

## **Multiple Intelligence Theory and EFL Learners' Word Retention**

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### **Abstract**

*This study aims at examining the effect, if there is any, of MI based lessons on EFL learner's word retention. Before the treatment, a general English test, a vocabulary level test and an MI test were used in order to determine the participants' English proficiency, vocabulary level and intelligences. It was found that there is a positive correlation between English proficiency, vocabulary level, and word retention. The results of the vocabulary test at the end of the experiment showed that MI based lessons can help the participants improve their ability to retain word spelling.*

**Key words:** Multiple Intelligences theory, vocabulary learning, word retention, word spelling, word meaning.

*Gardner's philosophy: "When children are young, we should encourage well roundedness. As they grow older, it becomes more important to discover and cultivate areas of strength. Livelihood and happiness are more likely to emerge under those circumstances" (Edward, 2009)*

## **Introduction**

Most learners and teachers understand the importance of vocabulary acquisition. However, the practice of EFL vocabulary teaching has not been always responsive to such knowledge. It seems that some teachers have not fully recognized the tremendous communicative advantage of developing an extensive vocabulary. *"Without grammar, very little can be conveyed, without vocabulary, nothing can be conveyed"* (Wilkins, 1972, p.111). This is probably one of the reasons why EFL vocabulary teaching has become the focus of a number of studies in EFL teaching and learning. Investigating and utilizing methods and techniques to increase EFL learners' word mastery is a crucial task for EFL teachers. One of the theories that have recently underpinned techniques that are used in teaching vocabulary to EFL learners is Multiple Intelligence Theory (MI). Advocators of this theory believe that different learners have different kinds of intelligences. Many researchers have found a positive correlation between MI strategies and vocabulary learning (Armstrong,2009; Razmjoo, 2009; Javanmard,2012; Farahani & Kalkhoran,2014; Isabella, 2013; Grammarawi, 2014). However, most of those studies were conducted in an L1 context. This study set out to examine the effect of MI based lessons on EFL learners' vocabulary retention. The experiment was carried out in an EFL context.

## **Background**

The theory of multiple intelligences was developed in 1983 by Gardner, a professor of education at Harvard University. His theory suggests that the traditional notion of intelligence, based on I.Q. testing, is far too limited. Instead, he proposed original seven intelligences (Gardner, 1983), and then added the eighth and ninth intelligence (Gardner, 1999) to account for a broader range of human potential in children and adults. The nine intelligences can be described as follow:

- Linguistic intelligence: the ability to use language in special and creative ways, which something lawyers, writers, editors, and interpreters are strong (word smart)
- Logical-mathematical intelligence: the ability to think rationally, often found with doctors, engineers, programmers, and scientists (number/reasoning smart).
- Spatial intelligence: the ability to form mental models of the world, something architects, decorators, sculptors and painters are good at (picture smart)
- Bodily-kinesthetic intelligence: having a well-coordinated body, something found in athletes and craftsperson (body smart)
- Musical intelligence: a good ear for music, as is strong in singers and composers (music smart).
- Interpersonal intelligence: the ability to be able to work well with people, which is strong in salesperson, politicians, and teachers (people smart)
- Intrapersonal intelligence: the ability to understand oneself and apply one's talent successfully, which leads to happy and well-adjusted people in all areas of life (self smart).
- Naturalist intelligence: the ability to understand and organize the pattern of nature (nature smart)

- Existential intelligence: Ability to contemplate phenomena or questions beyond sensory data, such as the infinite and infinitesimal. Careers or callings that suit those with this intelligence include shamans, priest, physicist, psychologist.

There is a paucity of research about the application of the MI theory in language acquisition, especially in foreign and second language settings (Richards & Rogers, 2001). Armstrong (2009) suggests that MI possesses potential to be used in the teaching and learning of languages, as it provides multiple routes to learning. Gahala and Lange (1997, p.34) explained that “*teaching [foreign language] with MIs is a way of taking differences among students seriously, sharing that knowledge with students and parents, guiding students in taking responsibility for their own learning, and presenting worthwhile materials that maximize learning and understanding*”. Along similar lines, Richard & Rogers (2001) affirmed that the enhancement of MI theory into ESL teaching and learning provides teachers with a number of teaching strategies and approaches. MI based instructions motivate learners by spurring multiple ways of ascribing meaning to vocabulary being acquired. Morgan and Fonesca (2004) also made a similar point and detail how each intelligence proposed by Gardner can be applied to improve ESL teaching. They conclude that MI is very promising in the domain of teaching ESL, if handled appropriately in the classroom.

Past research has attempted to explore the relationship between MI theory and vocabulary learning. Brecher et al. (1998) conducted a program for improving the spelling of high frequency words in daily writings across the curriculum through the use of MI. The results indicated that the students showed significant improvement in spelling and in transferring 100 high frequency words correctly and to internalize the words in writings. Izabella (2013) investigated the use of MI theory to facilitate English vocabulary learning. The study found that students taught with MI based methods demonstrated more success in vocabulary acquisition and retention, than those who were exposed to traditional methods. Ghammrawi (2014) investigated MI and ESL teaching and learning in one private school in Beirut, Lebanon. The author recommended the utilization of MI in ESL teaching and learning, but two aspects should be taken into considerations. First, teachers need to check their MI profiles and make sure that they do not only address those intelligences that they enjoy the most. Second, teachers should be aware of teaching higher order thinking skills when MI theory is applied. The same way breadth is needed, depth within a given intelligence is also required. More recently, Farahani and Kalkhoran (2014) investigated the relationship between Iranian EFL learners’ MI and incidental vocabulary learning. The study finding showed that there was a significant relationship between Iranian EFL learners’ MI and their incidental vocabulary, especially with naturalist intelligence.

## **Methodology**

### ***Participants***

The 55 participants in this research were first year students at a university in Vietnam. They were between 19 and 22 years old at the beginning of the study and most of them had been studying English as a foreign language for seven years. Only two participants had studied French at high school. They were following the English course that lasted for five months. Their English was at the elementary level.

### ***Procedure***

At the beginning of the English course, all the participants took a general English test, an MI test and a vocabulary test. The general test was used to make sure the participants were at the same English level. The MI test was used to determine what category of intelligence each of them fell in. The participants were then divided into six groups according to their strongest intelligence: the interpersonal group (hereafter named group 1), the intrapersonal group (hereafter named group 2), the linguistic group (hereafter named group 3), the naturalist group (hereafter named group 4), the spatial group (hereafter named group 5), and the control group, whose intelligence orientation did not belong to any of the five categories mentioned. The participants did not know that they were put in five different groups. This was only for the researchers to collect and analyzed the data. Finally, the vocabulary test was to eliminate the possibility that some participants might be at a lower level of vocabulary but still achieved the same general English level because they were better at other language aspects.

After the participants had taken the three tests, the researchers started to implement the MI based methods. During the English lessons, different activities that catered different MI were carried out.

At the end of the English program, all the participants took a vocabulary test. This test was designed based on the content that they had studied in the course, thus containing words that they had learned from the lessons. This test aimed to examine how well the participants retained the words that they were taught during the program and to see if the MI based methods had any effect on their vocabulary retention.

### ***Materials***

Before the treatment, we conducted three tests in order to determine the participants' English level, vocabulary level and preferred learning styles (MI).

The general test covered grammar, reading and writing. It was a 40-minute test designed by the Foreign Languages and Information Technology center of the university.

The vocabulary level test was adapted from Nation (2010)'s. The test had been modified to make it easier for the participants to understand. This was to make sure that the test tested the participants' vocabulary level, not their guessing ability or test taking strategies. The test was bilingual (English and Vietnamese) and was a 14.000 version containing 140 multiple-choice items, with 10 items from each 1000 word family level.

The Multiple Intelligences checklist was adapted from Christison (1996)'s. The original version had seven MIs, but we added the naturalist intelligence when modifying the test.

The textbook that was used during the treatment was New Headway (Soars, 2007). Five lessons plans for the vocabulary parts of five units were made in such a way that the participants' MIs were taken into account. What happened during these lessons were carefully recorded in the researchers' diary-

The vocabulary test was designed to determine how well the participants retained the spelling and meaning of the words they learned in the course. There were 100 words put in 100 rows and 3 columns. In the first column, there was a word with two or more letters omitted. The second column was left blank for the participants to write the

spelling of that word. The third column was reserved for them to write the meaning of the word.

## Results

In order to determine if MI based lessons facilitated the participants', we calculated their scores on the vocabulary test at the end of the treatment, then compared among the six groups (see Table 1).

**Table 1 Means and Standard Deviations of Groups' Scores on Spelling and Meaning**

	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>	<i>Group 4</i>	<i>Group 5</i>	<i>Control group</i>
<i>Spelling</i>	67.8	61.0	62.3	45.5	51.7	50.6
<i>Meaning</i>	50.0	31.8	39.8	33.3	24.8	30.3

From the data in Table 1, it is apparent that the five treatment groups performed differently on the vocabulary test. Regarding spelling, group 1 ranked the first with an average score of 67.8 out of 100. Group 2 and group 3 respectively had 61.0 and 62.3. The other two treatment groups ranked the fourth and fifth with an average score of 45.5 and 51.7. The control group had average score of 50.6. As it can be seen, there was a difference of 17.2 points between group 1 and the control group, a difference of 10.4 points between group 2 and the control group, and a difference of 11.7 points between group 3 and the control group. These differences are not statistically significant but pedagogically meaningful as an increase of over 10 points out of 100 is a remarkable change in English language learning. The data indicated that group 5 made a slightly higher score and group 4 had a lower score than the control group.

Regarding the score on meaning, it is apparent that group 1 ranked the first with an average score of 50.0 out of 100. Group 3 ranked the second with an average score of 39.8. Groups 2 and 4 respectively had 31.8 and 33.3. Four of the five treatment groups made a higher score than the control group. Although the differences between the treatment groups and the control group are not statistically significant, it is worth mentioning because the difference between group 1 and the control group was 19.7 points, which might be noticeable to English language teachers.

Comparing the results of spelling retention and meaning retention, we could see that the participants tended to do better at spelling the words. All of the groups had a higher score on spelling than that on meaning. The average score on spelling for all the six groups was 56.4 while the average score on meaning was only 35.0.

Interestingly, the results from the vocabulary level test and the general English test indicated that there was a correlation between the participants' vocabulary size and their English proficiency. In other words, those with higher scores on the vocabulary test also gained higher scores on the general English test. First, we divided the participants into three groups according to their vocabulary scores. The first group had their vocabulary scores fall below 10. The second group scored from 10 to under 20 and the third group had their scores range from 20 to 35. This group did the best on the vocabulary test. After that, we calculated the average score on the general English test by each group. Table 2 presents the mean scores on the vocabulary and general English test for the three groups.

**Table 2 Means of Vocabulary Level and English Proficiency**

	<i>Group A</i>	<i>Group B</i>	<i>Group C</i>
<i>Vocabulary score</i>	7.1	13.8	26.7
<i>English proficiency score</i>	3.2	4.9	5.1

As can be seen from Table 2, the group that had the lowest average score on the vocabulary test also performed the worst on the general English test. The group that did the best on the vocabulary test also had the highest average score on the general English test. This result reinforces the validity of the two tests and confirms that the study's findings are reliable.

An examination into the relationship between the vocabulary level test, the general test and the vocabulary test at the end of the treatment was also taken. A positive correlation was found between the vocabulary test scores, vocabulary level scores, and the general English scores (see Table 3).

**Table 3 Means of Vocabulary Level, English Proficiency, Spelling and Meaning Retention**

	<i>Group A</i>	<i>Group B</i>	<i>Group C</i>
<i>Vocabulary score</i>	7.1	13.8	26.7
<i>English proficiency score</i>	3.2	4.9	5.1
<i>Spelling score</i>	49.2	57.9	62.4
<i>Meaning score</i>	25.4	36.8	44.6

As Table 3 shows, there was a positive correlation between the vocabulary level, English proficiency, spelling retention and meaning retention. Group C, which ranked the first on vocabulary level test (26.7) also outperformed the other two groups on the other two types of tests. Group A, which did the worst on the vocabulary level test, ranked the last on English proficiency, word spelling retention and word meaning retention.

### **Discussion**

The study set out to determine if the use of MI based lessons had any effect on EFL learners' vocabulary retention. Regarding spelling retention, it was found that this method helped three treatment groups (group 1, group 2 and group 3) gain a remarkably higher scores on spelling retention than the control group. The results indicated that groups 1, 2, and 3 scored at least 34% higher than the control group on spelling. This finding is meaningful and encouraging to English teachers who are rendering the usefulness of MI based activities. However, the data showed that groups 4 had a lower score than the control group and group 5 performed just slightly better than the control group. An analysis of the activities used during the treatment may provide an explanation to this. As shown in Table 4, only five among all the activities used during the treatment were designed for the sake of the naturalist intelligence participants and another five for the sake of the spatial intelligence participants. Meanwhile, linguistic, interpersonal and intrapersonal intelligences were targeted more frequently and intensively. Sixteen activities used were related to linguistic intelligence; twelve activities were related to interpersonal intelligence; and 14 activities were related to intrapersonal intelligence. This was probably why groups 4 and 5 did not do as well as groups 1, 2, and 3 on the test.

As it can be seen from Table 4, the highest score on spelling belonged to the interpersonal group, one of whom possessed the highest score (82) among all the

participants. The lowest score is 47 and the group's mean is 67.8. This result can be explained by the fact that the participants in this group got the highest scores on the vocabulary level test. In addition to this, their scores on the MI test were among the highest, which meant they had a very strong preference to interpersonal activities. Moreover, preferring to work interpersonally, these participants might have exchanged their ideas and worked with other people while taking part in activities that had not been designed to target their strong intelligence, thus benefitted from those other activities as well.

**Table 4: Number of Activities Designed for each Type of MI**

<i>Types of MI</i>	<i>Number of activities</i>
<i>Interpersonal</i>	12
<i>Intrapersonal</i>	14
<i>Linguistic</i>	16
<i>Naturalist</i>	5
<i>Spatial</i>	5
<i>Control</i>	0

Regarding the performance on retaining word meaning, the study found that four of the five treatment groups did better than the control group. Group 1 outperformed the other groups and made a difference of almost 20 points compared with the control group. Group 3 made a difference of almost 10 points compared with the control group. These findings look promising to English language teachers, especially those who preferred to use the interpersonal and linguistic strategy activities in their classroom. However, what seems disappointing about these results was that group 4 had a slightly lower score than the control group. The reason for this is not clear but it may have something to do with the format of the test at the end of the treatment, or with the low number of activities that were designed to target this group's strong intelligence. Note that spatial intelligence involves categorizing and sorting out things while the test required the participants to just retain and write down the words. Another possible explanation for this result may be the lack of serious attitude toward doing the test as the participants were told the test results would not be used for grading.

In this study, no correlation was found between the participants' scores on spelling and their scores on meaning although the two groups that did the best on spelling also ranked the first and second on meaning. Among the other groups, there were inconsistencies in their scores for the two aspects. The result suggests that retaining spelling well does not mean remembering the meaning of the words. This finding may be helpful to English teachers because it raises their awareness of balancing activities in vocabulary lessons in the way to facilitate learners' perception of both spelling and meaning.

Interestingly, there was a tendency that the participants performed better on spelling than meaning. The mean score on spelling for all groups was 56.5 whereas the mean score on meaning was only 35. This result may suggest several issues. First, the task on the test required the participants to write down the words' written form based on the given clues. Only some letters from each word were omitted. There was, therefore, a possibility that these clues helped the participants to perform better and they could have guessed what letters were missing based on the given letters. However, for the meaning memory task, the participants had to write the meaning of the word without having any clues. Hence, it could have been more difficult for the participants to do this task.

Second, the low performance of the participants on the meaning may have something to do with the activities that were carried out during the lessons in the treatment. It may be that those activities facilitated the learners' perception of word form but not their perception of word meaning.

Another interesting finding withdrawn from the data was that there is a close relationship between the participants' performance on the vocabulary level test, general English test, and their performance on spelling and meaning retention. This validates the tests used in the study and at the same time, confirms the reliability of the results. It also eliminates the possibility that the treatment groups outperformed the other groups on the vocabulary test were genuinely better, not that they were cheating or that the other groups were not taking the test seriously.

### **Conclusion**

This study investigated the effect of MI based lessons on EFL learners' word retention. Five treatment groups were formed according to their strongest intelligence, namely the interpersonal group, the intrapersonal group, the linguistic group, the naturalist group and the spatial group. The control group was consisted of participants whose strongest intelligence did not belong to any of these five categories. In order to determine whether MI based lessons affected the participants' retention of spelling and meaning of words they were taught in the English program, a vocabulary level test, a general English test, an MI test and a vocabulary test were used.

One of the significant findings to emerge from this study is that most of the participants in the treatment groups outperformed the participants in the control group in retaining word spelling and meaning. Among the five treatment groups, the interpersonal, intrapersonal and linguistic groups were the best. These findings suggest that MI based lessons play a certain role in assisting EFL learners retain vocabulary, and that learners whose strongest intelligence is either interpersonal, intrapersonal or linguistic possibly benefit the most from activities that are designed to cater for their learning preferences.

The results of this study indicate that there is a correlation between learners' vocabulary level, English proficiency, and word retention. The groups that had the highest score on the vocabulary level test also did the best on the other two tests. Similarly, the groups with lower scores on the vocabulary level test had lower scores on the other two tests. This reinforces the reliability of the main finding and strengthens the idea that learners' language performance has a close relationship with their language competency. One of the practical implications of this finding may be that English language teachers should not bypass vocabulary teaching for other aspects because this language element plays a crucial role for learners to acquire and perform the target language better.

The research had found that the participants did better on the spelling task than the meaning task. Perhaps this is one of the limitations of this study. It is possible that the format of the tasks had something to do with the participants' unequal performances on the two aspects. More research, therefore, is needed before we can conclude that EFL learners' word spelling retention is better than their word meaning retention. In future studies, it is suggested that the tasks are modified in the way that both of them are equally difficult and provide the same amount of clues. It is fortunate that the study did not include formative assessment of the participants' word retention. That is, during the treatment, after each of the lessons, a small piece of assessment could be carried out.

Further research could usefully explore how well learners perform during the treatment and compare it with the result of the test at the end of the treatment. This can probably increase the reliability of the results.

The results of this research show that two of the treatment groups did not outperform the control groups on the vocabulary test. This could be explained by the low number of activities that were designed to cater for the learning preferences of the participants in these two groups. However, before any conclusion is made, further research should be carried out to determine whether these two groups would perform better if they are given more activities that suit their intelligence categories.

Taken together, the findings emerging from this study extend our knowledge of the use of MI based lessons and method in EFL teaching. Several practical implications can be withdrawn from these findings. First, the participants in the experiment came from different departments of the university, thus may have had different strengths and intelligences. The use of MI based method in the classroom facilitated them to learn better. It is therefore recommended that English teachers consider their learners' preference and strongest intelligence when lesson planning in order to give as many learners as possible opportunities to acquire the language better and enjoy learning more. Second, English language teachers should pay adequate attention to vocabulary teaching as this language aspect closely links to learners' performance on English proficiency tests. In other words, teaching vocabulary enhances EFL learners' learning process. Third, the results of the vocabulary test showed that the participants did better on spelling than on meaning tasks. Although these results could have been distorted by the format of the tasks, it is worthy to note that when lesson planning, English language teachers should aim to design activities that facilitate learners' acquisition of both written form and meaning of the word. In conclusion, notwithstanding the limitations, the present study confirms previous findings and contributes additional evidence for the positive impact of MI theory in EFL teaching, and provides significant implications for the understanding of how MI theory should be applied in English language classrooms.

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**Comment [aj1]:** References are not usually numbered (1, 2, 3, etc.). Also, in APA style, should use hanging indentation.

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