

Gardner's Multiple Intelligence Theory and Foreign Language Achievement

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Abstract: *The aim of the present study was to find if there were any significant differences between Iranian EFL learners of high and low proficiency with regard to their multiple intelligence abilities. To reach to this aim, 106 subjects participated in the study and the researcher made use of: 1) the Persian version of Mckenzie's multiple intelligence (MI) Inventory; and 2) the learners' final term grades as the measure of their language learning achievement. Analyzing the data employing some independent -samples t-tests, it was found that there was a statistically significant difference [$t(104) = 2.100$, p (two-tailed) = .038] in the mean of verbal intelligence scores of the low and high achieving groups, which was larger among the high achievers. As such, it can be concluded that that more proficient EFL learners have a higher verbal intelligence, indicating that more successful learners may be more intelligent 'verbally' than their less proficient counterparts. Finally, verbal and visual intelligences—with the highest mean scores— were the two mostly used types of intelligences by both high and low achieving groups.*

Keywords: *MI theory, Language Learning Achievement, Multiple intelligence abilities*

1. Introduction

The way languages are learned and taught have always been an issue of interest to researchers for decades; starting from the grammar-translation method in the 1800's on, there has been a great interest in understanding and implementing language learning and teaching (Richards & Rogers, 2001; Stern, 1983). Also, the notion of language learning and teaching has changed tremendously over the past few decades as a result of the findings from studies conducted on language teaching methods, learning theories, second/foreign language learning research, and individual learning differences.

Especially the decades after the second half of the 20th century have experienced a great number of studies highlighting individual learner differences and how these differences have affected language learning and teaching. Some of those cognitive differences and/or variables are multiple Intelligences (MI) and representational systems of Neuro linguistic programming (NLP).

General intelligence 'g' or general factor which was previously supposed to be fixed at birth was known for years as "IQ" or Intelligence Quotient classifying people as those having a high or

low IQ in terms of their performance and scores on IQ tests. Therefore, in this view, the individuals' intellectual abilities were measured through their verbal-linguistic and logical-mathematical intelligences in a sense that maximal value was put on verbal-linguistic and logical-mathematical intelligences while other types of intelligences were ignored. Simply put, earlier models of intelligence put too much emphasis on logic and language while other abilities were dramatically ignored.

Gardner's (1983) different view towards the definition and dimensions of intelligence challenged the idea that intelligence could be objectively measured and restricted to a single number or "IQ" score; Gardner (1983) implied that the single IQ test score ignores other types of intelligences. Thus, from Gardner's point of view, intelligence is a capacity which cannot be measured through traditional, classical IQ tests.

Accordingly, The theory of multiple intelligences postulated by Howard Gardner (1983) is a model of intelligence that classifies human's intelligences into specific modalities; the different intelligences are understood as personal tools and a person may be more talented in some intelligences than in others (Mirzazadeh, 2012). As such, through the MI theory, Gardner (1983) posits that every individual favors varying levels of intelligence and thus has an exclusive, unique cognitive profile; his theory defines intelligence as "the capacity to solve problems or to fashion products that are valued in one or more cultural setting" (Gardner & Hatch, 1989).

Further, Gardner (1983) proposes that the intelligence groups— initially seven, however, later eight and then nine intelligences with the addition of naturalistic intelligence— are quite independent of each other. Also, all humans favor at least eight [nine] intelligences though not to the same degree and intelligences can develop and interacts with the others in all forms of learning and life.

Furthermore, Gardner (1993) posits that intelligences can be educated or improved via schooling and they also need to be developed by appropriate encouragement, reinforcement and instruction. So, the nine intelligence groups are: Verbal/linguistic (sensitivity to the meaning and syntax), logical-mathematical (ability to reason and recognize patterns and order), visual/spatial (ability to perceive the world accurately), bodily kinesthetic (ability to use the body skillfully), musical (sensitivity to pitch, melody, rhythm, stress and tone), interpersonal (the ability to understand people and relationships), intrapersonal (having a skill of knowing *self* and developing it), naturalist (skill and interest in the environment and nature), and existential (capacity to deal with deep questions, questions about the existence of human beings) which are explained more broadly below.

Verbal-linguistic Intelligence: This intelligence is defined by Gardner (1993) as sensitivity to the spoken and written language and using the language to achieve goals. Gardner (1993) and Chapman and Freeman (1996) also claim that the people who are strong in verbal-linguistic

intelligence usually have a good vocabulary potential which allows them to read books and to be absorbed in the books and perform well in English classes.

Logical-Mathematical Intelligence: According to Gardner (1983), the people with strong logical-mathematical abilities have a keen sense about objects and order. Armstrong (2003) says this intelligence is “the understanding and use of logical structures, including patterns and relationships and statements and propositions, through

experimentation, quantification, conceptualization and classification” (2003).

Visual-Spatial Intelligence: McKenzie (2009) defines visual- spatial intelligence as the ability to learn visually and organize ideas spatially. For example, see concepts in action in order to understand them and also the ability to “see” things in one’s mind in planning to create a product or solve a problem. Therefore, those with a high level of this intelligence have the ability to use shapes, colors, graphics and space and use their mental imagery in order to discern the space orientation.

Musical-Rhythmic Intelligence: This intelligence is considered by Lazear (2004) as the knowing which occurs through hearing, sound, vibrational patterns, rhythm and tonal patterns, including the full range of potential sounds produced with the vocal chords. And the mode or tools to utilize this intelligence are through singing, musical instruments, environmental sounds, tonal associations and the rhythmic possibilities of life.

Bodily-Kinesthetic Intelligence: The people with such talent are sensitive to time and are skillful at using the whole body movement in a coordinated way and also good at manipulating objects by using their hands. Such people have control of the motions of their body and are able to handle objects in skillful ways. McKenzie (2009) says this intelligence allows us to learn through interaction with one’s environment and he states that it is not the realm of “overly active” learners and it promotes understanding through concrete experience.

Interpersonal Intelligence: Armstrong (2003) considers this as the ability to notice and make distinctions among other individuals with respect to moods, temperaments, motivations, intentions and to use this information in pragmatic ways, such as to persuade, influence, manipulate, mediate, or counsel individuals or groups of individuals toward some purpose. It is also worthy to mention that this intelligence will result in cooperative collaboration and working with others.

Intrapersonal Intelligence: Such ability empowers the individuals to understand their feelings, panics and motives and is chiefly based on the individual’s examination and knowledge of their own feelings. Weber (2005) says this intelligence includes accurate self knowledge, access to one’s feelings and the ability to discriminate among them and the ability to draw on one’s feelings to direct behavior.

Naturalist Intelligence: McKenzie says that this intelligence enables one to select subtle differences in meaning. Armstrong (2003) defines this intelligence as “the capacity to recognize and classify the numerous species of flora and fauna in one’s environment and the ability to care for, tame, or interact subtly with living creatures, or with whole ecosystems” (2003). Having such intelligence indicates our talent to differentiate among the living things (plants, animals, etc.) and also our sensitivity to the other features of the world like configuring the clouds and the rocks.

Existential Intelligence: By having such a talent which is the capacity to deal with deep questions, questions about the existence of human beings will come to mind like seeking the meaning of life, the reason of death and our role in the world (McKenzie, 2005). McKenzie (2009) states that this intelligence allows us to see the “big picture”: “Why are we here?” “What is my role in the world?” “What is my place in my family, school and community?”

For Gardner (1983), as opposed to the classical IQ tests results, all human beings have at least eight intelligences though not all of them to the same degree; and intelligences can develop. Besides, intelligence interacts with the others in all forms of learning and life.

Reading is a cognitive interactive activity processed in the brain, like the processes that the brain employs in mental/intellectual activities (e.g. paying attention to something, forgetting an important call, reminding someone’s name, etc). It is a dynamic process that needs active, meaningful interaction between the author and the reader or better to say the printed text and the reader. In other words, reading is a dynamic process of constructing and /or reconstructing meaning from written text in relation to the experiences and prior knowledge of the reader. In addition, during reading process, readers permanently form hypotheses, test predictions and use their prior knowledge of vocabulary and language to construct meaning from the text (Carrell, 1989). In spite of varied and numerous and to some extent challenging ideas concerning the definition of reading,

There has been a general consensus of opinions with regard to the definition that views reading comprehension as the process of unlocking meaning from connected text. As such, it seems logical to highlight the primary role of cognition and cognitive variables (e.g. intelligence) in learners’ abilities and/or disabilities in reading comprehension process. In the mean time, we propose that the ability of ‘good readers’ to employ the appropriate cognitive and meta-cognitive reading strategies in the process of comprehending and/or decoding the printed text heavily depends on the readers’ intellectual and cognitive priorities.

However, educators and scholars should consider –alongside the intellectual, cognitive factors– the impact of affective variables (e.g. learning styles/strategies, personality traits, reading strategies) on students’ language learning outcomes in general and reading comprehension success or failure in specific.

Thus, with regard to Gardner's (1983) MI theory, in order to answer the pedagogical, educational goals of learners, we need to consider the following points: 1) individual learners employ varied strategies to process information and to solve problems based on the type and level of their intelligence abilities and/or capabilities. 2) in order to supply appropriate learning experience for learners, instructors ought to know and measure their learners' intellectual capabilities (i.e. talent) properly, and then help them to know how to use the maximum capacity of their intelligence in a way that directs them towards their educational goals (Gardner, 2004).

Among the studies conducted on the association between multiple intelligence predictors and learning outcomes, few studies have exclusively focused reading comprehension performance of EFL learners at the institute level with learners from different educational background.

Kok (2013) in a study on the correlation between learners' Listening comprehension performance and their Multiple Intelligence groups found no statistically significant difference between the experimental and control group students with regard to their multiple intelligence groups. Moreover, the results on the above mentioned area are rather inconsistent.

As an example, Adrian and Shagabutdinova (2012) asserted that logical, verbal, and spatial intelligences were the dominant predictors of multiple intelligences among 230 Russian college students; Whereas, Adrian et al. (2005) on a study on 258 Polish students found mathematical, interpersonal, and verbal intelligences as the best predictors of the overall multiple intelligence. Similarly, Piaw and Don (2013) set out a study to find out the predictors of multiple intelligence abilities for Malaysian school leaders. The results of the research showed that interpersonal and intrapersonal intelligences were the two best predictors of overall multiple intelligence abilities. Accordingly, the results of the research regarding the predictors of multiple intelligence abilities are inconclusive and to some extent controversial in a sense that different researchers reports different findings. Also, as the current literature shows, few studies have exclusively focused on exploring the impact of different intelligence abilities on the performance of private institute EFL learners. Accordingly, it seems that there is still a need to conduct more studies in the above mentioned area to get more consistent and conclusive results.

1.1 The aims of the study

The purposes of the present study are twofold: 1) to determine the differences between Iranian EFL high/low achieving learners in terms of their self-reported multiple intelligence abilities 2) to show the dominant reported intelligence abilities of high/low reading proficiency groups.

As such, based on the above mentioned aims of the current research the following research questions are proposed:

1.2 Research questions

1. Are there any significant differences between Iranian EFL learners of high and low proficiency with regard to their multiple intelligence abilities?
2. What are the dominant intelligence abilities that the high and low achieving learners mostly use?

2. Methodology

2.1 Research design

This research employed a descriptive, ex post facto design to address the research questions of the current study.

2.2 Subjects

One hundred and... EFL learners of a private English institute named Zaban Saraa in sirjan (Iran) participated in the current research. All the subjects were female English language learners and chosen randomly through clustered random sampling design among the upper-intermediate to advanced level students. Further, the native language of all the participants is Persian. Moreover, all the subjects had already studied English as a foreign language in Iran's EFL context at least for 6 years (learning English as a foreign language is included compulsorily among the Iranian national educational syllabus from junior high school to the end of senior high school).

2.3 Instruments

3.1 The Persian version of McKenzie's (1999) MI Inventory. This questionnaire includes 90 Likert-type statements arranged to assess the nine intelligence abilities of the respondents; the indicators of the nine intelligences were proposed by Gardner's (1983) MI theory.

2.4 A demographic questionnaire and learners' final term grades

Foreign language achievement was measured using students' average of reported final term grades. Further, final term grades were calculated on a scale of 100, and can take one of four categorical values: below 75 (fail), 75 to 85 (pass), 86 to 96 (pass with distinction), and 97 to 100 (pass with merit).

More, Institute teachers all determine final term numeric grades by averaging scores from items such as exams (comprised of grammar items, writing section, vocabulary and listening comprehension), mid-term quizzes, oral interviews, homework, compositions, and class participation. Although some aspects of these scores seem more subjective than others (i.e. class participation grade), grades attained in this way provide a realistic measure of institute-level foreign language attainment.

3. Results

In this part, the results of the study are presented. The descriptive analysis of the subjects' language performance scores (based on participants' final term grades) are shown in table 4.1.

Table 4.1. Descriptive Statistics of the participants' language performance scores

	N	Minimum	Maximum	Mean	Std. Deviation
Performance	106	73.00	99.00	84.6792	6.89796
Valid N (listwise)	106				

As presented in the above table, the subjects of the study were 106 EFL learners at a private language institute named Zaban Saraa in Sirjan, Iran. The minimum and maximum scores are 73 and 99 respectively. Further, the overall mean score is 84.67 with the standard deviation of 6.89. Moreover, the subjects of the present research were divided into two groups namely high achievers (group 1) and low achievers (group 2) based on the overall mean score 84.67. Table 4.2 presents the descriptive statistics of the above mentioned groups.

Table 4.2. Group Statistics

Group	N	Mean	Std. Deviation	Std. Error Mean
Performance High achievers	54	90.5000	3.66266	.49843
Low achievers	52	78.6346	3.30050	.45770

As the data in Table 4.2 shows, out of 106 participants, 54 language learners (with the standard deviation of 3.66) belong to high achieving group and 52 ones (with the standard deviation of 3.30) belong to low achieving group.

Table 4.3 Independent- Samples T-Tests for the Multiple Intelligences & Language Proficiency

Variables	Group	N	Mean	Std. Deviation	t	Sig (2-tailed)
Grade	High achievers	54	90.5000	3.66266	17.50	.000
	Low achievers	52	78.6346	3.30050		
Naturalistic intelligence	High achievers	54	71.11	18.497	1.553	.123
	Low achievers	52	65.77	16.844		
Musical intelligence	High achievers	54	76.67	15.419	1.219	.226
	Low achievers	52	72.50	19.591		
Logical intelligence	High achievers	54	67.04	17.335	1.374	.172
	Low achievers	52	62.31	18.108		
Existential intelligence	High achievers	54	76.30	17.079	1.523	.131
	Low achievers	52	71.15	17.674		
Interpersonal intelligence	High achievers	54	60.56	15.712	1.051	.296
	Low achievers	52	57.31	16.102		
Kinesthetic intelligence	High achievers	54	74.81	17.128	.601	.549
	Low achievers	52	72.88	15.884		
Verbal intelligence	High achievers	54	71.11	16.330	2.100	.038
	Low achievers	52	63.85	19.215		
Intrapersonal intelligence	High achievers	54	82.96	14.618	-.796-	.428
	Low achievers	52	85.00	11.462		

Visual intelligence	High achievers	54	77.41	16.844	.755	.452
	Low achievers	52	75.19	13.059		
Total intelligence	High achievers	54	658.5185	89.78817	1.947	.054
	Low achievers	52	625.3846	85.20935		

Note: N=106; $p < .05$

Several independent- samples t-Tests were conducted to explore the possible significant differences between the mean scores of high achieving and low achieving groups with regard to the type of multiple intelligence abilities. Pallant (2005) asserts that ‘an independent-samples t-test is used when you want to compare the mean score, on some continuous variables, for two different groups of subjects’ (p. 205). With regard to the data presented in table 4.3, we can conclude that there is a statistically significant difference [$t(104) = 2.100$, p (two-tailed) = .038] in the mean verbal intelligence scores between the low achieving and high achieving groups. With respect to the other eight intelligence abilities and the total intelligences, there are no significant differences in the mean scores of other eight intelligences between high achieving and low achieving groups.

Further, intrapersonal intelligence has the highest mean scores both in high achieving group ($M=82.96$) and low achieving group ($M=85$). Moreover, visual intelligence ability, in both groups, has the second highest means (i.e. the mean score of 77.41 for high achieving and the mean score of 75.19 for low achieving group). Accordingly, verbal and visual intelligences are those ones that EFL learners mostly use in the process of second/foreign language learning.

4. Discussion and Conclusion

The current research aimed at exploring the significant differences between the high and low achieving groups of the study in terms of the nine types of intelligence abilities.

Several independent-samples t-tests were conducted and the results showed that there is a statistically significant difference between the EFL learners of high and low achieving groups in terms of their verbal intelligence abilities.

It is to be highlighted that the mean verbal intelligence score for high achievers ($M=71.11$) was larger than the mean score for low achievers ($M=63.85$); this result indicates that more proficient EFL learners have a higher verbal intelligence, indicating that more successful learners may be more intelligent ‘verbally’ than their less proficient counterparts. The finding of

the study confirms Gardners' (1983) description of those people who use their verbal intelligence as having sensitivity to spoken and written language and the ability to use language to accomplish goals, as well as the ability to learn new languages better. Moreover, learners who benefit their verbal intelligence may learn best through hearing and seeing words, speaking, reading, writing, discussing and debating. To sum up, the finding of the present study reveals that although all learners make use of all the nine intelligence abilities, more proficient learners are able to use their verbal intelligence better, and they are stronger in this type of intelligence.

Further research would be necessary to be conducted with a much larger sample in order to confirm findings of this study.

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