International Journal of Applied Linguistics & English Literature
ISSN 2200-3592 (Print), ISSN 2200-3452 (Online)
Vol. 2 No. 2; March 2013

The Effect of Verbal Intelligence on Knowledge of Lexicon

Masoumeh Parsa
M.A. in TEFL Islamic Azad University- Tonekabon Branch, Iran
E-mail:ParsaParisa10@yahoo.com

Shahrokh Jahandar
Ph. D in TEFL, Islamic Azad University- Tonekabon Branch, Iran

Morteza Khodabandehlou
Ph. D in TEFL, Islamic Azad University- Tonekabon Branch, Iran

Received: 13-12- 2012 Accepted: 16-01- 2013 Published: 01-03- 2013
doi:10.7575/aiac.ijalel.v.2n.2p.114 URL: http://dx.doi.org/10.7575/aiac.ijalel.v.2n.2p.114

Abstract

The present study was conducted to investigate the effect of verbal intelligence on Iranian pre-intermediate students' knowledge of lexicon. The participants comprised of 30 male and 30 female learners. A vocabulary test was administered to find out students' vocabulary knowledge and also Wechsler intelligence test was administered for both groups of male and female to find out students' verbal intelligence, of course the verbal part of intelligence was needed due to the topic of study. Analysis of the result revealed that the participants who had higher verbal intelligence also had higher marks in vocabulary test and the participants who had lower verbal intelligence had a lower mark in vocabulary test.

Keywords: Multiple intelligences, VI (Linguistic Intelligence), Knowledge of lexicon

1. Introduction

In recent years, there has been a substantial amount of interest in individual differences among learners. They bring to the language learning situation a wide spectrum of individual differences that influence the learning rate and ultimate learning results. It is worth mentioning that intelligence is often thought to be one of the most significant predictors of language learning success GU (2003). Intelligence was traditionally defined and measured as Linguistic and Logical-Mathematical abilities. In addition, 'Gardner Ability' (g) is a general intelligence factor that governs performance on all cognitive tasks; Spearman (1927) called this a kind of 'mental energy' that underlined the specific factors and controlled performance on all mental tasks. It should be pointed out that a number of critics have challenged the relevance of psychometric intelligence in the concept of everyday life. They believe that IQ tests did not measure creativity, character, personality, or other important differences among individuals (Gottfredson, 1997). Dissatisfaction with traditional IQ test has led to the development of a number of alternative theories, all of which suggest that intelligence is the result of a number of independent abilities that individually contribute to human performance. Gardner (1983) introduced Multiple Intelligences(MI) theory in his book, *Frames of Mind,* in which he describes different forms of knowing, which provides a much more comprehensive picture of intelligence. Gardner's theory of Multiple Intelligences utilizes aspects of cognitive and developmental psychology, anthropology, and sociology to explain the human intellect. Gardner (1983, 81), defines intelligence as 'the ability to solve problems, or to create products, that are valued with one or more cultural settings'.

2. Statement of the problem

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.

In order to give some useful suggestions to policy makers, language- planners, curriculum designers, text book developers, language instructors, teachers as well as learners and their parents, many studies have been done in this field. There are a number of ways which policy makers, language- planners, curriculum designers, text book developers, language instructors, teachers as well as learners and their parents can use to examine the effect of VI on knowledge of lexicon.

3. Research questions

The purpose of the present study is to answer the following questions:

Q1: Does VI affect knowledge of lexicon in male EFL learners?

Q2: Does VI affect knowledge of lexicon in female EFL learners?

4. Research hypotheses

A hypothesis defines an expected relationship between variables (based on casual relationships in theoretical model), which can be empirically tested. The hypotheses in this research can be expressed as:

H0 (1): VI does not affect knowledge of lexicon in male EFL learners.

H0 (2): VI does not affect knowledge of lexicon in female EFL learners.

5. Rationale of the study

Some expect all EFL or ESL learners are the same in ability and learning, but actually each person is unique, each learner learns with different rates and strategies. Gardner (1993) claims that all human beings have multiple intelligences (MI), which are common among all people, but with different portions. Therefore, hoping to solve this problem, this study intends to show that learners come to class with different abilities; they are different and learn in different ways. The present study aims to investigate the effect of VI on knowledge of lexicon in male and female EFL learners. It should be indicated that the focus is on showing learners' differences in abilities. If a person is good at learning English it doesn't show he/ she is good at learning other things and it doesn't mean that person is not intelligent.

Specifically, the purpose of the present study is twofold:

1) To show learners who come to class with different abilities, they are not the same, we have different kinds of intelligences like: VI, Musical intelligence; … defined by Gardner and others.

2) To investigate the effect of VI on knowledge of lexicon in male/ female EFL learners. Policy makers, language-planners, curriculum designers, text book developers, language instructors, teachers as well as learners and their parents may be able to make use of the findings to improve their jobs and help their learners. Moreover families and language learners can get familiar with multiple intelligences; it can be a start to understand their strengths.

6. Definition of key terms

6.1 *Intelligence*

Gardner (1983) introduced Multiple Intelligences(MI) theory in his book, *Frames of Mind,* in which he describes different forms of knowing, which provides a much more comprehensive picture of intelligence. Gardner's theory of Multiple Intelligences utilizes aspects of cognitive and developmental psychology, anthropology, and sociology to explain the human intellect. Gardner (1983, 81) defines intelligence as 'the ability to solve problems, or to create products, that are valued with one or more cultural settings'.

Gardner (1993) developed a set of criteria to determine what set of skills make up an intelligence. Here are listed the key points:

1. Potential isolation as a brain function/ potential isolation by brain damage.

2. Existence of prodigies, savants, and other exceptional individuals.

3. An identifiable core operation or set of operations.

4. A distinctive developmental history, along with a definable set of expert ' end state' performances.

5. Support from experimental psychological tasks.

6. Support from psychometric findings.

7**.** Susceptibility to encoding in a symbol system.

6.2 *Linguistic Intelligence*

Gardner (1983) suggested that all individuals have personal intelligent profiles that consist of a combination of several different intelligence types, including linguistic. Gardner (1999) has described Linguistic Intelligence as sensitivity to spoken and written language and the ability to use language to accomplish goals, as well as, the ability to learn new language.

6.3 *Vocabulary*

1) Richards et al. (1992) has defined this term as a set of lexemes which includes single words, compound words and idioms.

2) Hornby et al. (1984) considered vocabulary as the total number of words which make up a language; and a range of words known to, or used by a person.

6.4*Word*

1) The smallest of the linguistic units which can occur on its own in speech or writing as defined by Richards et al. (1992).

2) A sound or combination of sounds forming a unit of the grammar or vocabulary of a Language indicated by Hornby et al.(1984).

6.5*Knowledge of Lexicon*

Variable for this research is vocabulary knowledge. Words are the basic building blocks of an utterance, units of meaning from which larger structures such as sentences, paragraphs, and whole texts are formed.(Rover 1991cited in

Nunan, 2001) considered knowing adequate vocabulary as the most important factor in communication and believed that one might not be able to use the structures learned for comprehensible communication without having a good command of vocabulary. According to Seal, cited in Celce-Marcia (1991, p.296), 'words are perceived as the building blocks upon which knowledge of the second language can be built'. There is a general agreement that vocabulary knowledge should be regarded as multi-dimensional construct, rather than a single dimensional one. They stated that vocabulary knowledge at least contains two dimensions, namely vocabulary breath, and depth of vocabulary knowledge. (Richards, 1976; Wesche and Paribakht , 1996; Henriksen, 1999; Qian, 1999).

6.6 *Depth of Vocabulary Knowledge*

Qian (1999) defines depth of vocabulary knowledge as a learner's knowledge of various aspects of a given word, including phonemic, graphic, graphemic, morphemic, or the derivation, and compounding of a word, syntactic, semantic, phraseological properties, and knowledge of collocation means the awareness of combination of special words together, and frequency which means how common the word is, and register as formal or colloquial word. The depth dimension is an aspect of word knowledge including spelling, pronunciation, meaning, frequency, register and morphological, syntactic and collocation properties.

6.7 *Breadth of Vocabulary Knowledge*

According to Qian (1999) Breadth of vocabulary knowledge is defined as vocabulary size, or the number of words for which a learner has at least some minimum knowledge of meaning. According to Nation (2001) quoted in Nassaji (2001) breadth of vocabulary knowledge has referred to the quantity or number of words learners know at a particular level of language proficiency.

7. Method

7.1 *Pilot study*

At first stage, a pilot study has been done in order to see whether there is such a correlation between VI and knowledge of lexicon. Therefore, 20 EFL learners were randomly selected from 4 different classes at the pre- intermediate levels from 2 institutes, 10 learners were male and 10 learners were female. The pilot study consisted of a test of 20 word order multiple choice questions to be answered by the participants. The reliability of the pilot study test was determined through calculating the Kurdar/Richardson-21 (R=0.7) and scoring through inter-rater reliability of three testing professors. The 20 participants were asked to participate in a paper and pencil test of vocabulary: each participant was asked to answer the questions in an answer sheet. The participants' answers were then scored by the researcher out of 20 (the criterion).

Then a modified multiple intelligences input, namely Wechsler was administered by a psychologist. The psychologist used verbal intelligence part which is related to this study. The reliability of Wechsler IQ test (r=0.8) was computed through Cronbach's Alpha.

The researcher used the results to see the correlation between VI test and knowledge of lexicon in both male and female participants. What the researcher found was that the participants who had a higher VI score, had a higher score in vocabulary test, and the participants who had a lower score in VI, had a lower score in vocabulary test too, so the result indicated that there was a positive correlation between VI and knowledge of lexicon .

7.2 *Design of the study*

The present study followed an experimental design. The rationale behind using such a design lied in the fact that there was no random selection of subjects throughout the institutes in the country, and the study was supposed to be conducted in two institutes, thus, the participants were from Kish language institutes. In this research, first of all a pilot study was carried out to determine and make sure of the correlation between VI and knowledge of lexicon. The second step was an attempt to homogenize the students. For this purpose, an OPT test was administrated to learners. The learners consisted of 120 male and female who were selected randomly from 2 institutes. The reliability of OPT test is evaluated through KR-21 and it is 0.7.

The OPT test included 60 multiple-choice items, each participant was asked to answer the questions in an answer sheet. Also there was an attempt to homogenize participants in VI, so a modified verbal intelligence test (Wechsler) with the reliability of 0.8 calculated through Cronbach's Alpha was administered by a psychologist. The reliability of verbal intelligence test was also confirmed by 3 professors. From this number of learners 60 learners were selected based on their proficiency. Then, a test concluding 20 questions of vocabulary was given to participants to examine knowledge of lexicon in participants, questions were similar to the test in the pilot study, but extracted from learners' books and final archives in institute to measure their knowledge of lexicon, the reliability of this test was determined through calculating KR-21(r=0.7) and scoring through inter rater reliability of three testing professors. After administrating the VI test and vocabulary test the results were saved to compare the correlation. The data from vocabulary tests were entered in SPSS software, they were divided in two: participants with higher vocabulary and participants with lower vocabulary scores both in male and female, then independent t-test was run for both male and female, finally the mean of two groups were compared by two- way ANOVA.

7.3 *Participants*

In the present study, a sample of 120 Pre-Intermediate level EFL learners, 60 male and 60 female from Kish English language institutes were selected randomly from different classes. The initial number of participants was then reduced

to 60 after the administration of OPT test to homogenize them. The participant's age ranged between 11 and 16. They were teenager learners studying English as a Foreign Language in the Language Institute in Rasht. The 60 participants were then divided into two groups of male and female.

7.4 *Material*

To conduct the present study, three instruments were employed.

They were as follows:

1. A proficiency test (OPT) with the reliability of 0.7 calculated through KR-21, it consisted of 60 questions.

2. A vocabulary test at the Pre-Intermediate level with the reliability of 0.7 calculated through KR-21, the vocabulary test concluded 20 questions.

3. A modified verbal intelligence test named Wechsler, for administration of this test a psychologist spent about 50 minutes to test each participant and then analyzed the results, the reliability= 0.8 of this test was calculated through Cronbach's Alpha.

7.5 *Procedure*

The OPT of the study administered for measuring the degree of the participants' proficiency was a paper-and-pencil test. Hence, the participants' had to answer the questions in specified answer sheets. The time allowed was 70 minutes as had been determined in the OPT. The VI was a modified test of verbal intelligence which was administered by a psychologist. The vocabulary test was a 20 word order multiple choice questions to be answered by participants in about 20 minutes.

7.6 *Scoring*

The OPT that was used in this study was scored on the basis of the standard criteria introduced by the test itself. The criterion for scoring the vocabulary test of the study was the maximum of 20.

7.7 *Data analysis*

The data gathered on variables were analyzed by the following methods through SPSS software.

- Descriptive statistics was used to determine the mean and standard deviation of each group on vocabulary test.
- Independent t-test was used to find the difference between the higher and lower participants in each group.
- Two-way ANOVA was used to compare the two mean scores of male and female groups on vocabulary test.

8. Results

Table (1) and (2) shows the results of Verbal intelligence test for participants from high to low.

Table (3) shows the descriptive analysis for the high and the low group of vocabulary test of males, as is indicated in table (3), the number of participants has been 15 in each experiment (N_{High} = 15; N_{Low}= 15), and there has been no missing value (Missing Value = 0.00) which means that all selected participants participated in the experiments of the study. The mean for the Low group vocabulary scores was shown to be 9.40 ($\overline{X}_{Low}$= 9.40) as compared to the mean for the High group vocabulary scores which was 13.33 ($\overline{X}_{High}$= 13.33). As for the standard deviations obtained for the low group, there seems to be more variability among the low group scores than the scores in the high group. This may give an image of the participants' scores in high group being more homogenous, so it shows the participants who had higher Verbal intelligence had higher vocabulary knowledge.

As is indicated in table (4), the number of participants has been 15 in each experiment (N_{High}= 15; N_{Low}= 15), and there has been no missing value (Missing Value = 0.00) which means that all selected participants participated in the experiments of the study. The mean for the Low group vocabulary scores was shown to be 10.60 ($\overline{X}_{Low}$= 10.60) as compared to the mean for the High group vocabulary scores which was 15.46 ($\overline{X}_{High}$= 15.46). As for the standard deviations obtained for the low group, there seems to be more variability among the low group scores than the scores in the high group. This may give an image of the participants' scores in high group being more homogenous, so it shows the participants who had higher Verbal intelligence had higher vocabulary knowledge.

Based on the information in table (5), the t-value of the study was calculated between the scores in the higher and the lower group of the males. The observed t value was 7.834(t_{obs}=7.834) and the degree of freedom was 28 (df =28). The level of significance was calculated as to be .000 (p =.000) which has been used in interpreting the data for the rejection or support of the first hypothesis of the study in the next section.

Based on the information in table (6), the t-value of the study was calculated between the scores in the higher and the lower group of the males. The observed t value was 8.236(t_{obs}=8.236) and the degree of freedom was 28 (df =28). The level of significance was calculated as to be .000 (p =.000) which has been used in interpreting the data for the rejection or support of the first hypothesis of the study in the next section.

Before analyzing the hypotheses of the study, for investigating main effects gender and group and the interaction effects of gender and group, two-way analysis of variance was used. The output of this test is presented below in table (8).

The First column of this table indicates the sources of change which are respectively, gender, group, gender*group, error and corrected total. Gender*group source is in fact the interaction effects of gender and group. The second column indicates the sum of squares for each of the sources. Third column refers to the degrees of freedom for each of the sources. The degrees of freedom for two sources of Gender and Group are 1 and the degree of freedom for

gender*group source is 1, too. The degrees of freedom are equal to the number of observations minus one. Thus, because the numbers of observations were 60, the degrees of freedom were 60 minus 1 or 59. The fourth column is mean square which refers to second column divided by third column. The column which is indicated by F refers to the statistical tests for each of the sources. The main column of the table is the last column which shows the statistical result of the study. According to Significance levels for gender and group that is lower than 0.05, the null hypothesis claiming no difference across gender was rejected. As indicated in table 6 (because α =.05), the critical value for all three *F*-tests is 4.49. Two Fs exceed this critical value, so we have evidence for a main effect of gender, a main effect of group, but the interaction of gender and group does not exist. In other words, both group and gender affect vocabulary performance. However, there is no interaction effect of group and gender on students' test performance. Each of them acts independently from the other one.

9. General Discussion

The findings of the current study indicated that considering VI can be useful in class. These findings seem to be compatible with the findings of the research study done by Pishghadam (2008) which verbal intelligence affect knowledge of lexicon in learners, and Mirzazadeh (2012) which worked on impact multiple intelligences in learning second language learning.

Traditionally, it was believed that the most important point regarding innate abilities or here better to say intelligent was that IQ as it was defined generally was something fixed (Goleman, 1995), believing that from birth up to the end of life that was unchangeable, and one couldn't increase his IQ, meaning that, instruction had no impact on its improvement. Therefore, if somebody possesses a low IQ and if we believe that IQ accounts for success in second language acquisition, in that case the person seems to have little chance for success in second language acquisition; it goes without saying that the idea will lead to determinism, if your IQ is low, you will never learn a second language easily and fast (Carroll, 1993).

The idea of determinism of intelligence which had been strengthened by the works of Galton (1962) and Binet (1905) were found to be wrong by the works of Vygotsky (1978), Feuerstein (1979), and Erikson, Krampe, and Tesch-Romer (1993).

Vygotsky's Zone of Proximal Development as it is defined by himself is: The distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (1978, p.86)

The idea implies that intelligence is not something fixed; it can be increased through the collaboration of novices with experts. Central to Feuerstein` s theory (1979) is the firm belief that anyone can become a fully effective learner. Another main component of his theory is the notion of "structural cognitive modifiability", which is the belief that people's cognitive structures are infinitely modifiable, i.e. no one ever achieves the full extent of their learning potential, but people can continue to develop their cognitive capacity throughout their live.

Ericson, Krampe, and Tesch- Romer (1993) believed in the role of deliberate Practice, claiming that one can obtain what he wants through deliberate practice. Since this practice is generally done from childhood, people mistakenly think that extraordinary capabilities of individuals are innate and fixed. Therefore, the pessimistic idea that intelligence is fixed and unchangeable has been replaced with optimistic idea of flexibility and modifiability of intelligence and it might be affected by instruction and practice (Pishghadam 2009).

10. Conclusion

This study investigated the effect of verbal intelligence on the knowledge of lexicon of two groups of Iranian pre-intermediate participants. Through the analysis of vocabulary test and verbal intelligence test, it was concluded that the participants who had higher verbal intelligence score also scored higher in vocabulary test and the participants who scored lower in verbal intelligence test had a lower score in vocabulary test.

The possibilities of MIT improving academic results in different disciplines such as foreign language teaching have been discussed in many forums. Beyond this, however, ideally learning in any classroom will involve personal development and growth in all human dimensions. We are all so different largely because we all have different combinations of intelligences. If we recognize this, we will have at least a better chance of dealing appropriately with many problems that we face in the world.

As Gardner (1999) has written: I would happily send my children to a school that takes differences among children seriously, that shares knowledge among differences with children and parents, that encourages children to assume responsibility for their own learning, and that presents materials in such a way that each child has the maximum opportunity to master those materials and to show others and themselves what they have learned and understood. (pp. 91–92).

Society is demanding citizens who have developed multilingual knowing-how-to-listen and how-to- talk abilities, who are capable of setting and achieving personal goals, who know how to search for information necessary to continue learning beyond the classroom, who know how to work cooperatively — in general, citizens who are efficient and who know how to solve multiple problems in any given context, and using MIT in the language classroom can help to promote these goals.

As the results demonstrated VI is of great importance in communicative classes. Working on verbal/ speaking factors is not something novel. A number of methodologies have existed which specifically address verbal/ speaking issues in

second language learning (e.g.,: CLT). The problem with most of theories in second language learning dealing with verbal intelligence issues is that they don't pay attention to different aspects of Verbal intelligence in classes.

11. Implications of the Study

- First, the findings of the current study indicated that using Multiple intelligences and here VI (verbal intelligence) in teaching, it could be any aspects of teaching: vocabulary, grammar; … could result in a better performance of language learners.
- Second, in the second/ foreign language classroom it is possible to motivate learners by different activities relating to the different intelligences. Providing a variety of language activities that stimulate different intelligences proposed by Gardner (1999) makes multiple memory pathways to produce sustained deep learning (Schumann 1997).
- Third, since vocabulary is a very important part of the language, a teacher must know his/ her students' strengths and weaknesses and try to use different techniques to enhance them.
- Fourth, the findings of this study could help those dealing with foreign language teaching, such as syllabus designers, material developers, test makers, and the like.
- Fifth, also the findings of this study might be applicable to the learning of all language skills and sub-skills such as listening, pronunciation, grammar and so on.

12. Limitation of Study

- First this study examined the effect of VI on knowledge of lexicon in male/ female EFL learners, but not the other skills like grammar.
- Second the sample was selected from two institutes, not all EFL learners.
- Third Assessment was limited to multiple choice tests while different means of measurement may be important factors affecting result.

13. Suggestions for Further Research

Some ideas may be helpful for the improvement of the issue as future attempts in using multiple intelligences in teaching English. The fact is that research in general and research in language vocabulary are not limited fields. There are numerous topics to be worked on at least in terms of the variables discussed in this thesis.

- The first point to consider is the issue of population of the study. It seems possible to go beyond the sample-population limitations of the study and to elicit information from a larger population. This was not practical in this research since there was the problem of distance: it was not practical to have samples from all parts within the short period of the time allocated to writing this work; however, this is possible and the future researchers are advised to take the time and replicate the study from this point of view.
- As the second point, this study was conducted in an EFL situation, another research with the same format and design can be done in an ESL situation to compare the results and to see whether VI has different effects in different contexts.
- Third another study is required to examine the role of VI in language testing, specially the relationship between VI and different test forms.
- Forth students at other levels of language proficiency, i.e. intermediate or advanced, can be subjects for another experiment.
- As the last point in this study ethnic bias was not taken into consideration so in future researchers are advised to take this point in consideration.

References

Binet, Alfred. (1905). *L'Annee Psychologique, 12,*191-244 Celce-Murcia, M. (1991). Teaching English as a second or foreign language. Boston: Heinle & Heinle.

Ericson, K., Krampe, R. & Tesch- Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. Psychol. Rev. 100, 363-406.

Feuerstein, R. (1979). The dynamic assessment of retarded performers: The learning Potential Assessment Device theory, instruments, and techniques. Baltimore: University Park Press.

Galton F. Hereditary genius: An inquiry into its laws and consequences. London, McMillan/Fontana. 1869/1962.

Gardner, H. (1981). Frames of mind. The theory of multiple intelligences. New York. Basic Books.

Gardner, Howard. (1983) "Frames of Mind: The Theory of Multiple Intelligences." New York Basic books.

Gardner, H. (1993). Frames of the mind: The theory of multiple intelligences 10th Anniversary Edition. New York: Basic Books.

Gardner, H. (1999). Intelligence reframed multiple intelligences for the 21st century New York: Basic Books.

Goleman, D. (1995). Emotional intelligence. London: Blumsbury.

Gottfredson, L. S. (1997). Mainstream Science on Intelligence. An editorial with 52 signatories, history, and bibliography: Intelligence, 24, 13-23.

Gu, Y. (2003) Vocabulary Learning in a School Language. TESL-EJ, 7, 1-26.

Henrikson, B. (1999). Three Dimensions of Vocabulary Development. SSLA, 21: 303-317.

Hornby, A.S., Cowie, A.P., and Gimson, A.C. (1984). Oxford advanced dictionary of current English. Oxford: Oxford University Press.

Masoumeh Mirzazadeh (2010)Impacts of Multiple Intelligences on Learning English in the ESL Classroom American Journal of Scientific Research ISSN 1450-223X Issue 60 (2012), pp. 64-74 © EuroJournals Publishing, Inc. 2012 http://www.eurojournals.com/ajsr.htm

Nassaji, H. (2001). L2 Vocabulary Learning from Context: Strategies, Knowledge Sources, and their Relationship with Success in Second Lexical Inferencing. TESOL Quarterly, 37(4), 645-670.

Nation, P. (2001). Learning vocabulary in another language. Cambridge: Cambridge University Press.

Nunan, D. (1991). Second language teaching and learning. New York: Heinle & Heinle.

Paribakht, T.S & Wesche, M. (1997). 'Vocabulary enhancement activities and reading for meaning in second language vocabulary acquisition.' In J. Coady, and T. Huckin, (Eds.), Second Language Vocabulary Acquisition 174-200. Cambridge University Press, Cambridge.

Pishghsdam, R., and Ghonsooly, B (2008). On the role of emotional and verbal intelligence in second language learning success. Pazhuheshe zabanhaye khareji, 43, 47-59.

Qian, D. D. (1999). Assessing the roles of depth and breadth of vocabulary knowledge in reading comprehension. Canadian Modern Language Review, 56 , 2, 282-307.

Richards, J. C. (1976). Series editor's preface. In N. Schmitt, Vocabulary in language teaching (pp. xi-xii). Cambridge: Cambridge University Press.

Richards, J. C., Platt, J., and Platt, H. (1992). Language teaching and applied linguistics (2nd ed.). Essex: Longman.

Spearman, C. (1927). The Abilities of Man: Their Nature and Measurement. New York: Macmillan.

Schumann, J. (1997). The neurobiology of affect in language. Boston: Blackwell.

Appendix

Table 1. Verbal scores for male participants

Participants	Total number	VI Scores	F
Male	30	88	2
		87	4
		85	1
		84	3
		83	1
		81	1
		80	2
		73	2
		71	2
		66	2
		64	2
		63	1
		62	1
		60	1
		59	1
		57	2
		57	2

Table 2. Verbal scores for female participants

Participants	Total number	VI Scores	F
Female	30	93	1
		91	1
		90	2
		89	1
		88	2
		87	3
		81	4
		77	1
		76	4
		75	1
		72	4
		67	2
		63	11
		56	2

Table 3. Descriptive analysis of the data of the High- Low male Vocabulary Test of the study

Tests	N	Mean	Std. Deviation	Std.Error Mean	Missing Value
High(1)	15	13.3333	1.34519	.34733	0.00
Low(2)	15	9.4000	1.40408	.36253	0.00
Total	30				

Table 4. Descriptive analysis of the data of the High- Low female Vocabulary Test of the study

Tests	N	Mean	Std. Deviation	Std.Error Mean	Missing Value
High(1)	15	15.4667	1.64172	.42389	0.00
Low(2)	15	10.6000	1.59463	.41173	0.00
Total	30				

Table 5. The T-test results of the study for males

T-Test Results	Observed t	df	Sig. (2-tailed)
Between the Higher Group Scores and Lower Group Scores of Males (Equal variances assumed)	7.834	28	.000

Table 6. The T-test results of the study for females

T-Test Results	Observed t	df	Sig. (2-tailed)
Between the Higher Group Scores and Lower Group Scores of Females (Equal variances assumed)	8.236	28	.000

Table 7. Between-Subjects Factors

	Value Label	N
Group	1.00 High	30
	2.00 Low	30
Gender	1.00 Male	30
	2.00 Female	30

Table 8. Tests of between-subjects effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	335.333a	3	111.778	49.547	.000
Intercept	8930.400	1	8930.400	3960.684	.000
Gender	41.667	1	41.667	18.479	.000
Group	290.400	1	290.400	128.794	.000
Gender * Group	3.267	1	3.267	1.449	.234
Error	126.267	56	2.255		
Total	9392.000	60			
Corrected Total	461.600	59			

*R Squared= .726 (Adjusted R Square)= .712