THE RELATIONSHIP BETWEEN IRANIAN EFL LEARNERS' MULTIPLE INTELLIGENCE AND SUCCESS IN FOREIGN LANGUAGE LEARNING

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ABSTRACT

This study investigated the relationship between students' gender and intelligence types, the relationship between particular intelligence types and students' success in grammar, and writing in English as a foreign language. 140 students from Islamic Azad University, Tonekabon ranch, Iran, participated in the study, and they were selected randomly. They were all asked to fill the Multiple Intelligences Inventory for Adults. . Descriptive statistics, independent samples t-test analysis, correlation analysis and one-way analysis of variance (ANOVA) were used to analyze the data. Results revealed differences between gender and the intelligence types of the participants were not statistically significance except the difference between gender and linguistic intelligence which was positive. The relationships between successes in students' test scores in grammar and bodily-kinesthetic, spatial, and intrapersonal intelligences were negative but statistically significance whereas the relationship between musical intelligence and writing was significant and positive.

Keywords: gender, intelligence, multiple intelligence, EFL

INTRODUCTION

Theoretical Framework

Multiple Intelligence

Intelligence is "the ability to solve problems or fashion products that are valued in one or more cultural settings," defined by Gardner (1993, p.87). Gardner believed that we all have different combinations of intelligences which work together and make individuals different. But Gardner mentioned that our schools and culture focus most attention on linguistic and logical-mathematical intelligences and ignore other intelligences. He claimed that we should also place equal attention on those who show gifts in the other intelligences to enrich the world we live. So, Gardner created his theory of Multiple Intelligences (MI) in 1983. Initially Gardner identified 7 relatively autonomous capacities, namely, linguistic intelligence, logical-mathematical intelligence, spatial intelligence, musical intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, and intrapersonal intelligence. Later, he added an eighth intelligence (naturalist intelligence), and worked for a possible ninth intelligence (existential intelligence) (Gardner, 2003).

MIT is proposed and put into practice in a way to call for an alternative classroom design to traditional classroom setting. It has been embraced by the teachers in need of an educational program which addresses a variety of ways people learn (Shore, 2004). In order to explain why

MI is an effective way of teaching and why it can overcome some of our problems in education, Moran, Kornhaber and Gardner (2006: 23) give the following example;

Think of LEGO building blocks. If we have only one kind of block to play with, we can build only a limited range of structures. If we have a number of different block shapes that can interconnect to create a variety of patterns and structures, we can accomplish more nuanced and complex designs. The eight or nine intelligences work the same way.

In support of the quotation above, Nolen (2003: 119) suggests that the presentation of foreign language teaching material should engage all or most of the intelligences due to the fact that each of the intelligences is potentially available in every learner. Hence, employing MI does not necessarily mean designing a lesson in nine different ways so that all students can access classroom materials prepared separately for each and all of the intelligence types. Instead, materials should allow students with different intelligence types to interact with each other and to develop the intelligences in which they are less strong (Moran, Kornhaber & Gardner, 2006; Heacox, 2002).

A brief explanation of each type of intelligence is presented below:

i. Logical/Mathematical Intelligence: The capability to use numbers effectively and reason well. Sample skills understand the basic properties of numbers, the principles of cause and effect, and the ability to predict.

ii. Verbal/Linguistic Intelligence: The ability to use words effectively, both orally and in writing. Sample skills are remembering information, convincing others to help, and talking about language itself.

iii. Visual/Spatial Intelligence: The ability to sense form, space, color, line, and shape. Sample skills include the ability to represent visual or spatial ideas graphically.

iv. Bodily/Kinesthetic Intelligence: The ability to use the body to express ideas and feelings, and to solve problems. Sample skills are coordination, flexibility, speed, and balance.

v. Musical/Rhythmic Intelligence: The ability to sense rhythm, pitch, and melody. Sample skills are recognizing simple songs and being able to vary speed, tempo, and rhythm in simple melodies.

vi. Interpersonal Intelligence: The ability to understand another person's moods, feelings, motivations, and intentions. Sample skills are responding effectively to other people, problem solving, and resolving conflict.

vii. Intrapersonal Intelligence: The ability to understand yourself, your strengths, weakness, moods, desires, and intentions. Sample skills are understanding how one is similar to or different from others, reminding oneself to do something, knowing about oneself as a language learner, and knowing how to handle ones' feelings.

viii. Naturalist Intelligence: The ability to recognize species of plants or animals in one's environment.

ix. Existential Intelligence: The ability of macro-viewing and understanding in a large context. This type of intelligence seeks connecting to real world understandings and applications of new learning.

Poole's (2000: 532) clear description of an MI classroom seems to be helpful in understanding the potential of the theory in practice. In an integrated and cooperative MI classroom, the teacher

employs non-traditional approaches to construction of meaning through a flexible but careful planning. The small social groups and learner-centered activities enable the students to share information and get a better understanding of what is learnt. In such a relaxed and non-threatening learning environment that is characterized by contextual clues, learners receive comprehensible input by working collaboratively. These characteristics of an MI classroom, as described by Poole, lead the researcher to the conclusion that MIT is inclusive of many familiar approaches such as whole language, cooperative learning, and other appropriate pedagogies that take children beyond the limits of rote learning (2000: 540).

Classroom research has reported that MIT is a promising theoretical construct which can foster students' learning. Haley's (2004: 171) research on the ways teachers apply MIT in foreign and second language classrooms showed that students in experimental groups outperformed those in control groups while developing a high degree of satisfaction and positive attitude toward the content. Emig (1997: 50) associates MIT with "magic" since it is highly advantageous for both students and teachers because students feel more competent and confident in an MI-based classroom. Similarly, in agreement with Emig (1997), Haley (2004), Hamurlu (2007) found that MIT-based instruction increased students' achievement in English classes and had positive effect on students' attitudes towards English.

STATEMENT OF THE PROBLEM

Assessment and evaluation of the instruments designed specifically for intelligence types have also drawn attention. With such an aim, McMahon and Rose (2004) evaluated the reliability of the Teele's (2000) Inventory of Multiple Intelligences (TIMI) and investigated the relationship between intellectual preferences and reading achievement. Their results revealed that the instrument does not provide consistent measurement and needs further development and refinement (2004: 48) although relationship was found between reading comprehension and logical-mathematical intelligence. Research has also shed light on the effect of MI activities on a diverse group of students' learning of another language. Noble (2004: 205) claimed that one of the greatest challenges for teachers today is to provide curriculum which effectively caters to the needs of diverse groups students and "…the MI framework was providing more options for children who were not academically or linguistically strong in English to demonstrate their knowledge." Shearer (2004) investigated three interrelated propositions about a reliable and valid assessment for multiple intelligences, MI-inspired instruction and curriculum and the use of strength-based learning activities and concluded that MI profiles of students may be used by students and teachers alike to further students' educational agendas because they serve as the basis for personalized educational planning.

NEED OF THE STUDY

Many researchers have worked on the relationship between gender and MI of learners. With an aim of finding out whether or not there were differences in students' intelligence types in terms of their gender, Loori (2005) conducted a study, and selected 90 English language learners. The results showed that males had higher preference in logical/mathematical intelligence. . On the other hand, Razmjoo (2008) found that females had higher intrapersonal intelligence than that of males whereas there were no significant differences between male and female participants in relation to language success and types of intelligences. Therefore, there are contrasts between the results of these two studies which studied the relationship with gender and MI.

It's been approved that MI theory is very important to educators because it helps us expand our horizon of available teaching/learning tools beyond the conventional linguistic and logical methods by nurturing intelligences in many different potential pathways for an individualized learning environment. Though Gardner, the father of MI, said he was less persuaded that it can be useful in mastering a foreign language, yet many teachers claim success using MI approaches.

RESEARCH QUESTION OF THE STUDY

This study aims to explore the relationship between students' gender and intelligence types, the relationship between particular intelligence types and students' success in grammar, and writing in English as a foreign language. So, the study addressed the following research questions:

1. The types of intelligences of university level foreign language learners
2. Whether there is a significant difference between female and male students in terms of their types of intelligences
3. Whether there is a significant relationship between a particular type of intelligence and success in grammar, and writing.

METHOD

Participants

40 students were selected randomly as the participants of the study. They were all students of Islamic Azad University, Tonekabon Branch, Iran. They studied English as a foreign language. Moreover, all of the subjects were intermediate level students whose age ranged from 18 to 24. Intermediate level students were selected for the purposes of this study since the inventory used in this study required an intermediate level of English for the students to understand the content of the instrument.

The Instruments

In the study MI Inventory for Adults, prepared by Armstrong (1994), was used. The inventory consists of a Likert-type scale with 70 items measuring types of intelligences. The inventory has ten statements for each specific intelligence type. The sentences of the inventory consisted of some vocabulary items and grammatical structures which the students didn't know. Hence, these items were simplified in a way that the students would have no difficulty in comprehending them. In addition to this, a section was involved in the inventory gathering students' personal information. It consisted of the items about students' gender and their mothers' and fathers' level of education. In order to examine the relationship between a particular type of intelligence and success in grammar, and writing, students' scores of grammar, and writing were obtained from the administration of the Department of Foreign Languages. It should be mentioned that only 7 types of MI theory out of 9 MI were investigated in this study. That is, naturalist and existential intelligence were not included in this study. Moreover, the inventory measure 7 intelligences.

140 intermediate level students from Islamic Azad University, Tonekabon Branch, Iran were selected randomly .In order to determine the time necessary for the students to complete the inventory and to see whether there were any unclear statements for them students in the evening courses were chosen. The reliability of the instruments were computed, and it was shown that the Cronbach's alpha reliability coefficient was .792, indicating that the instrument can be considered as a reliable tool to be used for the purposes of this study.

Data Analysis

In this study SPSS 16.00 was used to analyze the collected data. Independent samples t-test analysis was used to find whether there were any differences between male and female students in terms of their types of intelligences. The data were analyzed descriptively to identify the intelligence types of the participants. In order to determine the relationship between a particular type of intelligence and students' success in grammar, and writing in English as a foreign language, and the relationship between gender and the intelligences of the students, the data were analyzed inferentially by means of correlation analysis.

RESULTS AND DISCUSSION

The findings of the study are presented in the order of the research questions.

The Types of Intelligences Held by University Level Foreign Language Learners

The analysis revealed that logical mathematical intelligence (mean: 3.88) was the leading intelligence among the students who participated in this study. The other dominant intelligence types were spatial intelligence (mean: 3.67), bodily-kinesthetic (mean: 3.66), interpersonal intelligence (mean: 3.61), and intrapersonal intelligence (3.54). These were followed by a considerably less common intelligences, namely linguistic intelligence (mean: 3.19) and musical intelligence (mean: 3.18). It is noteworthy that musical intelligence had the highest standard deviation, indicating a greater variation among the participants who showed tendency toward musical intelligence. Table 1 presents the results of the descriptive statistics.

Table 1. Types of Intelligences of Students

Intelligence Types	Mean	Std. Deviation
Logical-mathematical	3.8889	.4652
Spatial	3.6732	.4407
Bodily-kinesthetic	3.6607	.4438
Interpersonal	3.6171	.4943
Intrapersonal	3.5480	.4977
Linguistic	3.1984	.4638
Musical	3.1839	.6021

Whether there is a Significant Difference between Female and Male Students in terms of their Types of Intelligences

Results show that intrapersonal, linguistic, logical, and musical intelligences were more common among females. Further analysis of group differences revealed a significant difference between males and females only in linguistic intelligence (p<.02). The results are presented in Table 2.

Table 2. Gender Differences

Types of Intelligence	Gender	Mean	SD	T	Sig 2-tailed
Bodily-kinesthetic	Female	3.6326	.44577	-.825	.411
	Male	3.6939	.44254		
Interpersonal	Female	3.6033	.50341	-.364	.716
	Male	3.6335	.48660		
Intrapersonal	Female	3.5954	.66917	.474	.636
	Male	3.5488	.47398		
Linguistic	Female	3.2808	.43422	2.354	.020
	Male	3.1010	.48178		
Logical-Mathematical	Female	3.7684	.59298	-.393	.695
	Male	3.6202	.48081		
Spatial	Female	3.8955	.60686	1.627	.106
	Male	3.9311	.45092		
Musical	Female	3.2075	.57836	.341	.733
	Male	3.1728	.64346		

Whether there is a significant relationship between a particular type of intelligence and success in grammar, listening and writing

The third research question scrutinized whether there was a relationship between students' intelligence types and their achievement grammar, and writing. Pearson correlation coefficients indicated some relationship between students' exam scores and intelligence types. Table 3 demonstrates the relationship among grammar, and writing and the types of intelligences withheld by the participants dominantly.

Table 3. The Relationship between Intelligence Types and Success

	Bodily.	Inter	Intra.	Linguistic	Logical	Spatial	Musical
Grammar	-.166*	-.110	-.183*	-.062	-.081	-.172*	.091
Writing	-.027	.034	.008	.043	-.124	-.107	.182*

* Correlation is significant at the 0.05 level (2-tailed)

Results show that there is a low positive relationship between writing scores and musical intelligence (r=.182, p<.033). The analysis also indicated some negative correlations. Bodily-kinesthetic intelligence (r= -.166, P<.049), intrapersonal intelligence (r=-.183, P<.031), and spatial intelligence (r=-.172, p<.042) had low negative correlations with students' grammar test scores.

CONCLUSION

The main objective of this study was to determine intelligence types of students employed by them in relation to their foreign language learning. Results indicated that logical-mathematical intelligence was the leading intelligence type and the musical intelligence was the least common intelligence type employed by the students who participated in this study. These findings are in line with Özdemir et al. (2006) who also reported stronger preference for logical mathematical intelligence and weaker preference for musical intelligence. However, contrasts appear between these two studies in that the students in our study were found to be stronger in their bodily-kinesthetic intelligence. Intrapersonal intelligence, which is the ability to understand one's feelings, strengths, and weaknesses (Chen & Gardner, 2005) was found to be the fifth common intelligence type in our study. This result indicated that students may not be successful in understanding their emotions, strong and weak characteristics. This situation requires further scrutiny since it draws attention to the importance of affective variables in second and foreign language learning. As Smith (2001: 44) explains, affective variables such as self-esteem, inhibition and anxiety are important factors in second language mastery and are aspects of intrapersonal intelligence which helps learners examine their strengths and weaknesses in language learning processes. Similarly, as Rahimi and Abedini's (2009: 15) review of literature shows, affect is considered to be "one of the main determining factors of success in learning foreign or second languages." Hence, teachers should try to develop their students' intrapersonal intelligence so that this particular intelligence type will help improving their overall language learning.

Although the results about the most and the least common intelligence types of the students seem to give information about the students themselves, they provide us with some information for the use of foreign language teachers as one research question tried to illuminate whether there was a relationship between a particular type of intelligence and students' success in grammar, and writing. Although Razmjoo (2008) found no significant relationship between language success and the types of intelligences in particular, three types of intelligences were found to have relationship with writing and grammar. While writing and musical intelligence were positively related, negative relationship was found between bodily-kinesthetic, intrapersonal, spatial intelligences and grammar.

The discussion above leads us to suggest that employing grammar based syllabus with traditional materials with students who have strong bodily-kinesthetic and intrapersonal intelligences may have detrimental effect on students' development since such students are known to benefit from activities such as role plays, field trips, miming, creative drama and movement and other group activities while teaching grammar since these activities are appropriate for the bodily-kinesthetic intelligence. Activities such as independent student work, individualized projects, personal journal keeping and reflective learning for developing intrapersonal intelligence should also be employed. In short, the teaching of the grammatical structures can be integrated in certain kinds of activities in order to address certain types of intelligences.

The present study also looked at the relationship between gender, and students' multiple intelligences. In terms of gender results of this study indicated significant results. Loori (2005) had found a relationship between gender and logical/mathematical intelligence and intrapersonal intelligence. It was seen that logical/mathematical intelligence was stronger in males while intrapersonal intelligence was higher in females. However, in this study, logical/mathematical, intrapersonal, linguistic, and musical intelligences were found to be more common among female students. However, significant relationship was found only between linguistic intelligence and gender in that it is more common in females than males similar to the results of Teele's (2000) study.

The present study was conducted with intermediate level students. Hence, similar studies should be conducted with lower and upper level students to have a larger picture of the phenomenon under study. Similarly, because most of the intelligence types studies completed in Iran are related to young learners, the relationship between different aspects of multiple intelligences and language proficiency of adult learners should be studied.

This study's focus was on the relationship between types of intelligence and foreign language skills and aspects of grammar, and writing .The relationship between intelligence types and reading, and listening could not be examined due to the fact that it was integrated into the grammar exam. If the reading, and listening grades of the students could have been obtained separately, it would have been possible to investigate the relationship between their reading, and listening ability and intelligence types. Questions such as how a certain intelligence type relates to vocabulary, grammar, reading, writing, listening and speaking skills remain unanswered. Experimental and preferably longitudinal studies which include MI-based language instruction and traditional instruction may yield more meaningful and useful results. More specifically, the proficiency level of language learners in a MI-based reading or writing class can be compared to the proficiency level of language learners in a traditional reading or writing class at the end of the term. Hence, future studies should include an analysis of intelligence types and students' success in language skills. Along the same lines, teacher development activities at all levels should inform future teachers of English about the theory and practice of MI to enhance practice of foreign language learning and teaching.

REFERENCES

Chen, J.Q. and Gardner, H. (2005). *Assessment based on multiple intelligences theory*. In D. P. Flanagan (Ed.), Contemporary Intellectual Assessment: Theories, Tests, and Issues (77-102). New York: Guilford Press.

Emig, V.B. (1997). A multiple intelligences inventory. *Educational Leadership*, 55(1), 47-50.

Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.

Gardner, H. (2003). *Multiple Intelligences after Twenty Years*. Paper presented at the American Educational Research Association, Chicago, Illinois, April 21, 2003

Gardner, H. (2006). *The Development and Education of the Mind: The Collected Works of Howard*. London, UK: Routledge.

Haley, M.H. (2004). Learner-centered instruction and the theory of multiple intelligences with second language learners. *Teachers College Record*, 106(1), 163-180.

Hamurlu, M.K. (2007). *The effect of instruction based on multiple intelligences theory on the students' achievements in English and their attitudes towards English at 9th grade at foreign language based high school.* Unpublished MA thesis, Gaziantep University, Graduate School of Social Sciences, Department of Educational Sciences, Gaziantep: Turkey.

Heacox, D. (2002). *Differentiating instruction in the regular classroom: how to reach and teach all learners, grades 3-12*. Minneapolis, MN: Free Spirit Pub.

Loori, A.A. (2005). Multiple intelligences: a comparative study between the preferences of males and females. *Social Behavior and Personality*, 33(1), 77-88.

McMahon, S.D. and Rose, D.S. (2004). Multiple intelligences and reading achievement: an examination of the Teele Inventory of Multiple Intelligences. *The Journal of Experimental Education*, 73(1), 41-52.

Moran, S., Kornhaber, M. and Gardner, H. (2006). Orchestrating multiple intelligences. *Educational   Leadership*, 64(1), 22-27.

Noble, T. (2004). Integrating the revised Bloom's taxonomy with multiple intelligences: a planning tool for curriculum differentiation. *Teachers College Record*, 106(1), 193-211.

Nolen, J.L. (2003). Multiple intelligences in the classroom. *Education*, 124(1), 115-119.

Özdemir, P. Güneysu, S. and Tekkaya C. (2006). Enhancing learning through multiple intelligences. *Educational Research,* 40(2), 74-78.

Poole, G.T. (2000). *Application of the theory of multiple intelligences to second language learners in classroom situations.* Speech at the National Association of African American Studies & National Association of Hispanic and Latino Studies: 2000 Literature Monograph Series 21-26 February 2000, Houston.

Rahimi, A. and Abedini, A. (2009). *The Interface between EFL Learners' Self- Efficacy Concerning Listening Comprehension and Listening Proficiency.* Novitas-ROYAL (Research on Youth and Language), 3(1), 14-28.

Razmjoo, S.A. (2008). On the relationship between multiple intelligences and language success. *The Reading Matrix*, 8(2), 155-174.

Shearer, C.B. (2004). Using a multiple intelligences assessment to promote teacher development and student achievement. *Teachers College Record*, 106(1), 147-162.

Smith, E. (2001). Implications of multiple intelligences theory for second language learning. *Post-Script*, 2(1), 32-52.

Teele, S. (2000). *Rainbows of intelligence: Exploring how students learn.* USA: Corwin Press.