for this contrast. The first one relates to time duration.

Chabahar Maritime University
Iranian Journal of English for Academic Purposes   ISSN: 2476-3187
IJEAP, 2021, 10(1), 88-107   (Previously Published under the Title: Maritime English Journal

Since the students learned 80 new English words for less than twenty minutes during study sessions, they did not have sufficient time for evaluation of the words' level of difficulty. The second reason relates to the participants' lack of meta-cognitive abilities. They saw no difference between flashcards and wordlists.

The findings of the present study rejected the second null hypothesis and indicated that there was a statistically significant difference between the effects of concrete and abstract words on the retention of Iranian intermediate EFL learners' vocabulary development. The concrete words are more likely to be recalled by students compared to abstract words. This finding is in line with Fliessbach, Weis, and Klaver's (2006) study who contended that concrete words are generally superior to abstract ones since they lead to better remembrance. Moreover, De Groot and Keijzer's (2000) research support the findings of this study. They mentioned that with regard to cognitive processing, concrete words have advantage over abstract ones.

The current study is also in agreement with the findings of West and Holcomb (2000) who believed that in comparison with abstract words, learning concrete words were easier and they were less prone to forgetting. Despite the beliefs about the fact that concrete words are remembered easier and better than abstract words, this study goes against the finding by Richmond and Ninch (1977) stating that as previously assumed, abstractness or concreteness may not be an important and deciding factor in learning of words.

Although this study had a relatively small sample and the results should be interpreted with caution, the following implications for pedagogically useful practice may be drawn from this research. Using a variety of methods and approaches has proved effective and efficient. If these approaches match learners' preferences and capabilities, they can be even more effective. It has been argued by many scholars that these strategies, if applied correctly, empower and motivate learners and help teachers and material developers to choose the teaching materials which facilitate the process of learning and teaching. English teachers can also use the present findings to develop recognition task types to both develop and test the vocabulary knowledge of the learners.

6. Suggestions for Further Research

With regard to the major results of the current study, the following avenues for further research are recommended for those who are interested in the field:

1. Since this study was limited to the intermediate level, it is recommended that the future researchers investigate the effects of employing these strategies on other proficiency levels to determine the most appropriate levels for the implementation of flashcard and wordlist strategies for teaching vocabulary.

2. The current study could be taken as a model and be replicated and extended to larger samples specifically.

3. Even though our findings shed light on vocabulary knowledge, a longitudinal study would be more informative since it will probably make stronger claims about the effects of flashcard and wordlist strategies on vocabulary development.

4. Other similar studies could be carried out focusing on different time and intervals to reach an appropriate tentative time required for the learners to develop a desired bulk of words.

References

Alduais, A. M. S., & Almukhaizeem, Y. S. (2015). On Arabic abstract and concrete words recall using free, cued, and serial recall paradigms: Is it abstractness, concreteness, or zero effect? *Advances in Applied Psychology*, *1*(1), 51-72.

Azabdaftari, B. & Mozaheb, M. A. (2012). Comparing vocabulary learning of EFL learners by using two different strategies: Mobile learning vs. flashcards. *The EUROCALL Review*, *20*(2), 47-59.

Baleghizadeh, S., & Ashoori, A. (2011). The impact of two instructional techniques on EFL learners' vocabulary knowledge: Flash cards versus wordlists. *Mextesol Journal, 35*(2), 1-9.

Brown, H. D. (2000). *Principles of language learning and teaching* (4th Ed.). New York, NY: Addison Wesley Longman.

Carrell, R. (1984). Schema theory and ESL reading: Classroom implications and applications. *Modern Language Journal, 68*(4), 332-343.

Cohen, A. D. (1990). *Language learning: Insights for learners, teachers, and researchers*. Boston, Mass: Heinle and Heinle Publishers.

Cuvo, A. J. & Klatt, K. P. (1992). Effects of community-based, videotape, and flash-card instruction of community-referenced sight words on students with mental retardation. *Journal of Applied Behavior Analysis, 25*(2), 499-512.

De Groot, A. M. B., & Keijzer, R. (2000). What is hard to learn is easy to forget: The roles of words concreteness, cognate status, and word frequency in foreign-language vocabulary learning and forgetting. *Language Learning, 50(1), 1-56.*

Ehri, L. C., & Roberts, K. T. (1979). Do beginners learn printed words better in contexts or in isolation? *Child Development, 50*(3), 675-685.

Ervin, G. L. (1988). Purposeful practice with the four-by-six card: Quick, convenient, and communicative. *Foreign Language Annals*, *21*(4), 337-339.

Fliessbach, K., Weis, S., Klaver, P., Elger, C. E., & Weber, B. (2006). The effect of word concreteness on recognition memory. *NeuroImage*, *32*(3), 1413-1421.

Gairns, R., & Redman, S. (1990). *Working with words: A guide to teaching and learning vocabulary.* Cambridge: Cambridge University Press.

Haberlandt, K. F., & Graesser, A. C. (1985). Component processes in text comprehension and some of their interactions. *Journal of Experimental Psychology: General, 114,* 357–375.

Harad, L., & Coch, D. (2009). Remembering abstract vs. concrete words. Poster presented at the 18th Annual Wetterhahn Undergraduate Science Poster Symposium, Women in Science Project (WISP), Dartmouth College, Hanover, New Hampshire, and USA.

Holmes, V. M., & Langford, J. (1976). Comprehension and recall of abstract and concrete sentences. *Journal of Verbal Learning and Verbal Behavior, 15,* 559–566.

Hsiao-Yun, H. Yihsiang, K. (2012). Effects of word card strategy versus wordlist strategy on Taiwanese EFL junior high school students' vocabulary retention. *Electronic Journal of Foreign Language Teaching, 9*(1), pp. 26–45.

Hudson, T. (1982). The effects of induced schemata on the 'short-circuit' in L2 reading performance: Non-decoding factors in L2 reading performance. *Language* Learning, *32*; 1-31.

Jefferies, E., Patterson, K., Jones, R. W., & Lambon Ralph, M. A. (2010). Comprehension of concrete and abstract words in semantic dementia. *Neuropsychology*, *23*(4): 492–499.

Jo, G. (2018). English vocabulary learning with wordlists vs. flashcards; L1 definitions vs. L2 definitions; abstract words vs. concrete words. M.A. Thesis, St. Cloud State University.

Jordan, R. R. (2000). English for academic purposes. Cambridge: CUP.

Klee, H., & Eysenck, M. W. (1973). Comprehension of concrete and abstract sentences. *Journal of Verbal Learning and Verbal Behavior, 12,* 522–529.

Komachali, M. E., & Khodareza, M. (2012). The effect of using vocabulary flashcard on Iranian pre-university students' vocabulary knowledge. *Canadian Center of Science and Education Journal, 5*(3), 134-147.

Laufer, B., & Shmueli, K. (1997). Memorizing new words: Does teaching have anything to do with it? *RELC Journal, 28*(1), 89–108.

Lewis, M. (1993). *The lexical approach: The state of ELT and a way forward* (1st Ed.) Hove, UK: Language Teaching Publications.

Lin, S. Y. (2009). The effects of memorizing wordlists on vocabulary learning and reading (Master's thesis). *National Taiwan Normal University, Taiwan.*

Lu, C. (2004). The effects of reading articles and memorizing wordlists on EFL high school students' reading and vocabulary abilities (Master's thesis). *National Taiwan Normal University, Taiwan.*

Marschark, M., & Paivio, A. (1977). Integrative processing of concrete and abstract sentences. *Journal of Verbal Learning and Verbal Behavior, 16,* 217–231.

Marschark, M., & Paivio, A. (1977). Integrative processing of concrete and abstract sentences. *Journal of Verbal Learning and Verbal Behavior, 16,* 217–231.

Mehrpour, S. (2008). A comparison of the effects of two vocabulary teaching techniques. *Asian EFL Journal, 10*(2), 192–209.

Mojarradi, S. (2014). The effect of using flashcards on ESL (English as a Second Language) students" ability to learn vocabulary. *International Journal of Scientific World, 2*(2), 56-61.

Mondria, J. A. & Mondria-de Vries, S. (1994). Efficiently memorizing words with the help of word cards and "hand computer": Theory and applications. *System, 22*(1), 47-57.

Nakata, T. (2008). English vocabulary learning with wordlists, word cards and computers: Implications from cognitive psychology research for optimal spaced learning. *ReCALL*, *20*(1), 3-20.

Nation, P. (2001). *Learning vocabulary in another language*. Cambridge: CUP.

Nelson, D. L., & Schreiber, T. A. (1992). Word concreteness and word structure as independent determinants of recall. *Journal of Memory and Language, 31,* 237–260.

Norein Osman, S. & Alhomoud, F. A. (2015). Flash cards vs. wordlists for vocabulary building among Majmmah high school students. *Journal of Human and Administrative Sciences* , 7, 1-19.

Oxford, R. L. & Crookal, D. (1990). Vocabulary learning: A critical analysis of techniques. *TESL Canada Journal, 7*(2), 9-30.

Paivio, A., Walsh, M., & Bons, T. (1994). Concreteness effects on memory: When and why? *Journal of Experimental Psychology: Learning, Memory, and Cognition, 20,* 1196–1204.

Piribabadi, A. & Rahmany, R. (2014). The effect of the keyword method and word-list method instruction on ESP vocabulary learning. *Journal of Language Teaching and Research, 5*(5), 1110-1115.

Qian, D. D. (1996). ESL vocabulary acquisition: Contextualization and decotextualization. *The Canadian Modern Language Review, 53*(1), 120–142.

Qian, D. D. (1996). ESL vocabulary acquisition: Contextualization and decotextualization. *The Canadian Modern Language Review, 53*(1), 120–142.

Richmond, M. & Ninch, G. (1977). Word learning: Concrete vs. abstract acquisition. *Perceptual and Motor Skills*, *45*(1), pp.292-294.

Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition and pedagogy* (pp. 199-227). Cambridge: CUP.

Schmitt, N., & Schmitt, D. (1995). Vocabulary notebooks: Theoretical underpinnings and practical suggestions. *ELT Journal, 49*(2), 133-143.

Schwanenflugel, P. J., & Shoben, E. (1983). Differential context effects in the comprehension of abstract and concrete verbal materials. *Journal of Experimental Psychology: Learning, Memory and Cognition, 9,* 82–102.

Schwanenflugel, P. J., Akin, C., & Luh, W. (1992). Context availability and the recall of abstract and concrete words. Memory & Cognition (Pre-2011), *20*(1), 96-104. Retrieved From http://search.proquest.com/docview/217453817?accountid=14 2908.

Sitompul, E. Y. (2013). Teaching vocabulary using flashcards and wordlist. *Journal of English and Education*, *1*(1), 52-58.

Suyanto. (2008). *Home for young learners*. London: Earth Literacy.

Swaffar, J. K. (1988). Readers, texts, and second languages: The interactive processes. *Modern Language Journal*, *72*(2), 123-149.

Taghizadeh, M. & Porkar, P. (2018). Tablet, flashcard and SMS and their effects on EFL learners' attitudes and vocabulary knowledge. *International Journal of English Language & Translation Studies, 06*(01), 105-118.

Tatsuya, N. (2008). English vocabulary learning with wordlists, word cards and computers: Implications from cognitive psychology research for optimal spaced learning, *ReCALL, 20*(1), 3-20.

Thornbury, S. (2002). *How to teach vocabulary*. Pearson Education Limited.

Van Benthuysen, R. (2003). Explicit vocabulary instruction: Using a wordlist to focus attention. *Journal of Bunkyo Gakuin University*, *2*, 89-96.

Walker, I. and Hulme, C. (1999). Concrete words are easier to recall than abstract words: Evidence for a semantic contribution to short-term serial recall. *Journal of Experimental Psychology*, *25*(5),1256-1271.Retrieved   from: http://search.proquest.com/docview/214370571?accountid=142908.

West, W. C., & Holcomb, P. J. (2000). Imaginal, semantic, and surface-level processing of concrete and abstract words: An electrophysiological investigation. *Journal of Cognitive Neuroscience, 12*(6), 1024-1037. Retrieved from http://search.proquest.com/docview/72554202?accountid=142 908.