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The Relationship between Interpersonal and Intra-personal Intelligences and Vocabulary Learning Strategies Used by EFL Learners

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Abstract

The present study aimed at finding out whether there existed a relationship between EFL learners' dominant intelligence and vocabulary learning strategies they used. The first research question posed was related to the preferred vocabulary learning strategies used by EFL learners. It was concluded that EFL learners mostly preferred intrapersonal vocabulary learning strategies. The second research question focused on the type of dominant intelligence among EFL learners. The results indicated that EFL learners were mostly intra-personally dominant. In the third research question, the correlation between interpersonal and intrapersonal intelligences and vocabulary learning strategies was calculated. The statistics showed that each one of the vocabulary learning strategies could be categorized as either interpersonal or intrapersonal based on the degree and significance of the correlation each one had with either interpersonal or intrapersonal statements in the questionnaire. Finally, a retrospective Think-Aloud Protocol (TAP) procedure was conducted. The results showed that EFL learners mostly preferred using intra-personal vocabulary learning strategies than interpersonal ones. Therefore, it was concluded that if the learners knew what their dominant intelligence was, they would be able to choose the appropriate vocabulary learning strategy.

Keywords: *Interpersonal intelligence, Intrapersonal intelligence, Vocabulary learning strategies*

1. Introduction

The concept of "Multiple Intelligence" was first introduced by Gardner (1983). Gardner believed that human mind was multi-dimensional and consisted of more than a single compartment which in those days was called IQ. So Gardner confronted the concept of IQ (Baum, 2005) and introduced new intelligences each of which related to one activity performed by both body and mind of each individual. These intelligences according to Gardner (1983) are particular for each individual, each person is considered to be strong in one or more of these intelligences. Of course

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Gardner (1983) theory of multiple intelligence is still well-known and is still being thoroughly investigated.

Multiple intelligence was first used in the field of psychology and was quite popular at its time (Richards & Rodgers, 2001). Language and the processes involved with its components take place in mind (Yule, 1985). It can be said that multiple intelligences and strategies used for learning a second and foreign languages both exist in the brain.

Later on, MI (i.e. Multiple Intelligence) found its way to the field of learning second and foreign languages (Richards & Rodgers, 2001) and has been the subject of investigation ever since. Nowadays many researchers have tried to investigate the existence of the relationship between each of these intelligences and different learning strategies used by learners in order to facilitate their learning process. One of the areas, which seems to be confusing and difficult to manage for learners, is learning new vocabularies and guessing the meanings under different circumstances. Because learning vocabulary is related to learning a new language and since its process happens in brain and also for the reason that multiple intelligences are considered as cognitive abilities, it is assumed that there is a relationship between these intelligences and vocabulary learning strategies.

Iranian language learners, especially in the last decade, have found themselves lost in an ocean of new English vocabularies and definitions. The range of new words added to the prior ones is and always has been a gradual and continuous process. If learners are to learn and retain these new and baffling words, they need to know what exactly they should do, in other words they need a map or guidance for learning and guessing the meaning of the new vocabularies in the context. Therefore, EFL learners need an appropriate strategy in learning new vocabularies, they can't achieve competency in learning, retaining and eventually using vocabularies unless they use the correct strategy in the first place. Since learning vocabulary and multiple intelligences are assumed to be related concepts, it is believed that if we help learners recognize their dominant related intelligence, and provide them with a list of vocabulary learning strategies they will be able to find their way in the light of their awareness.

The reason why among Gardner's intelligences only two, namely, interpersonal and intrapersonal intelligences were selected for the purpose of this study is that learning vocabulary is logically more related to interactions and personal or self-regulatory strategies. Therefore, the best intelligences that could fit the purpose of the study are interpersonal intelligence to satisfy the interactional aspect and intrapersonal intelligence to satisfy personal or self-regulatory aspect of learning new vocabularies. It is worth mentioning that there are other intelligences such as Bodily/Kinesthetic Intelligence which could be related to the process of vocabulary learning but for the purpose of this study only the most related, most applicable and most common intelligences used among foreign language learners are selected.

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2. Review of Literature

2a. Vocabulary learning strategies

There have been many strategies suggested for learning foreign language vocabulary items, for example, Kudo (1999) introduced a set of vocabulary learning strategies which are widely used among all language learners.

In a study, Kafipour, Yazdi, Soori and Shokrpour (2011) conducted a study on the strategies that Iranian EFL learners use in order to learn new vocabularies. What they found was that all EFL learners used different and various strategies to learn new vocabularies. Some of them used memory strategies while others used social strategies. Although Kaipour et al (2011) believed that memory strategies were used more among EFL learners, social strategies and their effects on learning new vocabularies should not be underestimated. Social strategies for learning new vocabularies can be related to interpersonal intelligence of the learners; it is related to how EFL learners use their communication ability and interaction to learn and retain new vocabularies. It is worth mentioning that intrapersonal intelligence should also be taken into consideration. Strategies that independent learners and EFL learners who learn better when they're alone use are of utmost importance. Since each EFL learner has a mind of his/her own then there are plenty of different strategies that learners use in order to learn new vocabularies. In this article Kafipour et al (2011) also emphasized that it is important that EFL learners learn these different strategies. Another factor is added to this study as well, which is multiple intelligence. It is better to learn new vocabulary learning strategies based on the dominant intelligence, which differs for each learner. Each vocabulary learning strategy is related to a particular intelligence. So it is wise for the learners to choose specific strategies which are appropriate for them based on their stronger intelligence.

In another investigation, Tuan (2011) conducted a study on self-learning vocabulary. This is study focused on the autonomy of learners in using strategies and learning new vocabularies. According to Tuan (2011) there are 3 general approaches to vocabulary learning which are mentioned by Hunt and Begler (2002). These three strategies are: "incidental vocabulary learning", "explicit vocabulary learning" and "independent strategy development". Incidental vocabulary learning involves learning new vocabularies without direct intention to learn (Tuan, 2011), similar to acquiring the first language. Explicit vocabulary learning is another name for direct vocabulary learning, EFL learners focus their attentions directly on the form and meaning of the new vocabulary (Tuan, 2011). Examples of explicit vocabulary learning are dictionary using, vocabulary list and translation. Independent strategy development, as Nunan (1999) focuses on, is teaching EFL learners to learn new vocabularies in context. So according to Nunan (1999) it is best that the teachers focus learners' attention to guessing meaning from context and learn new vocabularies contextually. Tuan (2011) in this paper has mentioned

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different types of strategies that learners use in order to learn new vocabularies. These strategies are somehow self-regulatory. Self-regulatory strategies can be related to intrapersonal intelligence, each individual EFL learner has different strategies to learn new vocabularies on his/her own. When these learners try to lean the new words, they use certain types of strategies which are independent and require the individual focus of the learner himself. These strategies call for intrapersonal intelligence and the mental capacity of the learner to cope with different self-regulatory strategies used to learn the new words.

Vocabulary learning strategies can be used by learners of different proficiency and in different contexts. Lotfi (2007) takes into consideration an undeniably important factor which is "context". Context is a crucial part of learning new vocabularies, words out of context are very difficult to learn and retain. Lotfi (2007) relates the context to the vocabulary learning strategies used by EFL learners, Lotfi (2007) believes that there should be a rationale and taxonomy for learning new vocabularies in EFL context. According to Nation (2001) vocabulary learning strategies are considered to be one part of language learning strategies, in other words, vocabulary learning strategies are crucial in learning a new language. If learners know what vocabulary learning strategies to use they will become successful language learners. Gu and Johnson (1996) categorize all vocabulary learning strategies into cognitive, meta-cognitive, memory and activation strategies. All these categories are related to mind and the brain; multiple intelligences as discussed earlier are also placed inside the brain so vocabulary learning strategies, based on Gu and Johnson (1996) categorization, are related to multiple intelligences. Using these different strategies can help learners become independent and autonomous (Chamot, 2001). When EFL learners understand which strategies to use in order to learn and retain the new vocabularies better and in a more efficient way, their self-confidence and independency increase consequently. According to Lotfi (2007) there are some consideration that should be taken into account in teaching the strategies to EFL learners and helping them understand these strategies. Ellis (1994) believes that some learners need to be explained that learning new vocabulary strategies is for the own good and benefit. Some EFL learners do not take vocabulary learning strategies seriously and need to be enlightened. In addition to this important aspect of teaching EFL learners new vocabulary learning strategies, another important consideration is that learners should be given a chance to practice the strategies and become independent (Nation, 2001). Another important factor that should be taken into consideration is that EFL learners should learn to use vocabulary learning strategies in context (Schmitt, 1997). Contextualized vocabulary learning is a must for an EFL learner, when the words are used in context they will be learned and retained better. Even the strategies used for learning new vocabularies by EFL learners should be learned in context (Schmitt, 1997). Lotfi (2007) believes that knowing vocabulary learning strategies is crucial in the process of becoming a successful language learner. These strategies are taught and learned through different frameworks and taxonomies (Lotfi, 2007). When these strategies are learned, EFL learners have the chance to choose among different and various types of vocabularies. Although knowing the strategies is a good and efficient way of

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learning new vocabularies but it doesn't seem enough. EFL learners also need to know what part of their brain is stronger, in other words which type of intelligence is dominant within them. Knowing the answer to the question of intelligence dominancy alongside knowing different types of vocabulary learning strategies is a guaranteed way of learning and retaining new and frustrating vocabularies. Although there are, as Gu and Johnson (1996) categorized them, cognitive, meta-cognitive, memory and activation strategies to learning the new vocabularies, there is a need for knowing and realizing the inter-personally or intra-personally dominant intelligence among EFL learners. It is through this knowledge that learning vocabulary gets easier and less tiring.

In another study, Celik and Toptas (2010) also investigated vocabulary learning strategy use among Turkish EFL learners. In this investigation Celik et al. (2010) tried to consider vocabulary learning strategies according to individual learner's language level and proficiency. This individualization is somehow similar to the current study in the sense that it takes each individual learner to be different from others. The results that Celik et al. (2010) gathered showed a significant difference among EFL learners regarding their use of vocabulary learning strategies. These individual differences were based on the level of proficiency of each learner. The results also indicated that there existed a positive relationship between the proficiency level of the learners and their use of vocabulary learning strategies. These significant results show that not all the learners are alike; each learner is different from others. This is in line with what Gardner (1983) believes, Gardner focuses on the fact that each individual is different from others regarding his/her intelligences and abilities. If learners use different strategies for learning vocabularies based on their proficiency, then it can be said that they are also different in using various vocabulary learning strategies based on their preferred and dominant intelligence(s). Every single activity that each EFL learner performs in order to learn and retain new vocabularies is individually specific to the learner him/herself. Also each EFL learner has one or more dominant intelligence(s) which is specific to him/herself. Therefore it can be concluded that each EFL learner, based on his/her own dominant intelligence(s), has specific tendency toward choosing specific type(s) of vocabulary learning strategies. Consequently, it can be said that vocabulary learning strategies chosen by EFL learners are based on their dominant intelligence(s).

All of the studies conducted so far have shown that learning strategies are essential and crucial in learning a second or foreign language. It is wise to say that learning strategies are interwoven with learning a component of a new language. For EFL learners it is best to master these strategies and use them wisely in the process learning a foreign language.

Vocabulary is the most difficult and challenging part of learning a new language. Memorizing, retaining and authentically using these vocabularies is a very difficult task on the part of EFL

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learners. There are various vocabulary learning strategies introduced for the learners to use in order to lessen the difficulty of memorizing and retaining the new and frustrating vocabularies.

2b. Multiple Intelligences

On the other hand there is the notion of multiple intelligences. In the studies mentioned before, it has been concluded by many researchers so far that learning a foreign or second language is, to a great extent, determined by dominant intelligence(s) of the learner him/herself. Also we have mentioned that there are various learning strategies introduced for learning and memorizing new vocabularies. So if EFL learners want to learn these strategies as well as the language itself, they have to utilize their intelligences. If the learner is intra-personally dominant then he/she should use those specific vocabulary learning strategies which are more related to the learner inner abilities and capabilities. On the other hand if the learner is inter-personally dominant, logically, he/she should make use of those strategies which are more related to social relationships and learning language through communication.

In a study, Akbari and Hosseini (2008) investigated the relationship between MI and language learning strategies among foreign language learners, in this study multiple intelligences of the students were measured using MIDAS (Multiple Intelligence Developmental Assessment Scale) and on the other hand their language learning strategies were measured by SILL (Strategy use Inventory for Language Learning) and also a retired version of the IELTS. The results of this study showed that the correlation between MI and language learning strategies was 0.46. The highest correlation was between MI and cognitive as well as meta-cognitive learning strategies which suggested that MI was of a cognitive nature. The results in this investigation suggested that MI is to some extent related to language learning strategies especially cognitive/meta-cognitive ones.

In another investigation, Miric (2010) tried to find a relationship between multiple intelligences of pharmacy students learning English as foreign language at the Medical University of Nis and their capability and interest in learning the language. The results of this study showed that multiple intelligences of the learners had a positive effect on their strength and interest in learning English as foreign language. As learners became more engaged with their intelligences their capability in learning English increased as well. Based on these results it is possible to say that learners' intelligences have relationship with their learning styles and strategies.
In another study, Seifoori and Zarei (2011) investigated the relationship between Iranian EFL learners' perceptual learning styles and their multiple intelligences. The instruments used in this investigation were a 60 item PET to make sure that students were homogenous and a revised version of PLSPQ (Perceptual Learning Style Preference Questionnaire) to measure learners' perceptual learning styles, also MI inventory was used to measure multiple intelligences of the learners. The results of this study suggested that although there was not a significant correlation

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between tactile learning style, kinesthetic learning style and other intelligences, there existed a significant relationship between other Iranian learners' learning styles and their multiple intelligences. Although the correlation was not considered to be very high, it could be considered as a fair amount.

In another investigation, Soleimani, Moinnzadeh, Kassaian, Ketabi (2012) investigated the effect of Instruction Based on MI theory on the attitude and learning of General English. Since the purpose of the current investigation is on the relationship between MI and vocabulary learning strategies of EFL learners. In this investigation two groups were formed in one group they were taught based on the traditional methods of teaching and in the other they were taught based on MIT. The results showed that the teachings based on MI had been more effective than teaching general English based on the traditional methods. In this investigation the focus was on teachings based on MI but it is worth investigating the learning based on MI as well.

Another researcher, Barcraft (2004), investigated second language vocabulary acquisition based on a lexical input processing approach. The significance of this investigation to the current study is a summary of research areas related to L2 Vocabulary Acquisition provided in this paper. Using these areas we can get a quick review of what has already been done on the subject of second language vocabulary acquisition and as a result some of the strategies used in the process of vocabulary acquisition and learning can be inferred from the findings in this table.

In another study, Winke and Abbuhl (2007) conducted a case study on a Chinese foreign language class and their vocabulary learning strategies. In this study a wide range of input-based strategies, out-put based strategies and cognition-based strategies were introduced which is beneficial for the purpose of this study in the sense that these strategies can be used in forming a questionnaire or revise a few items of the questionnaire in order to measure vocabulary learning strategies of EFL students.

In another investigation, Ma Ping and Siraj (2012) explored self-regulatory strategies for vocabulary learning among Chinese EFL learners. This study can contribute to the goal of present investigation since it introduces many strategies used by learners in order to master their vocabulary. In order to form a questionnaire on self-regulatory or self-study vocabulary learning strategies, we need different types of strategies introduced and tested by other researchers in the field or use an already standardized and valid questionnaire which has already past expert judgment phase. Some of these strategies are namely: dictionary use, note taking, memory rehearsal, guessing and memory encoding.

In a study conducted on the textbook designing for the students, Gurkaynak (2015) conducted an investigation on the effect of appropriate choice of intelligence in designing textbooks for the students. The results proved that using MI in designing materials for learners had significant

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effect on learning process as well as perception of language and cognitive processes in this respect (Gurkaynak, 2015). The results of this study is in line with the present investigation in the sense that using multiple intelligence in the process of learning and teaching would increase the efficiency of learning and teaching process.

3. Significance of the Study

The main goal or purpose of the current investigation is to determine whether there is a relationship between interpersonal/intrapersonal intelligences of learners of English as a foreign language and their preferred vocabulary self-regulatory strategy or strategies. Language is an ever changing phenomenon, and along with it, new vocabularies emerge. Every day, new vocabularies, slangs, expressions and idioms are introduced to the language, learning all these aspects, especially vocabularies, and gain expertise in using and retaining them is a difficult task for language learners. Learning the vocabularies of a language which is not used in everyday conversation is, indeed, a difficult task for a foreign language learners.

Iranian learners have always tried to solve the problem of learning new and difficult vocabularies as well as guessing their meanings in the context. So how can we help these learners solve this dilemma? If the dominant intelligence of the learner is determined, then a new possibility will emerges.

Reading lists of new English vocabularies without knowing what strategy to use is a mistake that most novice EFL learners in Iran make. Even if they read many vocabulary books which are available in the market, they won't remember most of them when put in a certain situation, which demands for the quick word choice. In order to solve this problem an EFL learner needs to follow the path of learning new English vocabularies systematically. This system in vocabulary learning process requires the usage of dominant intelligence which may differ for each individual. In other words, the categorization and determination of the dominant intelligence can, to a great extent, help EFL learners to learn, guess and retain the new and difficult vocabularies.

As a result, through the current investigation it is endeavored to solve the problem of learning new and frustrating English vocabularies that the Iranian learners have always confronted. Many non-native English learners have difficulty finding the correct and appropriate vocabulary for certain contexts and situations. Therefore, they will be disappointed and demotivated toward learning English as foreign language. The findings of this study can help these learners improve their lexicon and the appropriate contextual use of the certain "hard-to-remember" vocabularies.

4. Research Questions and Hypotheses

Based on the problem under study, the following research questions are addressed:

1. What are the preferred vocabulary learning strategies used by the Iranian EFL learners?

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2. Which type of intelligence (interpersonal/intrapersonal) is dominant among Iranian EFL learners?
3. Is there a relationship between dominant intelligence and preferred vocabulary learning strategies?

Based on the research questions which were posed, the following hypotheses are formed:

1. There is a difference between interpersonal/intrapersonal intelligences in terms of their domination in Iranian EFL learners.
2. There is a relationship between dominant intelligence and preferred vocabulary learning strategies.

5. Methodology

5.1.Participants

The population chosen for the present study consisted of intermediate EFL learners. Since these learners attended English classes in the institute every day, they had the most connection with English as a foreign language. These learners were almost of the same age with one year or two fluctuations, they were all selected from the male community of foreign language learners, and they were averagely proficient in English, in other words they were intermediate EFL learners.
The sample chosen from the previously mentioned population was a mixed class of EFL learners from three intermediate classes in the institute, this mixed class sample included 42 intermediate EFL learners who were previously tested with OPT held in the institute. All 42 EFL learners, selected from the previously mentioned population, were chosen for the purpose of the study. Since all these learners were from the same class, all had similar proficiency in English; they were almost of the same age and had similar years of experience in learning English as a foreign language. They also took the Oxford Placement Test conducted by the institute itself prior to the beginning the course in order to make sure they were all in intermediate level.

5.2.Instruments

The instruments used for the purpose of this study were as follows:

a) Multiple intelligences and vocabulary learning, guessing and retention strategies questionnaire
b) An oral interview (TAP) along with a paragraph of reasonable readability

The two aspects of multiple intelligence selected for the purpose of the study were, namely, interpersonal and intrapersonal. Hence, the first two parts of the questionnaire were about these two intelligences. These two parts of the questionnaire were based on Michael Berman (1998) and Mary Ann Christison (1999) MI checklist. Some of the items from both checklists were omitted to make the questionnaire more appropriate for this study. The third part of the

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questionnaire was related to vocabulary learning, guessing and retention strategies which were introduced by Kudo (1999). The third part, the same as first and second part, consisted of some items which were chosen and selected among others. The whole questionnaire included 51 statements, 9 were related to interpersonal intelligence, 9 were about intrapersonal intelligence and 33 statements were on vocabulary learning strategies. The reason why these MI checklists and vocabulary learning strategies were selected was that Berman (1998), Christison (1999) and Kudo (1999) all had already introduced and tested each and every item of their checklists and vocabulary strategies. As a result, these statements have the prerequisite validity and were more reliable than other new and novel statements and items.

The second instrument which was used for the purpose of data collection and increasing the validity of the questionnaire was an interview. This interview included 6 EFL learners, 3 form those who were inter-personally dominant and 3 from those who were intra-personally dominant, who were required to read a paragraph and guess the meaning of the new vocabularies. This interview increased the validity of the previously used questionnaire in the sense that it verified that the strategies which inter-personally and intra-personally dominant EFL learners used were chosen accurately in the questionnaire. After conducting this interview it was concluded that inter-personally dominant learners actually used the strategies they had selected in the questionnaire, the same was true about intra-personally dominant EFL learners. The paragraph selected for the interview was reasonably difficult, the readability or the difficulty of this paragraph was tested through *Flesch Reading Ease Test.* This test proved that readability of the paragraph was 68.01 which was a reasonable amount of difficulty for junior EFL learners. Based on Flesch Reading Ease Test there are different levels of readability each of which is appropriate for certain level of proficiency. Flesch categorization for text readability or text ease is provided in Table 1. The formula for calculating the amount of readability for a paragraph based on Flesch Reading Ease Test is provided and elaborated in data analysis section.

Table: 1
Flesch readability chart

Score	Notes
90.0 – 100.0	Easily understood by an average 11 years old student
60.0 – 70.0	Easily understood by 13 – 15 years old student
0.0 – 30.0	Best understood by university graduates

The paragraph chosen for the purpose of the study proved to have the readability of 68.01. Based on Table 1, this paragraph's readability is within the second range. The second range includes ESL 13-15 years old students. This should be taken into consideration that although the selected paragraph seemed to be appropriate for 13-15 years old students, our population of learners were EFL ones not ESL learners. The paragraph which is appropriate for teenager ESL learners are, to

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a great extent, more difficult for EFL learners, even if these EFL learners are university ones. This is why a paragraph with average readability based on Flesch readability scale was chosen.

Since the questionnaire chosen for the purpose of the study was not adopted from Berman (1998), Christison (1999) and Kudo (1999) and because it was adapted from the work of aforementioned researchers, this questionnaire needed to undergo standardization In order to increase the content validity of the questionnaire. To standardize the questionnaire a pilot study was conducted. In the process of piloting the questionnaire, it was given to the learners for the first time. α Cronbach was calculated and based on the results this questionnaire was standardized. After calculating α Cronbach the malfunctioning items and statements were removed from the questionnaire.

Through the piloting procedure, the content validity of the study was increased. The content of the questionnaire was adapted and as a result required standardization in order to make sure all the items and statements were appropriate and suitable for the study. There were a few items which were malfunctioning, some of which were removed after the expert judgment procedure and some others after the piloting procedure.

5.2.Procedure

The data analyzed in this study was collected through a certain, preplanned procedure. This multi-phase, multi-method procedure involved using a questionnaire as well as conducting a retrospective TAP procedure which was conducted immediately after the questionnaires were filled. For the beginning, the questionnaire was given to the EFL learner population which included other classes in the institution whose learners were at the same level as the sample itself, intermediate level. The reliability of the questionnaire was computed using α Cronbach coefficient formula. The first session of data phase was completely focused on standardizing the questionnaire, omitting and adding some statements. For the purpose of standardizing the questionnaire, a pilot study was conducted. During the process of piloting the questionnaire other samples of the students, from the same level of proficiency and age, were selected in order to prevent the main sample group from getting familiar with the items. In this phase of the study it was endeavored to standardize the questionnaire through piloting procedure and also preventing the main sample group from getting familiar with the items in the questionnaire. Therefore, in the next phases of the study, when the questionnaire was given to the main sample group they were not familiar with the items and they were all unseen.

The second session of data collection procedure involved the same sample group. The EFL learners were given the standardized form of the questionnaire to complete. After the second phase and before the third phase, which was the last phase, the questionnaires were analyzed again and scored based on the lickert scale. After the scoring was completed the EFL learners were grouped, based on their score on the questionnaire, into two groups. The first group consisted of those learners who were inter-personally dominant and the second group consisted of the learners who were intra-personally dominant. The division of these two types of dominant

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intelligences was for the purpose of the think aloud protocol which was going to be conducted in the last phase of the study.

In the third and the last phase of the study 6 EFL learners were chosen randomly in order to conduct a think aloud procedure. Three were chosen from the inter-personally dominant learners and three were selected form intra-personally dominant ones. These six EFL learners were interviewed in a single session. The six interviewees were given a standardized passage which had a reasonable readability based on Flesch reading ease test. They read the passage and guessed the meaning of the new words. After they answered all the questions regarding the new vocabularies, a retrospective think aloud procedure was conducted and they were asked to determine which strategy they had used in order to guess the meaning of the new words. The results of the interview were matched with those of the questionnaire in order to make sure that the answers provided by the learners were accurate enough. This phase of the study increased the validity of the questionnaire and the study itself.

6. Results and Discussion

Based on the purpose of the present study three research questions were posed:

1. What are the preferred vocabulary learning strategies used by the learners?
2. Which type of intelligence (interpersonal/intrapersonal) is dominant among EFL learners?
3. Is there a relationship between dominant intelligence and preferred vocabulary learning strategies?

In order to answer each one of these research questions a certain statistical procedure was used. In this chapter all these statistical procedures are elaborated and explained thoroughly.

In addition to the statistical procedure carried out for the purpose of present investigation, TAP procedure was also used as the last phase of the study in order to increase the validity of the obtained findings. All the statistical analyses along with TAP showed that the hypotheses formed based on the research questions were confirmed. In the next part a complete explanation and elaboration of the results of this study has been provided.

Analysis of the Results

To answer the first research question, a one-sample t-test on the relationship of the items in the questionnaires with different types of intelligence was performed. Then, the confidence interval for each statement are calculated. Those strategies that had minimum lower bound of 3 or higher in their confidence interval were chosen as the preferred vocabulary learning strategies among learners. It can be inferred from Table 2 that there are some specific strategies which have the lower bound confidence interval of more than 3. These strategies are distinguished in Table.

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Table: 2
Strategies with lower bound higher than 3.00

Strategy	Lower Bound of Confidence Interval
S19	3.11
S20	3.06
S21	3.64
S27	3.20
S31	3.10
S35	3.08
S38	3.08
S39	3.40
S48	3.06
S50	3.54

In order to answer the second research question, the mean score of the answers provided by learners in the questionnaire for both groups of the learner, namely, interpersonal and intra-personal intelligence group was calculated. The mean score for interpersonal statements was 2.810 and the mean score for intra-personal statements was 3.290 showing that the participants were intra-personally dominant.

Table: 3
Two-sample t-Test results

	Differences					t-Stat	Degree of Freedom	Significance (two-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Interpersonal - Intrapersonal	-.47967	.53617	.17872	-.89181	-.06754	-2.684	8	.028

The third research question concerned the existence of relationship between learners' dominant intelligence and the vocabulary learning strategies they have chosen as the preferred ones. For the purpose of answering this question, correlations between each statement related to the interpersonally dominant and intra personally dominant learners and the statements related to vocabulary learning strategies was calculated. The correlation between the statements in the questionnaires, which were related to interpersonal intelligence (i.e. statements 1 to 9), with

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certain vocabulary strategies was significant. The same was true for the correlation between statements 10 to 18, which were related to intra-personal intelligence, and vocabulary learning strategies they preferred to use.

Consequently, those vocabulary learning strategies which had higher correlation with the statements 1 to 9 (i.e. interpersonal intelligence statements) were considered as interpersonal vocabulary learning strategies and those vocabulary learning strategies which had higher correlation with the statements 10 to 18 (i.e. intrapersonal intelligence) were considered as intra-personal vocabulary learning strategies.

In order to shed more light on this matter, in this section the correlation between each statement in the questionnaire and the vocabulary learning strategies provided in this questionnaire are analyzed.

Statements 1-9 are related to interpersonal intelligence, as a result those vocabulary learning strategies that have high correlation with these statements are considered as interpersonal vocabulary learning strategies and consequently those that have negative correlation with each one of these statements are considered as intrapersonal.

Below the relationship between each one of the statements related to interpersonal intelligence and the vocabulary learning strategies with which they have significant relationship is provided and analyzed. If the significant is below 0.05 then it can be said that there exists a significant relationship between a statement and a specific vocabulary learning strategy. If the correlation between a certain interpersonal intelligence statement and a certain strategy is near to 1 and is positive, then it can be inferred that this vocabulary learning strategy is related to interpersonal intelligence. Consequently if the correlation is negative that specific strategy is considered as intrapersonal. In Table 3 the significance and the type of relationship between each one of the interpersonal intelligence statements and those vocabulary learning strategies with which each and every one of these statements have significant correlation are provided. Also the correlation between these statements and vocabulary learning strategies are determined and analyzed.

Think-Aloud Protocol (TAP)

A retrospective TAP procedure was conducted at the end of the study. 6 EFL learners were selected for the purpose of this stage. 3 of them were selected from those who were interpersonally dominant and 3 of them were chosen from those who were intra-personally dominant. Each one of these learners was interviewed individually and without the presence of other learners. The standardized text was given to each one of them. After they read, they were asked the meanings of some of the new and unseen words in the text. At last, they were asked how they guessed the meaning of the new words and how they had learned them before. The text which was used in the interview is provided below:

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"The Road is one of the great fundamental institutions of mankind. Not only is the Road one of the great human institutions because it is fundamental to social existence, but also because its varied effects appear in every department of the State. It is the Road, which determines the sites of many cities and the growth and nourishment of all. It is the Road, which controls the development of strategies and fixes the sites of battles. It is the Road that gives its framework to all economic development. It is the Road, which is the channel of all trade, and, what is more important, of all ideas. In its most humble function it is a necessary guide without which progress from place to place would be a ceaseless experiment; it is a sustenance without which organized society would be impossible, thus the Road moves and controls all history."

The meaning of some of the new vocabularies such as "fundamental", "nourishment", "humble", "ceaseless", "sustenance" and "impossible" were asked randomly from each one of the learners. In the answer to the question "How did you guess the meaning of these new words?", which was asked from each one of the learners, they provided different answers which were as follows:
Intrapersonal learner 1:
"I learn the new vocabularies from the movies I watch at home."
Intrapersonal learner 2:
"I thought the meaning I told you was good for this sentence."
Intrapersonal learner 3:
"I study some vocabulary books sometimes"
Interpersonal learner 1:
"I and my friends sometimes review words in groups."
Interpersonal learner 2:
"We talk about the movies that we watched at school. We can find new words from those movies."
Interpersonal learner 3:
"I like to talk to my friends and ask them the meaning of the words."
The strategies these learners provided in their interview was matched with the ones they had chosen in the questionnaire. The strategies that interpersonal and intrapersonal learners chose to guess and explain the meanings of the vocabularies were the same as the ones they had chosen in the questionnaire. This phase of the study increased the validity of the results.

There were three hypotheses formed based on the three research questions posed at the beginning of this study. In this section each one of these hypothesis will be elaborated.

First Research Question:
Research Question 1: What are the preferred vocabulary learning strategies used by the learners?
Based on the statistics and data analysis performed, those strategies that have the lower bound of more than 3 are considered as the strategies preferred by EFL learners. These strategies have

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been mostly used among learners, either interpersonal or intrapersonal. Based on the statistics it can be concluded that learners prefer some vocabulary learning strategies over others.
The preferred vocabulary learning strategies are as follows:

19. Paraphrasing: breaking the word into parts to understand the meaning
20. Learn from failure: after failure in answering the word in an exam you learn it afterwards
21. Guessing: guess the meaning form the context
27. Songs: learn vocabulary from songs
31. Internet: surf the net to learn new vocabularies
35. Sentence: use new words in sentence to get the meaning
38. Roots and affixes: memorize the root or the affixes used with the word to remember the meaning
39. Part of speech: memorize part of speech of a word to remember it better
48. Commercials: learn the new vocabularies form the ones written on commercial items
50. Video: learn vocabulary from movies

Two of the vocabulary learning strategies, namely vocabulary strategies number 39 and 50, have the highest lower bound confidence and as a result mostly used by EFL learners. Especially the strategy number 50 has the most use among learners.
Strategy 39 involves memorizing part of speech of a word in order to remember it better and easier. The lower bound confidence interval for this strategy is 3.40, which shows the preference of its usage among Iranian EFL learners.
Strategy 50 involves watching movies and videos in order to learn vocabularies easier. The lower bound confidence interval for this strategy is 3.54, which is the highest lower bound confidence interval, it shows that most of EFL learners prefer watching video in order to learn new vocabularies. Also in their interviews the learners mentioned that they have learned much of what they had already known through watching a number of native movies.

Second Research Question and Hypothesis:

Research Question 2: Which type of intelligence (interpersonal/intrapersonal) is dominant among EFL learners?
Hypothesis 2: There is a difference between interpersonal/intrapersonal intelligences in terms of their domination among EFL learners.
According to statistical analysis, the mean score for interpersonal intelligence was 2.810 and the mean score for intrapersonal intelligence was 3.290. The mean score of intrapersonal intelligence is higher compared to that of interpersonal intelligence, which means that intrapersonal intelligence is mostly dominant among Iranian EFL learners. Consequently, it is concluded that second hypothesis is also confirmed since there is a difference in the domination of the two intelligences among EFL learners.

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Third Research Question and Hypothesis:

Research Question 3: Is there a relationship between dominant intelligence and preferred vocabulary learning strategies?

Hypothesis 3: There is a relationship between dominant intelligence and preferred vocabulary learning strategies.

In order to answer the third research question, the correlation between each interpersonal intelligence and each vocabulary learning strategy was calculated and analyzed. If the correlation was positive that specific vocabulary learning strategy was considered as interpersonal and vice versa. The results showed that, most of the vocabulary learning strategies had negative significant correlation with interpersonal intelligence statements. This means that most of the vocabulary learning strategies except a few of them were intrapersonal. Since Iranian EFL learners mostly preferred intrapersonal intelligence over interpersonal intelligence, they also scored those intrapersonal vocabulary learning strategies higher compared to intrapersonal vocabulary learning strategies.

Conclusion

The quantitative results from the analysis of the questionnaire and also the qualitative results of TAP procedure showed that there was a strong and significant relationship between multiple intelligences, namely, interpersonal and intra-personal intelligences, and vocabulary learning strategies that EFL learners used in order to learn, guess and retain the meaning of the new vocabularies they encountered. Some vocabulary learning strategies were related to interpersonal intelligence and others were related to intrapersonal intelligence. The results showed that those EFL learners who were intra-personally dominant, used intrapersonal vocabulary learning strategies and those who were interpersonally dominant, used interpersonal vocabulary learning strategies. Consequently, it can be inferred that if EFL learners find out their dominant intelligence(s) they have the chance to choose the best vocabulary learning strategies based on their dominant intelligence. This will increase the rate of learning process and also help them retain the new vocabularies better and for a longer period.

Implications

The findings of this study aimed to help Iranian EFL learners. When the learners discover their dominant intelligence(s), they have the chance to choose the best vocabulary learning strategy based on their dominant intelligence(s). This will improve learning and retention of the new words. Based on the statistics, when the learners use their dominant intelligence(s) to learn or retain the meaning of the new words, the new vocabularies will be learned in the best way possible and also retained better.

Limitations

This study was conducted using 42 EFL learners chosen from one of the language institutes in Isfahan. The results might be limited to this group of learners only. Also there are intelligences other than interpersonal and intrapersonal introduced by Gardner (1983) such as bodily/kinesthetic, s136pacial, musical, mathematical, etc. which can be investigated.

Suggestions for Further Study

In this study only two of Gardner (1983) intelligences, namely, interpersonal and intra-personal were selected. In order to further the investigations regarding the concept of multiple intelligence and vocabulary learning strategies, it is advisable to conduct other researches on the relationship between other types of intelligences and vocabulary learning strategies.

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