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## The Effect of Deliberate Versus Incidental Vocabulary Learning Strategy on Iranian High School Students' Vocabulary Learning

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### Abstract

The main purpose of this study was to compare incidental and deliberate vocabulary learning strategy on acquisition of vocabulary among Iranian EFL elementary learners. 75 students were chosen randomly among 150 elementary female students in second grade high school who was studying English language in computer course in second grade of high school. Then PET Test was administered to 75 students and 50 homogenous learners were selected and divided into two groups of experimental 1 and experimental 2 each with 25 learners. Experimental 1 group with 25 students in the incidental learning context, using textual-pictorial glosses for teaching vocabulary and the experimental 2 group with 25 students in the deliberate learning context, using digital flashcards with picture and meaning for teaching vocabulary. At end, the posttest of vocabulary was administered and desired calculations were run.

The results of the independent t-test ( $t(48) = 4.75, p = .000, r = .566$  representing a large effect size) indicated that there was a significant difference between the two groups' mean scores on the posttest of vocabulary. The deliberate vocabulary learning strategy group significantly outperformed the incidental group on the posttest of vocabulary.

**Keywords:** Incidental vocabulary learning, deliberate vocabulary learning, Glosses

### Introduction

Learning a second or foreign language involves the acquisition of thousands of words (Celce-Murcia, 2001), and language learners look for the most effective ways to increase opportunities for learning and retaining new words in their long-term memory. Some researchers demonstrated that lexical development plays a principal role in different aspects of L2 acquisition, particularly reading (DeBot et al., 1997; McLaughlin, 1980; Salaberry, 2001; Segler et al., 2002). It is generally accepted that a considerable percentage of learners' L2 vocabulary is acquired incidentally. Huckin and Coady (1999) highlight the importance of incidental vocabulary learning by referring to several studies indicating that learners gain more vocabulary knowledge through extensive reading with guessing at the meaning of unknown words. However, despite the obvious advantages, there are also a number of disadvantages for incidental vocabulary learning. For example, research suggests that contextual information is often unclear for language learners to make correct inferences (Bensoussan & Laufer, 1984; Mondria & Wit-de Boer, 1991), leading to learners' making wrong inferences and, thus, running the risk of learning words incorrectly. Interestingly; however, one of the ways such a disadvantage might be alleviated is by using marginal glosses (Hulstijn, Hollander & Greidanus, 1996), which has proved quite effective in printed materials. And so research says that direct and deliberate learning is more effective, focused and goal-directed than incidental learning (Nation & Meara 2010). It results in a very quick (and longstanding) expansion of vocabulary size which then needs to be consolidated and enriched through meaning-focused input and output, and fluency development. There are guidelines for the use of word cards. 1. Retrieve rather than recognize. Small card (connection between form and meaning) 2. Use appropriately sized groups of cards. About 15 or 20 words (more than 50 seem to be unmanageable). 3. Space the repetitions. The best spacing (a few minutes later, then an hour, a day, a week,) 4. Repeat the words aloud or to yourself. (Enhance chance of going into long-term memory) 5. Process the words thoughtfully. Use depth processing technique like the keyword technique.

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Think of word in language context and visualize it in situational context, break the word into parts, the more association for better remembering.6. Avoid interference. Similar spelling or of related meaning or of the same category are not together in the same pack of cards. They should not be learned at the same time. 7. Avoid serial learning effect. Keep changing the order of words in the pack.8. Use context where this helps. Write collocate of words. Some words are most usefully learned in a phrase or sentence.

### Statement of the Problem

The needs of learners and the usefulness of the vocabulary items are crystal clear in learning language and communicating. Learners need to keep on learning the words. But they should do this incidentally or deliberately in their own time. Teachers should focus on strategies that help learners do this 'incidental' or 'deliberate' learning. These strategies include guessing from context, learning from word cards, using word parts, dictionary use and multimodality. Methods of learning words with or without deliberate attempts are known as the intentional versus incidental learning in vocabulary research. While each approach has its merits and proponents, but some researches show that learners learn bulk of vocabulary through incidental learning and some show that deliberate vocabulary learning is better. The researcher tries to examine these two differences. How we make sure that which strategy is better for the situation with shortage of time. The incidental learning often requires long-term and extensive exposure to linguistic input and such naturalistic language learning conditions are not commonplace in English as foreign language (EFL) contexts or other foreign language learning environments. In contrast, intentional learning of vocabulary speeds up learners' process of lexical development due to focused repetition or memorization strategies, which can be completed individually in a short period of time. It has also been argued that the retention rates of intentional vocabulary learning are generally higher than those obtained with incidental learning (Hustijn, 2003), suggesting that deliberate attempts to learning vocabulary are effective and worth the effort. Although the researchers have conflicting views, most of them have differentiated between meaningful and rote learning. Rote learning, as the name suggests, is concerned with particular vocabulary learning styles, enabling language learners to learn unknown words in isolation. On the other hand, when language learners use particular learning styles, enabling them to be engaged in meaningful learning, strong connections are made between new unknown vocabularies and already existing cognitive structures. Although it is clear that using both strategies are so helpful and so much better. But with lack and shortage of time it is to somehow impossible to do this. Researcher should determine which one more advocates and helps pupils to learn better and more in the small scope of time in Iranian high schools. And make sure that the best practice makes perfect.

### Research Question

According to the variety of researches in this category, we saw that both of these strategies are important and useful. And this rise a question in my mind those which of these are more appropriate and time consuming for vocabulary learning.

Q- Does incidental and deliberate vocabulary strategies have the same effect on Iranian high school students' vocabulary learning?

### Research Hypothesis

Based on the research question above the following hypothesis was proposed.

$H_0$  - Incidental and deliberate vocabulary strategies do not have the same effect on Iranian high school students' vocabulary learning?

### Purpose of the Study

This research tries to show the significant differences between incidental and deliberate vocabulary learning. Vocabulary learning needs to be more broadly based than just direct teaching of words in the classroom. Four strands of vocabulary need to be in roughly equal proportions in a well-balanced language course. Deliberate vocabulary teaching has three major goals. First, it can aim to result in well-established vocabulary learning. This requires 'rich instruction' (Beck, McKeown and Omanson, 1987:149). This involves spending a reasonable amount of time on each word and focusing on several aspects of what is involved in knowing a word? Second, deliberate vocabulary teaching can have the aim of simply raising learner's consciousness of particular words so that they are noticed when they are met again. Cumulative learning of vocabulary leads to implicit knowledge. Third, Deliberate vocabulary teaching can have the aim of helping learners gain knowledge of strategies and of systematic features of the language that will be of use in learning a large number of words.

In the other case, Research suggests that a large portion of the vocabulary children learn in their L1 is incidental in nature, a by-product of reading (Huckin & Coady, 1999) or listening (Nagy, Anderson & Herman, 1987) which provides at least three benefits for language learners: 1. A richer grasp of the contextual meaning and use. 2. The concurrency of the two activities (e.g., reading/listening and vocabulary learning). 3. A more learner-centered learning process. In incidental vocabulary learning based on the way a word is used in a text learners are able to determine its meaning. While learners may not know what a specific word means, they can determine its meaning based on textual-pictorial glosses. They should use this sort of incidental vocabulary learning to help them to develop their vocabularies.

### Significance of the Study

Because vocabulary knowledge is critical to learning language, it is important that those working with young readers help foster their development of a large "word bank" and effective vocabulary learning strategies. There are several effective deliberate (explicit, intentional, planned instruction) and incidental (implicit, spontaneous instruction as a child comes to new words in a text) strategies that adults can employ with readers of any age. One of the most effective methods of helping children learn new vocabulary words is to teach unfamiliar words used in a text. Researcher should preview reading materials to determine which words are unfamiliar. Then the text is accompanied by textual and pictorial definition, and then these words should be defined and discussed. It is important to discuss its meaning. This allows the children

to develop an understanding of the word's connotations as well as its denotation. Also, discussion provides the adult with feedback about how well the children understand the word.

The other most effective methods of helping children learn new vocabulary words is Deliberate vocabulary teaching which it can take a variety of forms including: pre-teaching of vocabulary before a language use activity. Dealing with vocabulary in variety of ways during intensive reading. Exercises that follow a listening or reading text, such as matching words and definitions, creating word families using word parts or semantic mapping. Self-contained vocabulary activities like the second-hand cloze (Laufer and Osimo, 1991) Word detectives, where learners report on words they have found, Collocation activities. Quickly dealing with words they occur in a lesson.

### Review of the Related Literature

Shahrokni, S.A. (1999) has done an empirical study which investigates the effect of online textual, pictorial, and textual pictorial glosses on the incidental vocabulary learning of 90 adult elementary Iranian EFL learners. The participants read the texts for comprehension and, at the same time, were able to consult the glosses attached to the target words. Having read each text under each research condition, the participants were tested on their incidental vocabulary learning through two research instruments, word and picture recognition tests. The results of analysis of the data indicate that a combination of text and still images resulted in significantly better incidental vocabulary learning. (Paivio, 1971, 1990).

Watanabe (1997) investigated how text modification and task would affect incidental vocabulary learning. This study, which was carried out with Japanese university students, indicated that the use of L2 glosses in the texts helped the participants retain more vocabulary compared to when they worked with texts containing no modifications, or appositives. This study also established no significant difference in the effectiveness of L1 and L2 glosses. Furthermore, the research compared single- and multiple-choice glosses. The participants were required to choose the correct definition from the two alternatives offered, which revealed no significant difference in the effectiveness of the two types. However, this finding might be slightly different from what Nagata (1999) revealed based on a Japanese courseware program called Banzai Readings. A similar study by Yoshii and Flaitz (2002), by comparison, examined the learners' incidental vocabulary learning through incorporating the task into an online computerized environment.

Hung, H.T. (2015) has done an attempt to follow through on the claims made by proponents of intentional vocabulary learning, the present study set out to examine whether and how digital flashcards can be incorporated into a university course to promote the vocabulary learning of English language learners. The overall research findings underscore the value of learning vocabulary with digital flashcards as an alternative to more conventional resources, and draw attention to the relative merits of embedding digital flashcards in collaborative learning tasks in classroom settings. The article then supports intentional vocabulary learning.

### Methodology

#### Participants

In the present study there was a sample of 50 elementary level EFL learners studying English in computer course at Asadabad Hesabi girl high school (Art). At first, from the population of 150 learners, 75 students were randomly selected and based on their scores on pretest of vocabulary, 50 homogeneous participants were selected. Experimental1 group with 25 students in the incidental learning context, using textual-pictorial glosses for teaching vocabulary and the experimental2 group with 25 students in the deliberate learning context, using digital flashcards for teaching vocabulary.

#### Instrumentation

Instruments used for data collection in the study included paper – based test. PET test was used for producing homogenous groups. Vocabulary of first, second, third lesson of book2 high school was thought during three sessions. The text that selected for this exam was just from that parts of learners' textbook. For this purpose, 20 vocabulary items in the multiple-choice format were prepared for both pre and posttest.

#### Procedure

In this study, in order to encourage the participants to participate without anxiety, the participants were informed about the aims and the purposes of the study. Seventy five students were chosen randomly among 150 elementary female students in second grade high school who was studying English language in computer course in second grade of high school. Then PET Test was administered to 75students. And then based on their scores on pretest of vocabulary, 50 homogeneous participants were selected. Experimental1 group with 25 students in the incidental learning context, using textual-pictorial glosses for teaching vocabulary and the experimental2 group with 25 students in the deliberate learning context, using digital flashcards for teaching vocabulary.

In the course under investigation, the students met one session, 1.30 hours per week and it was lasted for three weeks in a multimedia classroom, which was equipped with an individual desktop computer for each seat. Each student had English-Persian dictionary and some pictures related to the vocabulary which was going to be learned, in her own system. Students were familiar with PowerPoint program. They used this program to make flashcards. They matched the finding words with their definition with related pictures in flashcards. In this case students had more concentration by using their productive skill (writing) for learning new vocabularies. In other words, the learner-generated flashcards could be practiced in various learning activities or used in their tablets/cellphones or were printed out in different layout options to mimic traditional materials, such as word cards, word lists, and quizzes. It is more helpful and worthy because the students cooperated in making them. In this course, this was implemented as an intentional vocabulary learning tool for use in a vocabulary learning task, which were required the students to use 30 words for each session to create their own digital flashcards for vocabulary learning. A 30-minute self-study session was set aside for the students to log into their personal folder for task completion on a weekly basis for duration of three weeks. The flashcard content had to contain aspects

of word knowledge, with the form and part of speech of each vocabulary item on one side of a flashcard, and its meaning on the other (i.e. L1 translation and L2 usage in the form of collocations or sentences). The completion of these vocabulary learning tasks accounted for 20 percent of the course grade. The students were also encouraged to practice their digital flashcards as a means to review the course content out of class.

The same reading was given to the second group, text with textual-pictorial glosses. During three weeks and three sessions of instruction, six computerized reading texts including thirty target words were studied. The participants read the texts for comprehension and, at the same time, were able to consult the glosses attached to the target words. Having read each text under each research condition.

**Results and Discussion**

**Results**

**Testing Normality Assumption**

The major objective of this study is to investigate the effect of incidental and deliberate vocabulary strategies on the improvement of Iranian high school students' vocabulary learning; through the following null-hypothesis;

H<sub>0</sub>: Incidental and deliberate vocabulary strategies do not have the same effect on Iranian

high school students' vocabulary learning.

The present data were analyzed through independent-samples t-test which assume normality of the data. As displayed in Table 1, the ratios of skewness and kurtosis over their respective standard errors were within the ranges of +/- 1.96; hence normality of the data.

**Table 1:** Testing normality assumptions

	Group	N	Mean Std.	Deviation Std.	Error Mean
PET	incidental	25	25.32	7.962	1.592
	deliberate	25	24.72	9.736	1.947

The assumption of homogeneity of variances will be reported when discussing the results of the independent-samples t-test.

**PET General Language Proficiency Test**

An independent t-test was run to compare the deliberate and incidental groups' means on the PET test in order to prove that they enjoyed at the same level of general language proficiency prior to the main study. Based on the results displayed in Table 2 it can be claimed that the incidental (M = 25.32, SD = 7.96) and the deliberate (M = 24.72, SD = 9.73) groups had almost the same means on the PET test.

**Table 2:** Descriptive statistics; PET by groups

	Group	N	Mean Std.	Deviation Std.	Error Mean
PET	incidental	25	25.32	7.962	1.592
	deliberate	25	24.72	9.736	1.947

The results of the independent t-test ( $t(48) = .239, p = .812, r = .034$  representing a weak effect size) (Table 3) indicate that there was not any significant difference between the two groups' mean scores on the PET test. Thus it can be claimed that they enjoyed at the same level of general language proficiency prior to the main study.

**Table 3:** Independent samples t-test, PET by groups

Levene's Test for Equality of Variances									
t-test for Equality of Means									
Variances									
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.157	.288	.239	48	.812	.600	2.515	-4.458	5.658
Equal variances not assumed			.239	46.180	.813	.600	2.515	-4.463	5.663

Note. The negative 95 % lower bound confidence interval of -4.45 indicated that the difference between the two groups' means on the PET could have been zero. Thus the above mentioned conclusion as no significant difference between the two groups' means was correctly made.

It should be noted that the assumption of homogeneity of variances was met (Levene's  $F = 1.15, p = .288$ ). That is why the first row of Table 3, i.e. "Equal variances assumed" was reported.

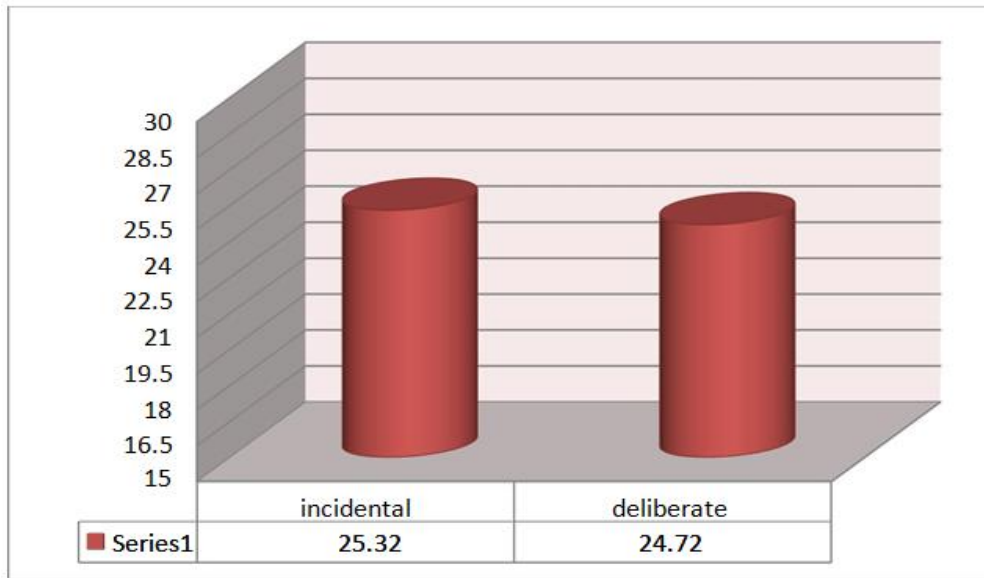


Fig 1: PET general language proficiency test by groups

**Pretest of Vocabulary**

An independent t-test was run to compare deliberate and incidental groups’ means on the pretest of vocabulary in order to prove that they were at the same level of vocabulary knowledge prior to the main study. Based on the results displayed in Table 4 it can be claimed that the deliberate (M = 11.92, SD = 6.15) and the incidental (M = 10.72, SD = 6.19) groups had almost the same means on the pretest of vocabulary.

Table 4: Descriptive statistics; pretest of vocabulary by groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pretest	deliberate	25	11.92	6.157	1.231
	incidental	25	10.72	6.195	1.239

The results of the independent t-test ( $t(48) = .687, p = .495, r = .099$  representing a weak effect size) (Table 5) indicated that there was not any significant difference between the two groups’ mean scores on the pretest of vocabulary. Thus it can be claimed that they were at the same level of vocabulary knowledge prior to the main study.

Table 5: Pretest of vocabulary by groups

Levene's Test for Equality of Variances									
t-test for Equality of Means									
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.139	.711	.687	48	.495	1.200	1.747	-2.312	4.712
Equal variances not assumed			.687	47.998	.495	1.200	1.747	-2.312	4.712

Note. The negative 95 % lower bound confidence interval of -2.31 indicated that the difference between the two groups’ means on the pretest of vocabulary could have been zero. Thus the above mentioned conclusion as no significant difference between the two groups’ means was correctly made.

It should be noted that the assumption of homogeneity of variances was met (Levene’s  $F = .139, p = .711$ ). That is why the first row of Table 5, i.e. “Equal variances assumed” was reported.

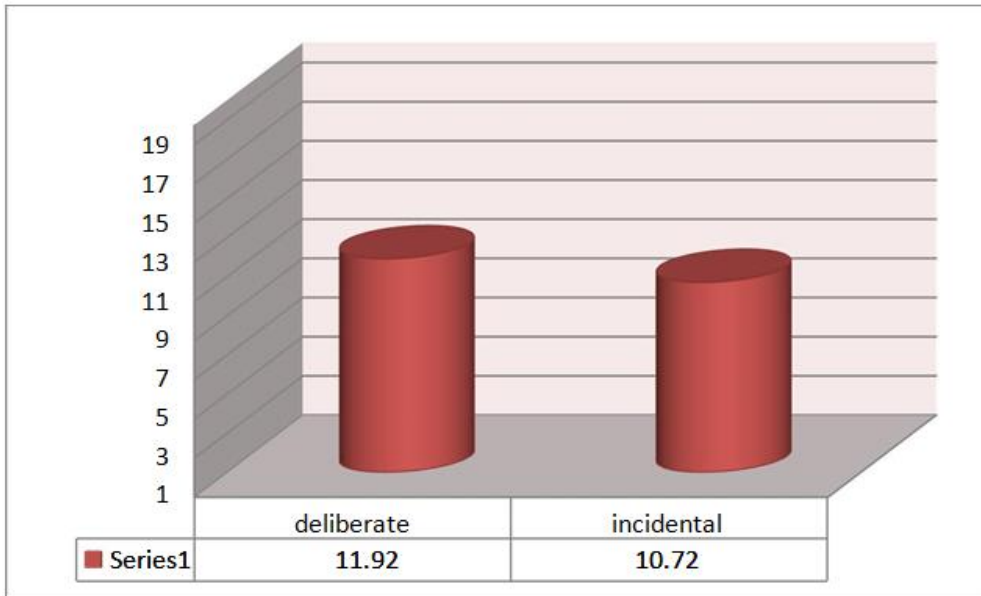


Fig 2: Pretest of Vocabulary test by groups

**Null-Hypothesis**

This study aims at exploring the following null-hypothesis;  $H_0$ : Incidental and deliberate vocabulary strategies do not have the same effect on Iranian high school students' vocabulary learning.

An independent t-test was run to compare deliberate and incidental groups' means on the posttest of vocabulary in order to probe the null-hypothesis raised in this study. Based on the results displayed in Table 6 it can be claimed that the deliberate ( $M = 16.04$ ,  $SD = 2.57$ ) had a higher mean than the incidental ( $M = 11.08$ ,  $SD = 4.53$ ) group on the posttest of vocabulary.

Table 6: Descriptive statistics; posttest of vocabulary by groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
posttest	deliberate	25	16.04	2.574	.515
	incidental	25	11.08	4.536	.907

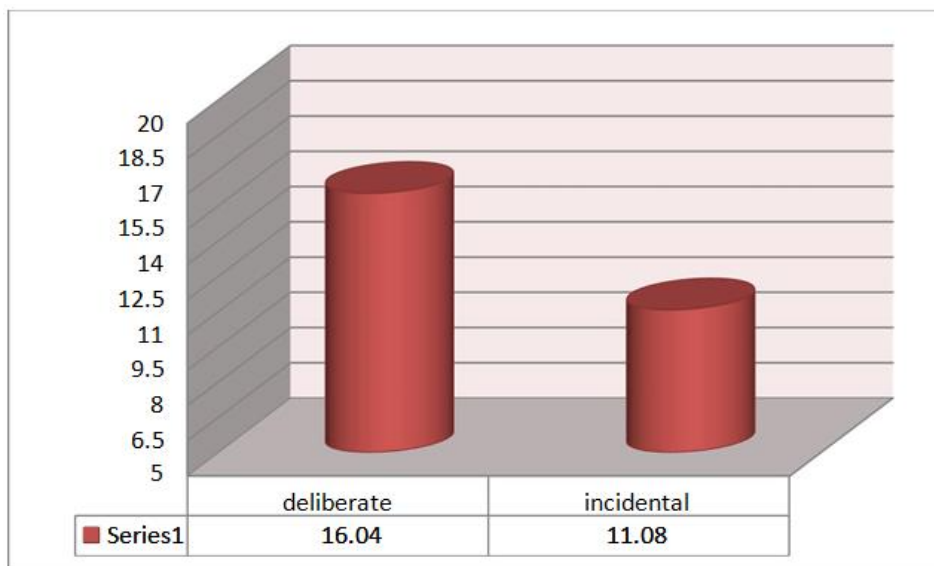
The results of the independent t-test ( $t(48) = 4.75$ ,  $p = .000$ ,  $r = .566$  representing a large effect size) (Table 7) indicated that there was a significant difference between the two groups' mean scores on the posttest of vocabulary. The deliberate vocabulary learning strategy group significantly outperformed the incidental group on the posttest of vocabulary. Thus the null-hypothesis was rejected.

Table 7: Posttest of vocabulary by groups

Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference		
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	2.751	.104	4.755	48	.000	4.960	1.043	2.863	7.057
Equal variances not assumed			4.755	38.000	.000	4.960	1.043	2.848	7.072

It should be noted that the assumption of homogeneity of variances was met (Levene's  $F = 2.75$ ,  $p = .104$ ). That is

why the first row of Table 7, i.e. "Equal variances assumed" was reported.



**Fig3:** Posttest of Vocabulary test by groups

**KR-21 Reliability Indices**

The KR-21 reliability indices for the PET, pretest and posttest of vocabulary were .86, .92 and .82 respectively.

**Table 8:** KR-21 reliability indices

	N of Items	Mean	Std. Deviation	Variance	KR-21
PET	50	25.02	8.807	77.571	.86
Pretest	20	11.32	6.143	37.732	.92
Posttest	20	13.56	4.427	19.598	.82

**Discussion**

As the results showed, there was a significant difference between the two groups’ mean scores on the posttest of vocabulary. The deliberate vocabulary learning strategy group significantly outperformed the incidental group on the posttest of vocabulary. By referring to several studies, the researcher explained that there were some studies which their results are in common with this study like, the research that said direct and deliberate learning is more effective, focused and goal-directed than incidental learning (Nation & Meara 2010). It results in a very quick (and longstanding) expansion of vocabulary size which then needs to be consolidated and enriched through meaning-focused input and output, and fluency development. And in the other research It has also been argued that the retention rates of intentional vocabulary learning are generally higher than those obtained with incidental learning (Hustijn, 2003), suggesting that deliberate attempts to learning vocabulary are effective and worth the effort.

In the other case there were some researches which have conflicting view, like Huckin and Coady (1999) highlight the importance of incidental vocabulary learning indicating that learners gain more vocabulary knowledge through extensive reading with guessing at the meaning of unknown words. Research suggests that a large portion of the vocabulary children learn in their L1 is incidental in nature, a by-product of reading (Huckin & Coady, 1999).

**Conclusion**

Learning vocabulary from meaning-focused output, that is, learning through speaking and writing, is necessary to

move receptive knowledge in to productive knowledge. The enhancement of vocabulary through the productive skills can occur in several ways. First, activities can be designed, such as those involving the use of annotated pictures or definitions, which encourage the use of new vocabulary. Second, speaking activities involving group work can provide opportunities for the learners to negotiate the meaning of unknown words with each other. Third, because learning new vocabulary is accumulative process using a partly known word in speaking and writing can help strengthen and enrich knowledge of the word. Guidelines for designing written input include: Predicting what parts of the written input are most likely to be used in the task, using retelling, role play or problem-solving and encouraging creative use of vocabulary through having to reshape the written input to a particular input.

Learning vocabulary from meaning-focused input that is, learning incidentally through listening and reading, accounts for most first language vocabulary learning. Although this kind of learning is less sure than deliberate study, for native speakers there are enormous opportunities for such learning (Nagy, Herman and Anderson, 1985). For such learning to occur with non-native speakers, three major conditions need to be met. ( First, the unknown vocabulary should make up only a very small proportion of the tokens, preferably around 2 per cent, which would mean one unknown word in fifty (Hu and Nation, 2000). Second, there needs to be a very large quantity of input. Third, learning will be increased if there is more deliberate attention to the unknown vocabulary through the occurrence of the same vocabulary in the deliberate learning strand of the course. It also helps to make learners aware of new words by glossing them (Watanabe, 1997). Deliberate attention to vocabulary can be encouraged by the teacher quickly defining unknown items (Elley, 1989) noting them on the board, allowing the learners to negotiate their meaning by asking for clarification, glossing the new words and highlighting and using dictionary. The core strand of a course is a well-organized, well-mentioned, substantial extensive reading program based largely on graded readers. Most research shows the clear advantage of integrating incidental and deliberate vocabulary learning approaches (Schmitt, 2008).

In this case, both of the strategies, incidental learning vocabulary through using textual-pictorial glosses and deliberate learning context, using digital flashcards with picture and meaning are very beneficial, so the students got very good results at the end. But the second group which was using deliberate strategy got better results in schools of Iran because of limitation of time and the bulk of vocabulary for learning using deliberate strategy is more helpful than incidental learning. Especially this way of learning is very interesting and challengeable. The students were engaged in matching and making their flashcards and this enhanced their conscious-raising. As the result of studies show, for different situation different strategies are beneficial.

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