

# The Effect of Picture-word Inductive Method on Learning English Vocabulary

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## ABSTRACT

This study aimed to investigate the effect of the picture-word method on learning and retention of English vocabulary among the tenth graders in Ardabil. The sample of the study consisted of 50 tenth-grade female students from a high school. They were randomly assigned to two groups of twenty-five students (one experimental group and one control one). The picture-word method was used to the experimental group while the traditional method was used with the control one. A pre-test and a post-test were used then the scores were analyzed using independent sample t-test. The results indicated that in pre-test, two groups might have been equal in terms of vocabulary knowledge, but in post-test the experimental group outperformed the control group. This showed the positive effect of picture-word method on learning English vocabulary.

## **Introduction**

It is undeniable that vocabulary plays a very important role in language learning. It requires students to spend much time choosing or searching for the effective techniques of learning. The most important area of promoting literacy is vocabulary development. Although vocabulary is one of teachers' major concerns for EFL students, it is crucial as interact with text because vocabulary is linked to the way information is stored in memory, and is a means for expressing thinking. Effective vocabulary instruction emphasizes "providing both definitional and contextual information about key words, elaborating on word meaning during teacher-led discussions, and providing opportunities for students to actively elaborate on word meanings themselves" (Watts – Taffe & Truscott, 2000, p.262)

Vocabulary learning is an important element in second language learning. Long and Richard (2007) state that by having rich vocabulary, students can improve their listening, speaking, reading and writing abilities; not only in the way they comprehend but also in the way they produce language. Nassaji (2004, p.112) mentions that English as a Second Language (ESL) learners who have wider vocabulary knowledge can make more effective use of certain types of lexical inferencing strategies than their weaker counterparts. August, Carlo, Dressler and Snow (2005) also point out that English language learners who experienced slow vocabulary development were less able to comprehend texts at the grade level than their peers were.

Vocabulary knowledge remains the focal point in this research given its uncompromised role in language development and mastery. As Noorli and Imran-Ho (2018, p. 26) mentioned, "The tenet of a language description is in its words." Cumulative strength of previous frameworks on vocabulary learning and teaching has presented vocabulary knowledge as the key to the development as well as mastering of language skills. Researchers of second/foreign language learning such as Neuman and Kaefer (2018), McKeown and Beck (2014), Alemi and Tayebi (2011), Banta (2004), Biemiller (2010), Hunt and Beglar (2005), and Nation (1990) may have all stood firm on the significance of vocabulary knowledge though their respective views on the effectiveness of various interventions and models of teaching may be far from unanimous.

Every year hundreds of Iranian students start studying English as a foreign language both at schools and institutes, but despite the time, energy and cost that they spend, the results are unsatisfactory and students cannot do well in their assignments and examinations or they forget most of what they have learned easily. Students cannot use English when they need and all these lead learners, parents and teachers to negative attitudes toward English courses. Since vocabulary is an important part of language, the way it is taught and learned may be an important aspect of the problem.

Part of the insufficiency of English courses in Iranian education system may be due to the fact that vocabulary teaching and learning is not worked on appropriately and effectively and that is why learners do not show progress in their learning. It is clear that, vocabulary acquisition does not happen by itself so it must be provided in language instruction. Teachers usually use methods to teach vocabulary but the ways that are used may mislead learners to learn vocabulary.

The Picture Word Inductive Model (PWIM), a teaching model developed by Calhoun (1999), has successfully being implemented by her to help learners of varying types and age groups in countries such America and Canada with their language learning. Engaging inductive thinking and concept attainment strategies, the approach primarily uses pictures to elicit words from learners and in the process, facilitate and enhance vocabulary and language development. Moreover, pictures have been commended as an instrument deemed potentially efficacious for vocabulary learning, particularly among young learners (Joyce, Weil, & Calhoun, 2015; Banta, 2004; Kress, 2000; Calhoun, 1999.). As put forth by Banta (ibid.), visual skills precede verbal skills, with very young children learning to "read pictures" well before they learn to read text. Therefore, this study strived to explore if this approach can similarly help to enhance learners' vocabulary knowledge positively

in the Iranian context and in doing so, help lay the foundation for greater English proficiency level among our learners.

The problem of the present study springs from students' low achievement in vocabulary domain as a part of English language. Also, EFL students in the tenth grade in public schools lack the strategies to cope with vocabulary. They perform poorly and receive low scores at vocabulary tests as a result.

## **Review of literature**

In language learning vocabulary is so important that it can be mentioned as the cornerstone of language without which no language could exist. Having only structures without vocabulary, will lead to nothing and speaking would be perhaps impossible without vocabulary.

Brummitt-Yale (2009, p.127) states some effective explicit and implicit strategies that can be employed with students of any age as follows:

1. Pre-teaching vocabulary word: Selecting new or difficult items that students will meet in a future classroom activity, and teaching such items before the activity. For example, difficult words in a listening- comprehension exercise may be taught before students do the exercise (Jack C. Richards, John Platt, and Heidi Platt, 1992).

2. Repeated exposure to words: Repeated exposures to words enable students to see vocabulary in rich vocabulary words contexts and is one of the effective ways for vocabulary learning that provides repeated exposures to a word's meaning. There is great improvement in vocabulary when students encounter vocabulary words (Kamil and Hiebert, 2005).

3. Keyword method: In this method the learner thinks of a key word in native language which sounds like the beginning or all of the unknown word from foreign language and then thinks of a visual image in which the meaning of the unknown word and the meaning of the known word is combined (Nation, 2001).

4. Word maps: A Word map is a graphic organizer that helps students build their vocabulary. Rather than just memorize words and terms, students can use the map to help them retain learning, use vocabulary in context, and develop a framework on which to build new knowledge. A word map also works well as a pre-reading or post-reading activity.

5. Incidental learning: Incidental learning is the process of learning something without the intention of doing so. It is also learning one thing while intending to learn another (Richards & Schmidt, 2002). In terms of language acquisition, incidental learning is said to be an effective way of learning vocabulary from context (Day, Omura, & Hiramatsu, 1991; Jenkins, Stein, & Wysocki, 1984; Nagy, Herman, & Anderson, 1985; Saragi, Nation, & Meister, 1978). Incidental vocabulary learning motivates learners for extensive reading. It involves learners' ability to guess the meaning of new words from the contextual clues. Incidental learning occurs more particularly through extensive reading in input-rich environments, albeit at a rather slow rate (Coady, J 2001).

6. Context skills: Learning the new words and inferring the meaning through context will be more productive because it sharpens the ability for guessing. By practicing guessing, students can infer the general idea and begin to understand the meaning gradually. Hence the process of guessing is of prime importance for vocabulary learning. Guessing is useful for both the proficient learners and low proficiency- level learners. While guessing, the learners' focus gets increased, and after guessing when the new words are learned by consulting dictionaries, they could be retained for a longer period of time.

Hence the guessing should be tried out in the context first, then to see whether it makes sense or not, a dictionary may be consulted. Williams (1986) advises that guessing activity should be demonstrated on chalkboard by circling the unknown words and drawing across from other words that give clues to infer its meaning. The learners should see if the unknown words can be analyzed into parts. They should check if the meaning of the parts matches the meaning of the unknown word.

Marzano (2004) mentions six-steps to better Vocabulary teaching:

1. Provide a description, explanation, or example of the new term.
2. Ask students to restate the description, explanation, or example in their own words.
3. Ask students to construct a picture, pictograph, or symbolic representation of the term.
4. Engage students periodically in activities that help them add to their knowledge of the terms in their vocabulary notebooks.
5. Periodically ask students to discuss the terms with one another.
6. Involve students periodically in games that enable them to play with terms.

### **Picture word inductive model:**

Picture word inductive method (PWIM) is one research-based, instructional method of promoting literacy by teaching vocabulary. This method was designed based on research about how literacy is acquired (Joyce & Weil, 2004). According to Joyce and Weil (2004), “to become an expert reader, people need to read a lot, develop skill in phonetic and structural analysis, and learn to comprehend and use extended text” (p.81)

PWIM is an instructional strategy in which pictures are used “as a stimulus for language experience activities” in classrooms to teach young beginners learning to read and write (Joyce et al., 2009)

Teachers can use the PWIM to teach phonetics and spelling both inductively and explicitly. Another major principle of the model is that students have the capacity to

make generalizations that can help them to master the conventions of language.

Another purpose of the strategy is to develop learners’ vocabulary concepts and paragraphs and sentence structures in general content subject matters, including mathematics reading, science, and social science. The ultimate goal of this strategy is to enable language beginners to become powerful language learners.

PWIM has many successful scenarios in classrooms (Calhoun, 1999; Joyce & Showers, 2002; Joyce et al., 2009). Calhoun claims that its successful applications are closely related to prescribed and detailed steps for implementation, an instructional sequence incorporating cycling and recycling through the following 10 instructional steps:

1. Select a picture.
2. Ask students to identify what they see in the picture.
3. Label the picture parts identified. (Draw a line from the identified object or area, say the word, write the word; ask students to spell the word aloud and then to pronounce it.)
4. Read and review the picture word chart aloud.
5. Ask students to read the words (using the lines on the chart if necessary) and to classify the words into a variety of groups. Identify common concepts (e.g., beginning consonants, rhyming words) to emphasize with the whole class.
6. Read and review the picture word chart (say the word, spell it, say it again).
7. Add words, if desired, to the picture word chart and to the word banks.
8. Lead students into creating a title for the picture word chart. Ask students to think about the information on the chart and what they want to say about it.
9. Ask students to generate a sentence, sentences, or a paragraph about the picture word chart. Ask students to classify sentences; model putting the sentences into a good paragraph.
10. Read and review the sentences and paragraphs (Calhoun, 1999, p. 23).

In recent years, interest in PWIM has been detected within the region of Asia, namely in China, Taiwan and Indonesia. Jiang (2015) researched 30 seventh graders in China and found PWIM’s influence positive on his subjects’ narrative writing. Previously, in 2014 Jiang also investigated the impact of PWIM on the vocabulary acquisition of fourth and seventh graders from mainland China,

as well as the possibility of a cognitive overload in combining words with pictures. Findings indicated no significant difference in subjects' vocabulary acquisition based on grade levels between the experimental and control group, and some felt cognitively overloaded with too many new words introduced and repetitions. However, majority perceived PWIM to have a positive effect on their English language learning.

There was also a PWIM study that looked at the scaffolding of EFL elementary learners' English literacy in a cooperative classroom. It involved three elementary Taiwanese English teachers and a group of fourth, fifth and sixth graders with data collected via observations and interviews (Feng, 2011). Although findings were based solely on perceptions, overall, the eleven months qualitative study documented positive findings: increased English vocabulary, improved ability to compose sentences, greater motivation towards learning English and subjects became more autonomous in learning.

The interest expressed in the intervention is reflected in the number of studies carried out recently. Experimental studies and action research were conducted by Wahyuni (2016), Jiang (2014, 2015), Yurfalah (2014), Feng (2011), Li (2011), McDonald (2010) and

Swartzendruber (2007), among others, to investigate the effectiveness of the model on vocabulary acquisition and language learning as well as perceptions of both teachers and learners on the effectiveness of the method. The studies documented mainly positive findings that support the PWIM model as an effective vehicle in enhancing learners' vocabulary knowledge and language learning but there are also those with contrary results. A case in point is Jiang's (2014) research findings that showed no significant differences between the experimental and control group posttest means.

Studies conducted by researchers in Indonesia were mainly experimental ones on the effectiveness of PWIM on literacy skills such as writing and communicative competence. For instance, Nurani and Rosyada (2017) investigated the impact PWIM has on the communicative competence of 47 eleventh-graders in a public secondary school in Jakarta. On the other hand, Harahap (2018), Kurniawan (2015) and Kartika (2013) explored PWIM as an alternative approach to teaching secondary school students descriptive writing. All recorded improved writing skills. Similarly, Wahyuni (2016) and Yurfalah (2014) who conducted studies on PWIM and vocabulary learning on local learners in their country also posted positive results.

## **Method**

The study followed a pretest-posttest and delayed posttest design to determine whether the picture word inductive method could affect the participants' vocabulary learning and retention. It was performed with fifty tenth grade EFL students which were randomly divided into two groups of twenty five (one experimental group and the other was served as a control one). The method of instruction, picture-word inductive method was used in teaching vocabulary to the experimental group while the same vocabularies were taught to the control group using the traditional methods such as memorizing the vocabulary with first language equivalence.

### **Participants**

The initial sample of this study were 70 tenth-grade female students from Zeynabieh High school in Ardabil. The subjects aged between 15 and 16 and all of them had received at least three years of formal English education since seventh- grade and they had one 90 minute English class each week. At first, a standardized English placement test, Oxford Proficiency Tests for beginners (OPT), was administered to the participants. Fifty of them who scored between 8 and 28 were selected. (students who get scores below 8 and above 28 were excluded). According to the interpretation given in OPT, their English proficiency level was considered to be pre-intermediate when they participated in the

study. The selected students were divided in two groups: twenty-five in the experimental group and twenty-five in control group. The division were random.

## **Materials**

In order to select vocabularies which are the main component of this study, the researcher focused on vocabularies that were not taught till that time and were unfamiliar to most of the students. So the vocabularies were not chosen from their text book and in a session with the headmistress, students and their parents, the researcher received their permission to hold some classes in students' free time ( the classes were held on Thursdays' mornings from 10 am to 11:30 am in which students had free time) for implementing the instruction with two famous children stories, "the Adventure of Tom Sawyer" (by Mark Twain) and "Little women" (by Louisa May Alcott) and then, the vocabularies were selected from these stories. All the vocabularies never appeared in the participants' textbooks used in the high school.

## **Pre-test and post-test**

Pre-test which was given to the participants before the instruction was as the same of the post-test which was given after it.

1. Ten words and some relevant sentences with a missing word were presented to the students that they had to choose one of the choices that was given to complete the sentences. Each of the items was given 0.5-point score and there was no penalty for guessing. The maximum score of this part was 5.
2. Ten words and ten pictures were presented to the participants and they were asked to match the words with the given pictures. Again, each of the items was given 0.5 score and the maximum score was 5.
3. The participants were asked to provide the complete spelling of ten cued words, with their Persian meanings and the first letter and the last letter given . Each of the items was given 0.5-point score and the maximum score was 5.
4. Ten words were presented to participants and they were asked to produce a sentence with each word. This task was based on Hall (1991, 1992, cited in Nation, 2001), who claims that learners who produce sentences with the given words will have superior learning. Each of the items was given 0.5-point score and the maximum score was 5.

## **Results:**

This study emphasized examining the effect of picture-word inductive method on improvement of tenth grade female students' vocabulary learning. Collected data (scores) were analyzed using the Statistical Package for the Social Sciences (SPSS) software (Version 27). Specifically, the SPSS software was utilized to calculate for central tendency or mean scores as well as for standard deviation values (variance of distribution in relation to the mean). The software was also employed to run t-tests. As you can see in table 1, the mean score at pre-test for experimental group was 8.56 and for control group it was 8.32. it indicates that the two groups might have been equal in terms of vocabulary knowledge before running the treatment.

*Table 1: Descriptive Statistics for Performance of the Groups on Pre-test*

Group	N	Mean	Std. Deviation
Experimental	25	8.56	3.453
Control	25	8.32	3.289
Total	25	8.44	3.371

As shown in table 2, Independent Sample T-test for performance of the groups in pre-test shows the significance rate is 0.715 which is greater than 0.05 ( $p = 0.7 > 0.05$ ). the results of t-test for pre-test indicated that there wasn't any differences between the mean scores of the two groups in terms of vocabulary knowledge.

Table 2: Independent Samples Test for pre-test

		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
Pretest	Equal variances assumed	.135	.715	.760	48	.451	.560	.737	-.922	2.042
	Equal variances not assumed			.760	47.8	.451	.560	.737	-.922	2.042

Descriptive statistics of vocabulary post-test indicates that in the post-test the experimental group outperformed the control group. The mean score of experimental group was 16.48 and the mean score of control group was 10.60 (table 3).

Table 3: Descriptive Statistics for Performance of the Groups on Post-test

	N	Mean	Std. Deviation
Experimental	25	16.48	2.874
Control	25	10.60	1.560
Total	25	13.54	2.217

It is clear that there is a sizable difference between two groups in terms of vocabulary scores. Table 4 indicates the results of independent sample T-test used to compare two groups' performance on vocabulary.

**Table 4: Independent Samples Test for post-test**

		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
Pretest	Equal variances assumed	3.597	.064	4.254	48	.000	2.960	.696	1.561	4.359
	Equal variances not assumed			4.254	42	.000	2.960	.696	1.556	4.364

Since in the 'equal variance assumed' the significant rate is 0.064 which is greater than 0.05, the results of t-test indicated that there was a meaningful difference between the mean scores of two groups. In other words, the results showed that the experimental group which was taught by picture-word inductive method outperformed the control group. The differences between the post-test vocabulary scores' results of two groups (experimental and control) suggests that picture- word method affected vocabulary learning significantly.

## Discussion

The researcher attributes these results to the advantages of picture word inductive method as a teaching and learning strategy. These advantages are:

- 1- Motivating and authenticity.
2. Learning in groups.
3. Enhancing the communication skills among students.
4. Stimulating the self-learning.
5. Making the student the center of the educational process.
6. Engaging learners in real- world learning activities.
7. Enabling the students to work independently where the role of the teacher changed from transmitted of knowledge to facilitator.

Based on the findings derived from the results of this study, the following conclusions were reached:

1. The picture-word inductive method had superiority over the traditional methods in teaching English language vocabulary.
2. This method provided students with a better learning environment which reflected on their achievement in English language vocabulary.
3. This method developed cooperative learning within the same group and competition with other group.
4. This method stimulated students towards an independent practice of English language vocabulary instead of direct instruction.
5. These methods provided students with enjoyment, pleasure, enthusiasm and variation which were significant enough to affect the students' achievement positively.



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