



MJAL 2:5 August 2010

ISSN 0974-8741

The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and

Written Production of Iranian Intermediate EFL Learners

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshsabk

**The Impact of Visual and Verbal Intelligences-Based Teaching on the
Vocabulary Retention and Written Production of Iranian Intermediate
EFL Learners**

Reza Pishghadam (Ph.D.)

Ferdowsi University of Mashhad, Iran

Ebrahim Khodadady (Ph.D.)

Ferdowsi University of Mashhad, Iran

Nastaran Khoshsabk (M.A.)

Garmsar Azad University, Iran

Reza Pishghadam is assistant professor in Ferdowsi University in Mashhad, Iran. At present, he teaches psycholinguistics, research methodology, and sociolinguistics. E-mail: rpishghadam@gmail.com

Ebrahim Khodadady is assistant professor in Ferdowsi University in Mashhad, Iran. At present, he teaches language testing, research methodology, and linguistics.

Nastaran Khoshsabk holds MA in TEFL. She is currently teaching at a university in Mashhad, Iran. E-mail: n_khoshsabk@yahoo.com

Menu

[Abstract](#)

[Introduction](#)

[Method](#)

[Results](#)

[Conclusions](#)



Abstract

This study aims at examining the effects of visual and verbal intelligences-based teaching of vocabularies on Iranian EFL students' vocabulary retention and production. Therefore, 71 male and female intermediate students, who were selected from two different language institutes in Mashhad (Iran), served as the participants of this study. They were divided into visual experimental, verbal experimental, and control groups. During the five sessions of the treatment, 35 vocabularies were instructed to the three groups, while the visual experimental group received the words visually, the verbal experimental group received the words verbally, and control group instructed traditionally. Data analysis demonstrated that the students' retention of words in visual experimental group was enhanced by visual intelligence-based teaching of vocabularies, while verbal experimental group and control group did not. Moreover, the results of the writing test exhibited that visual intelligence-based teaching of vocabularies could change the passive vocabulary knowledge of the visual experimental group into an active one.

Key terms: Multiple intelligences, Second language teaching, Verbal intelligence, Visual intelligence

1. Introduction

Learning vocabulary seems to be one of the easiest things about learning a language but it is somehow burdensome for some learners and also one of the hardest things to do, especially when the students have reached a certain level of proficiency. Fortunately, the need for vocabulary is one point on which teachers and students agree (French Allen, 1983). Moras (2001) claims that students might have a receptive knowledge of a wide range of vocabularies, which means they can recognize the items and their meanings; nevertheless,



MJAL 2:5 August 2010

ISSN 0974-8741

**The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and
Written Production of Iranian Intermediate EFL Learners**

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshsabk

their productive use of vocabulary is normally restricted, and this is one of the areas that need greater attention.

Based on Hornby's definition (2004, p. 1091), retention is "the ability to remember things". As the operational definition of this study, retention is "the ability to recall or remember things after an interval of time" (Richards, Platt, & Webber, 1985, p. 244). As Thornbury (2004) indicates, two factors determine retention. First those words that were easy to learn were better retained. Secondly, those words that were learned over spaced learning sessions were retained better than words that were learn in concentrated bursts. Thornbury (2004) stated that one of the principles, which ensure that material moves into permanent long-term memory, is imaging. That is to say, visualizing a mental picture silently for a new word makes them more memorable. Learners can even associate abstract words with some mental images.

Also, Grow's claimed (1990) that some of the key features of spatial intelligence mirror key features in writing. The ability to see at all is an act of spatial intelligence, and intelligent perception lays the foundation for all writing that is based on observation or description. Writers create a wide variety of mental images in readers--an expression of the spatial intelligence sometimes discussed under the label of "visual thinking".

Gardner (1993) claims that all human beings have multiple intelligences (MI), which are common among all the people, but with different portions. The MI-based instructions might help learners to acquire words faster and improve academic achievement while these MI can be nurtured and strengthened, or ignored and weakened. Gardner's MI are shown in Table 1. (Hoerr, 2000).



Table 1. Gardner's Multiple Intelligences

Intelligence	Definition
linguistic	sensitivity to the meaning and order of words
logical-mathematical	the ability to handle chains of reasoning and to recognize patterns and order
musical	sensitivity to pitch, melody, rhythm and tone
bodily-kinesthetic	the ability to use the body skillfully and handle objects adroitly
Spatial	the ability to perceive the world accurately and to recreate or transform aspects of that world
naturalist	the ability to recognize and classify the numerous species, the flora and fauna, of an environment
interpersonal	the ability to understand people and relationships
intrapersonal	access to one's emotional life as a means to understand oneself and others

Source: Hoerr (2000, p. 4)

This study is in line with the dominant recent approaches towards MI and the previous scholars' propositions who consider MI as one of the essential components of vocabulary learning. Armstrong (2000) and Lin (2000) suggested that MI theory can provide a way for all teachers to reflect upon their best teaching methods, and to figure out the reason why some methods they use work well for some students but not for others. It also may help teachers expand their current teaching repertoire to include a broader range of techniques, materials and methods for reaching an ever wider and more various range of learners, since it may be that some students have not responded well in the past because their preferred intelligences were not being stimulated by the teaching approach used. According to Armstrong (2000), even traditional linguistic teaching can take place in a variety of ways designed to stimulate the eight intelligences. For example, the teacher who draws pictures on the board to illustrate points (spatial) is using MI principles within a traditional teacher-centered perspective.

As Armstrong (2000) mentioned, due to the students' differences teachers use a broad range of teaching strategies with their students. In this part, the focus is only on linguistic and visual intelligences' strategies.



MJAL 2:5 August 2010

ISSN 0974-8741

The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and

Written Production of Iranian Intermediate EFL Learners

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshsabk

Verbal intelligence's teaching strategies:

1. *Storytelling*. By storytelling, essential concepts, ideas, and instructional goals form.
2. *Brainstorming*. During brainstorming, a torrent of verbal thoughts produces by the students that can be collected and put on the board.
3. *Tape Recording*. Tape recording offers students a medium to learn about their linguistic powers and helps them employ verbal skills to communicate, solve problems, and express inner feelings.
4. *Journal Writing*. The students write in a specific domain which can be broad and open-ended or quite specific.
5. *Publishing*. Students complete papers in traditional classrooms.

Visual intelligence's teaching strategies:

1. *Visualization*. One way to translate book and lecture material into pictures and images is to have students close their eyes and picture whatever is being studied.
2. *Color Cues*. Spatial students are sensitive to color.
3. *Picture Metaphors*. A picture metaphor expresses an idea in a visual image.
4. *Idea Sketching*. The eminent individuals in history used simple drawings in developing many of their powerful ideas.
5. *Graphic Symbols*. One of the teaching strategies is drawing pictures on the board.

Therefore, this study attempts to investigate whether two selected intelligences-based teaching, which are visual and verbal intelligences, have any effect on the vocabulary retention and also written production of Iranian intermediate EFL learners or not. Applying each of these two different intelligences-based materials to different groups might enhance learning vocabularies.



MJAL 2:5 August 2010

ISSN 0974-8741

**The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and
Written Production of Iranian Intermediate EFL Learners**

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshsabk

2. Method

2.1. Participants and Setting

In order to have sufficient number of students for this study, six classes of Gheshm and Novin Parsian English language Institutes in Mashhad (Iran) which agreed to cooperate with the researcher to do this study were chosen. Seventy-one out of one hundred individuals whose proficiency in English was intermediate level (as they had been homogenized by administering Nelson test) and memory retention abilities were also in the same level were selected as the participants of this study. Among these participants, thirty seven of them were males and the other thirty four students were females. All students were enrolled in classes during the summer quarter of 2009, a period of 8 weeks.

The experimental groups consisted 25 and 24 and the control group of 22 Iranian students, majoring in different fields and ranging from 17 to 55 years old.

2.2. Instrumentation

Two types of tests were administered first in pretesting to ensure the homogeneity of the groups at the very beginning of the course. A Nelson test administered to determine their level of language proficiency and the Wechsler intelligence quotient (IQ) test to measure their memory retention abilities and the homogeneity of subjects' IQ. The reliability of Nelson test was high ($r = .854$) which computed through Cronbach's Alpha. The reliability of Wechsler IQ test ($r = .82$) was also found to be high.

Also, two similar sets of self-designed fill in the blank tests of vocabulary which were similar not identical were designed and employed by the researchers in pretesting which aimed at choosing the words which are unfamiliar to the students and second in posttesting three times with the intervals of two weeks to determine the subjects' abilities to remember the meanings of the words. KR-21 was used to measure the reliability coefficient of the test, which was found to be $r = .722$.



MJAL 2:5 August 2010

ISSN 0974-8741

**The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and
Written Production of Iranian Intermediate EFL Learners**

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshbak

Administering the treatment, the students were asked to write in class and use as much of the taught words as possible with a specific topic. Useful production tested via writing test.

2.3. Procedure

The treatment was 5 sessions so the 35 new words were divided into groups of seven vocabularies. According to Grains (1986, cited in Moras, 2001), "Retention in short-term memory is not effective if the number of chunks of information exceeds seven. This suggests that in a given class we should not aim at teaching more than this number. However, our long-term memory can hold any amount of information" (p.1). New vocabularies presented via pictures to the in visual experimental group (N = 25), via meanings, synonyms, and antonyms to the students in verbal experimental group (N = 24), and via translations and sentences to the students in control group (N = 22). While teaching visually the teacher used different kinds of strategies such as: physical demonstration, using mime and gesture, creating a visual memory for the word, pointing to the subjects, using visual aids, magazine's pictures, blackboard drawings, and drawings on students' knowledge of the world, and imagination. However, in verbally teaching, strategies like verbal explanation, asking learners to check in a monolingual dictionary and elicit some instances. In all classes, the researcher spent about 20 minutes in order to teach the vocabularies of each session of the treatment to the students.

Posttest was administered 3 times throughout the study in June 2009. At the end of the experiment (fourth week) the subjects received the posttest which was identical to the pretest. At sixth and eighth weeks and after two weeks interval between the tests, the vocabulary posttest was administered. The interval of two weeks was chosen because less than this time the students might use their short-term memory to answer the questions. More than two weeks interval had the problem of further learning.



As the results of Table 2 show, the correlation between posttests 1 and 2 is .897. So, the test is quite reliable and there is a meaningful relationship between posttests 1 and 2 ($P < .05$).

Table 2. Test-retest Reliability between Posttest 1 & 2 (Pearson Product Moment Correlation)

		Vocabulary retention score in post test1 (after 3 weeks)	Vocabulary retention score in post test2 (after 5 weeks)
Vocabulary retention Correlation	Pearson	1	.897*
score in post test1 (after 3 weeks)	Sig. (2-tailed)		.000
	N	71	71
Vocabulary retention Correlation	Pearson	.897*	1
score in post test2 (after 3 weeks)	Sig. (2-tailed)	.000	
	N	71	71

**. Correlation is significant at the .01 level (2-tailed).

For examining the production the participants were asked to write four paragraphs and use at least 20 out of 35 taught vocabularies, under the title of "The unforgettable experiences of my life" at the end of the treatment. If the students had learned those vocabularies, they could have used them in their writings.



3. Results

3.1. Homogenizing Tests

ANOVA was used to determine the homogeneity of three groups at the very beginning of the term.

Table 3. Results of One-way ANOVA for Nelson Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.017	2	6.009	.068	.934
Within Groups	6003.166	68	88.282		
Total	6015.183	70			

As the results of Table 3 shows, there is no significant difference ($F = .068$, $P > .05$) among three groups with regard to language proficiency which confirms the homogeneity of the participants.

Table 4. Results of One-way ANOVA for Wechsler IQ Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	134.599	2	67.300	.118	.889
Within Groups	38821.288	68	570.901		
Total	38955.887	70			

Wechsler IQ test was also administered on the participants in the second session of this study to measure their memory retention abilities and the homogeneity of subjects' IQ. According to the results of Table 4, there is no significant difference ($F = .118$, $P > .05$) among three groups with regard to IQ which confirms the homogeneity of the participants as before.

**Table 5. Results of One-way ANOVA for Vocabulary Scores in Pretest**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.884	2	9.442	2.039	.138**
Within Groups	314.891	68	4.631		
Total	333.775	70			

Finally, ANOVA was used to see whether the students were at the same level of vocabulary knowledge or not. As the results of Table 5 shows, there is no significant difference ($F = 2.039$, $P > .05$) among three groups with regard to vocabulary pretest. Indeed, this result was very predictable considering the homogenized groups.

3.2. Results of the Vocabulary Posttests

Here, the vocabulary scores are tested in posttests via ANOVA and the Scheffe method. The related results to each three-posttest stage are reported separately.

Table 6.a. Results of One-way ANOVA for Vocabulary Retention Scores in Posttest 1

		Sum of Squares	df	Mean Square	F	Sig.
post1	Between Groups	377.724	2	188.862	8.167	.00066**
	Within Groups	1572.473	68	23.125		
	Total	1950.197	70			

** Significant at $\alpha = .001$

Table 6.b. Results of Scheffe Post Hoc Test for Vocabulary Retention Scores in Posttest1

	N	Subset for alpha = .05	
		1	2
verbal	24	21.2917	



control	22		24.9545
visual	25		26.7600
Sig.		1.000	.440

Means for groups in homogeneous subsets are displayed.

- a. Uses Harmonic Mean Sample Size = 23.600.
- b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 6.a illustrates a significant difference among the 3 groups regarding the vocabulary scores at the end of the fourth week (posttest 1) ($F = 8.167$, $P < .05$). Also, according to Table 6.b, the visual group (mean: 26.76) was rated as the highest in vocabulary retention. The control group (mean: 24.95) received the second lowest ranking and the verbal group (mean: 21.29) received the lowest ranking in vocabulary retention.

Control / Visual > Verbal

Table 7.a. Results of One-way ANOVA for Vocabulary Retention Scores in Posttest 2

		Sum of Squares	df	Mean Square	F	Sig.
post2	Between Groups	443.258	2	221.629	9.963	.00016**
	Within Groups	1512.658	68	22.245		
	Total	1955.915	70			

** Significant at $\alpha = .001$

Table 7.b. Results of Scheffe Post Hoc Test for Vocabulary Retention Scores in Posttest2

	N	Subset for alpha = .05	
		1	2



verbal	24	17.6250	
control	22	20.8182	20.8182
visual	25		23.6400
Sig.		.074	.129

Means for groups in homogeneous subsets are displayed.

- a. Uses Harmonic Mean Sample Size = 23.600.
- b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 7.a exhibits a significant difference among the 3 groups with regard to the vocabulary scores at the end of the sixth week (posttest 2) ($F = 9.963$, $P < .05$). As evident in Table 7.b, the visual group (mean: 23.64) received the highest ranking. The control group (mean: 20.81) received the second lowest ranking and the verbal group (mean: 17.62) was rated as the lowest in vocabulary retention.

Visual > Verbal

Table 8.a. Results of One-way ANOVA for Vocabulary Retention Scores in Posttest 3

		Sum of Squares	df	Mean Square	F	Sig.
post3	Between Groups	545.487	2	272.744	14.661	.000005**
	Within Groups	1264.992	68	18.603		
	Total	1810.479	70			

** Significant at $\alpha = .001$

Table 8.b. Results of Scheffe Post Hoc Test for Vocabulary Retention Scores in Posttest3



	N	Subset for alpha = .05	
		1	2
verbal	24	13.8333	
control	22	14.9091	
visual	25		20.0800
Sig.		.694	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 23.600.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 8.a shows a significant difference among the 3 groups regarding the vocabulary scores at the end of the eighth week (posttest 3) ($F = 14.661$, $P < .05$). Also, according to Table 8.b, the visual group (mean: 20.08) was rated as the highest in vocabulary retention. The control group (mean: 14.9) received the second lowest ranking and the verbal group (mean: 13.83) received the lowest ranking in vocabulary retention.

Visual > Control / Verbal



3.1.3. Results of the Writing Test

Here the extent of visual and verbal methods' effect is considered on learners' writing scores.

Table 9.a. Results of One-way ANOVA for Writing Test Scores

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	789.118	2	394.559	57.770	.000
Within Groups	464.431	68	6.830		
Total	1253.549	70			

Table 9.b. Results of Scheffe Post Hoc Test for Writing Test Scores in Posttest

	N	Subset for alpha = .05		
		1	2	3
verbal	24	8.0000		
control	22		10.8636	
visual	25			15.9200
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

- a. Uses Harmonic Mean Sample Size = 23.600.
- b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 9.a illustrates a significant difference among the 3 groups regarding the writing scores at the end of the fourth week ($F = 57.77$, $P < .05$). Also, according to Table 9.b, the visual group (mean: 15.92) was rated as the highest in written production. The control group (mean:



MJAL 2:5 August 2010

ISSN 0974-8741

**The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and
Written Production of Iranian Intermediate EFL Learners**

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshsabk

10.86) received the second lowest ranking and the verbal group (mean: 8.00) received the lowest ranking in written production.

Visual > Control > Verbal

4. Conclusions

As the data analysis indicated, the visual intelligence-based teaching classes benefited considerably more from learning and retaining vocabularies than the verbal intelligence-based teaching and control classes. It is concluded that verbal intelligence-based teaching has less efficiency than the traditional method. That is after 4 weeks, using verbal intelligence-based teaching has had less effect on learners' vocabulary score. The positive effect of visual intelligence-based teaching becomes obvious after six weeks; mean of these scores has considerable and meaningful increase comparing the control group scores that were taught through the traditional method.

There are two advantages related to this study. First, when the students learn the individual words, even if via the proper meaning, synonym / antonym, sentence, and translation, they are more likely to forget those words, compared to the time when they learn the words by visual intelligence-based instructions that are based on pictures, drawings, graphic symbols, and imaginations as well. Therefore, visual intelligence class improves the recall and retention of those words, since it is evident that visualizing and depicting data can be retrieved better in one's mind. As the second advantage, when the students learn each word visually, they can easily remember words and make sentences than the time they learn those words verbally. In fact, their writing quality improves significantly.

It is recommended that teachers, learners, and material writers take into account visual intelligence-based instructions and materials. Based on the conclusions of this research, the following implications can be drawn.



MJAL 2:5 August 2010

ISSN 0974-8741

The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and

Written Production of Iranian Intermediate EFL Learners

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshabk

1. Material writers should utilize the images in the vocabulary sections of books such as: photos, illustrations, drawings, graphic symbols, ideographic languages, and so forth.
2. English teachers can supply their instruction with an emphasis on available visual intelligence-based materials and thus, afford the students with some sort of awareness of these instructional materials (Armstrong, 2000). One way is by taking real objects to the classroom. The other way is using pictures which can be board drawings, wall pictures, charts, and flashcards. The teacher may use different kinds of strategies such as: physical demonstration, using mime and gesture, creating a visual memory for the word, pointing to the subjects, using visual aids, magazine's pictures, blackboard drawings, drawings on students' knowledge of the world, and imagination.
3. For learners, memorizing words with their corresponding images is more effective than memorizing them with only the texts of their spellings and meanings. As Armstrong (2000) mentioned, students can create their own "inner blackboard" and when asked to recall a specific body of information, they call up their mental blackboard and "see" the data wrote on it.

References

- Armstrong, T. (2000). *Multiple intelligences in the classroom*. Alexandria, VA: ASCD.
- French Allen, V. (1983). *Techniques in teaching vocabulary*. Oxford: Oxford University Press.
- Gardner, H. (1993). *Multiple intelligences: The theory in practice*. NY: Basic Books, McGraw-Hill.
- Grow, G. (1990). *Writing and multiple intelligences*. Presentation given at the annual meeting of the Association for Educators in Journalism and Mass Communication. ERIC Document Reproduction Service No. ED 406 643. Retrieved from: <http://www.longleaf.net/ggrow>
- Hoerr, T. R. (2000). *Becoming a multiple intelligences school*. Alexandria, VA: ASCD.



MJAL 2:5 August 2010

ISSN 0974-8741

The Impact of Visual and Verbal Intelligences-Based Teaching on the Vocabulary Retention and

Written Production of Iranian Intermediate EFL Learners

1.Reza Pishghadam, 2.Ebrahim Khodadady &3. Nastaran Khoshabk

Hornby, A. S. (2004). *Oxford advanced learner's dictionary*. Oxford: Oxford University Press.

Lin, P. Y. (2000). Multiple intelligence theory and English language teaching. Retrieved February 22, 2002, from: <http://highschool.english.nccu.edu.tw/paper/ying.doc>

Moras, S. (2001). Teaching vocabulary to advanced students: A lexical approach. Karen's linguistic issues. Retrieved May 31, 2008, from http://ucrel.lancs.ac.uk/publications/cl2007/paper/170_paper.pdf

Richards, J., Platt, J., & Webber, H. (1985). *Longman dictionary of applied linguistics*. Essex: Longman Group Limited.

Thornbury, S. (2004). *How to teach vocabulary*. Longman: Pearson Education Limited.