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A Study of Iranian EFL Multiple Intelligences and their Use of Reading Strategies

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Abstract

The present study was an attempt to investigate the relationship between Iranian EFL learners' Multiple Intelligences (MI) and their use of reading strategies. The relationship was examined through the administration of two instruments: Multiple Intelligences Developmental Assessment Scales (MIDAS) and Survey of Reading Strategies (SORS), on 140 EFL university students. The analysis of data obtained from correlational procedures indicated that there is a meaningful relationship between the subjects' MI and their reading strategies. Among the eight intelligences defined by Gardner (1983) linguistic, interpersonal, intrapersonal, spatial, and logical-mathematical intelligences were found to have positive relationships with the subjects' reading strategies use. The findings suggest that teachers should structure the presentation of material in a style which engages most or all the intelligences.

Keywords: Multiple intelligences, Reading strategies, EFL learners

Introduction

Until recently intelligence was viewed as a single trait which was measured through IQ test and a person with a high IQ score was considered intelligent. Intelligence from this traditional point of view is a general ability possessed in varying degree by all individuals. Gardner's (1983) theory of Multiple intelligences (MI) opened a new chapter in the way intelligence is viewed. Arguing that intelligence is not a single construct of human mind that can be measured through one single test, Gardner (1993) defines intelligence as the "ability to solve problems or fashion products that are of consequence in a particular cultural setting or community" (p. 15). Gardner has a pluralistic view of mind and recognizes many discrete facets of cognition. Believing that people have different cognitive strengths and contrasting cognitive styles, he criticizes the standardized IQ test as it narrowly measures intelligence merely based on an individual's linguistic and logical-mathematical abilities (Gardner, 1983). The realm of human cognition he believes requires including a wider and more universal set of competences many of which cannot be measured by the standard verbal method.

In his book, *Frames of Mind* (1983), Gardner defined seven intelligences. Then he added an eighth intelligence and discussed the possibility of a ninth (Gardner, 1999). A brief explanation of the eight intelligences appears below.

1. Linguistic intelligence: the ability to use language effectively both orally and in writing
2. Logical/mathematical intelligence: the ability to use numbers effectively and reason well
3. Visual/spatial intelligence: the ability to recognize form, space, color, line, and shape and to graphically represent visual and spatial ideas
4. Bodily/kinesthetic intelligence: the ability to use the body to express ideas and feelings and to solve problems
5. Musical intelligence: the ability to recognize rhythm, pitch, and melody
6. Naturalist intelligence: the ability to recognize and classify plants, minerals, and animals
7. Interpersonal intelligence: the ability to understand another person's feelings, motivations, and intentions and to respond effectively
8. Intrapersonal intelligence: the ability to know about and understand oneself and recognize one's similarities to and differences from others

Gardner (1993) believes that all people regardless of their cultures possess core abilities in each of these intelligences and under the right circumstances and appropriate training they can develop each intelligence to a high level of functioning

Since there is a close relationship between intelligence and education, educational policy and actual management of schools has always been affected by how intelligence is viewed (Snow, 1982). Proponents of the traditional view of intelligence encourage uniform schools with the same method of teaching and assessment for all students with no consideration to individual differences in learning. Gardner's theory of multiple intelligences in contrast is based on the pluralistic view of mind and acknowledges the diversity in individuals' intellectual profiles. Proponents of MI encourage educational programs that as Smith (2001) states recognize individual differences by offering multiple entry points to new concepts or information, and assessment procedures that are authentic and learner centered.

Since the development of multiple intelligences theory by Gardner (1983), motivated language educators began to explore the relationship between MI and foreign/second language teaching/learning. In line with current studies, the present study was conducted to examine the relationship between multiple intelligences and second language reading strategies use, maintaining Gardner's view of multiple intelligences. Specifically, the study addressed the following research questions:

- Is there any relationship between Iranian EFL learners' multiple intelligences and their use of reading strategies?

Literature Review

Researches on reading comprehension and reading strategy have shown that reading in first and second language is of a highly individual nature (Anderson, 1991). That is as Upton (1997) states no two readers do process the same text in exactly the same way. New theories of intelligence (Gardner, 1983; Sternberg, 1985), on the other hand claim that there are distinct abilities that differ across individuals. These have implications for teachers in general and reading teachers in particular regarding choosing reading materials, teaching techniques and ways of assessment. From the advent of MI proposed by Gardner, many studies have been done in educational settings to explore any relation between learning and learners' MI profiles. In the realm of EFL/ESL studies have been done to examine the possible connections between learners' MI profiles and language learning in general and language skills or sub skills in particular. However, the related literature encompasses intriguing results regarding the relationship of MI and language learning and skills or other related language issues. A number of studies conducted in the Iranian context showed a positive relation between MI and language learning and related issues (Akbari & Hosseini 2008; Hashemi, 2010; Ahmadian and Hosseini, 2012; Mahdavy, 2008). However, there are studies which found no relation between MI and English language learning (Razmjoo, 2008; Sadeghi and Farzizadeh, 2012; Bemani Naeini and Pandian, 2010).

In a study conducted with 90 Iranian EFL university students, Akbari and Hosseini (2008) found significant positive relationships between the participants' use of language learning strategies and their MI. Their study showed that there are significant correlations between different strategy tips and overall MI scores. Metacognitive learning strategies showed the greatest correlations with almost all the components of MI. Among the individual intelligences, musical intelligence did not significantly correlate at all with any strategy use type. Moreover, Linguistic, naturalist and interpersonal intelligences were found as positive predictors of language learning strategy use while the kinesthetic intelligence was a negative predictor of the strategy use.

Another study conducted by Razmjoo (2008) with the aim of finding any relationship between MI and language proficiency revealed a different result. Data gathered through a 100-item language proficiency test and a 90-item multiple intelligences questionnaire answered by 278 Iranian male and female who took part in the Ph.D. Entrance exam to university indicated that there is no significant relationship between language proficiency and multiple intelligences in general and all types of intelligences. His study also showed that there is no significant difference between male and female participants regarding language proficiency and types of intelligences. Moreover, none of the intelligence types were diagnosed as the predictor for language proficiency.

Regarding language learning skills studies also revealed contradictory or varying results. Ahmadian and Hosseini (2012) conducted a research to investigate the possible relationship between EFL learners' multiple intelligence (MI) and their writing performance. The results of correlational analysis revealed a statistically significant relationship between the participants' MI and participants' performance in writing. They found that from among the eight intelligences only linguistic and interpersonal intelligences have more statistically significant relationships with the writing performance. Linguistic intelligence was found to be the best predictor of writing performance.

However, in Sadeghi and Farzizadeh's (2012) study with the aim of finding any relation between Multiple Intelligences (MI) and the writing ability of EFL learners showed a different result. They administered a translated (Persian) version of Armstrong's MI questionnaire (1995) and an IELTS writing task to 47 female university students. Results indicated that neither MI as a whole nor the components of MI had a significant relationship with EFL learners' writing ability.

The importance of the role that MI can play in recent educational program which favors learners' differences, and the intriguing results of existing literature require that much work be done in this regard in order to come up with more clear results.

Results and Discussion

The descriptive statistics of MI subscales scores are presented in Table 1. It shows that the interpersonal intelligence with the highest mean (56.25) among all the subscales is the most developed intelligence among students. The intrapersonal and linguistics with the means of 53.27 and 52.32 are the second and third developed intelligence among students. The naturalist intelligence with the least mean of 37.45 is the less developed intelligence among students. However, the highest standard deviation (17.37) belongs to this intelligence indicates the high variability of this intelligence among the subjects.

Table 1: Frequency analysis of multiple intelligences

	MUS	KINES	LOGIC	SPAT	LINGIS	INTER	INTRA	NATUR
N	140	140	140	140	140	140	140	140
Mean	42.53	39.66	48.89	45.73	52.32	56.25	53.27	37.45
Median	41.96	38.07	50.00	46.55	52.63	59.72	52.88	35.94
Mode	57	46	50	38	42	50	51	30
Std.	17.22	17.18	15.22	17.22	13.98	15.74	13.00	17.37
Minimum	7	2	18	8	21	20	18	5
Maximum	84	88	89	94	88	94	83	80

A multiple modes exist. The smallest value is shown

To answer the research question that is: "Is there any relationship between the Iranian EFL learners' MI and their use of different reading strategies?" a correlational analysis was conducted between MI subscales scores and the SORS overall score. As table 2 shows, there was a positive relationship between students' reading strategy and their logical-mathematical (0.262), spatial (0.283), linguistic (0.375), intrapersonal (0.394) and interpersonal intelligence (0.409), ranging from very low to moderate relationship.

Then, the correlation was conducted between the scores of each SORS category (GLOB, SUP, PROB) and MI subscales scores. Table 3 shows the correlation between MI subscales and three categories of SORS. There was a positive relationship between global reading strategies and Interpersonal intelligence (0.291), Linguistic intelligence (0.352), and Intrapersonal intelligence (0.385), ranging from low to moderate relationship. There was also a positive relationship between supportive reading strategies with Intrapersonal intelligence (0.277), Linguistic intelligence (0.305), and Interpersonal intelligence (0.442) ranging from low to moderate relationship.

And finally there was a positive relationship between problem solving reading strategies and Logical Mathematical intelligence (0.195), Intrapersonal intelligence (0.226), and Interpersonal intelligence (0.242), ranging from very low to low relationship. These results indicated the existence of some meaningful relationship between five MI subscales and reading strategies use.

Table 2: The correlation coefficients between the scores of MI subscales and reading strategies scores

Correlations

		MUS	KINES	LOGIC	SPAT	LINGIS	INTER	INTRA	NATUR	TO_RSS Total RS stand /150	TO_TORCS Total RC TOEFL stan d/20	TO_IERCS Total RC IELTS stan/27
MUS	Pearson Correlation	1.000	.459*	.287*	.272*	.368*	.185*	.199*	.305*	.074	.099	.052
	Sig. (2-tailed)	.	.000	.001	.001	.000	.029	.018	.000	.388	.244	.546
	N	140	140	140	140	140	140	140	140	139	140	140
KINES	Pearson Correlation	.459*	1.000	.397*	.474*	.514*	.543*	.455*	.526*	.139	-.002	.080
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000	.000	.103	.982	.345
	N	140	140	140	140	140	140	140	140	139	140	140
LOGIC	Pearson Correlation	.287*	.397*	1.000	.697*	.449*	.458*	.791*	.518*	.262*	.181*	.148
	Sig. (2-tailed)	.001	.000	.	.000	.000	.000	.000	.000	.002	.033	.081
	N	140	140	140	140	140	140	140	140	139	140	140
SPAT	Pearson Correlation	.272*	.474*	.697*	1.000	.539*	.531*	.714*	.565*	.283*	.176*	.076
	Sig. (2-tailed)	.001	.000	.000	.	.000	.000	.000	.000	.001	.037	.373
	N	140	140	140	140	140	140	140	140	139	140	140
LINGIS	Pearson Correlation	.368*	.514*	.449*	.539*	1.000	.710*	.639*	.440*	.375*	.095	.133
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000	.000	.000	.263	.117
	N	140	140	140	140	140	140	140	140	139	140	140
INTER	Pearson Correlation	.185*	.543*	.458*	.531*	.710*	1.000	.699*	.380*	.409*	.004	-.051
	Sig. (2-tailed)	.029	.000	.000	.000	.000	.	.000	.000	.000	.966	.549
	N	140	140	140	140	140	140	140	140	139	140	140
INTRA	Pearson Correlation	.199*	.455*	.791*	.714*	.639*	.699*	1.000	.464*	.394*	.106	.073
	Sig. (2-tailed)	.018	.000	.000	.000	.000	.000	.	.000	.000	.211	.391
	N	140	140	140	140	140	140	140	140	139	140	140
NATUR	Pearson Correlation	.305*	.526*	.518*	.565*	.440*	.380*	.464*	1.000	.129	.029	.096
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.	.131	.735	.260
	N	140	140	140	140	140	140	140	140	139	140	140
TO_RSS Total RS stand /150	Pearson Correlation	.074	.139	.262*	.283*	.375*	.409*	.394*	.129	1.000	-.017	-.138
	Sig. (2-tailed)	.388	.103	.002	.001	.000	.000	.000	.131	.	.845	.105
	N	139	139	139	139	139	139	139	139	139	139	139
TO_TORCS Total RC TOEFL stan d/20	Pearson Correlation	.099	-.002	.181*	.176*	.095	.004	.106	.029	-.017	1.000	.476*
	Sig. (2-tailed)	.244	.982	.033	.037	.263	.966	.211	.735	.845	.	.000
	N	140	140	140	140	140	140	140	140	139	140	140
TO_IERCS Total RC IELTS stan/27	Pearson Correlation	.052	.080	.148	.076	.133	-.051	.073	.096	-.138	.476*	1.000
	Sig. (2-tailed)	.546	.345	.081	.373	.117	.549	.391	.260	.105	.000	.
	N	140	140	140	140	140	140	140	140	139	140	140

** - Correlation is significant at the 0.01 level (2-tailed).

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

Among eight intelligences identified by Gardner (1983), five of them: logical-mathematical, spatial, linguistic, intrapersonal, and interpersonal were found to have a strong correlation with reading strategies use. Regarding the strength of correlations interpersonal, intrapersonal, and linguistic intelligence each had a moderate correlation with reading strategies use. Spatial and logical mathematical intelligence had a low correlation with reading strategies use.

The positive relationship between linguistic intelligence and reading strategies is justified by saying that “verbal intelligence involves the mastery of language” (Nolen, 2003, p. 115). Nolen (2003) also states that people with verbal intelligence have the ability to analyze and manipulate language and

to pay special attention to grammar and vocabulary. Language enables them to memorize information better.

Table 3. The Correlation Coefficients between the Scores of MI Subscales and the Scores of Reading Strategies Subscales

Correlations

		RS_GLOBS Reading strategy glob stand /65	RS_SUPS Reading strategy sup stan /45	RS_PROS Reading strategy pro stand/40	MUS	KINES	LOGIC	SPAT	LINGIS	INTER	INTRA	NATUR
RS_GLOBS Reading strategy glob stand /65	Pearson Correlation	1.000	.448*	.578*	.063	.067	.248*	.269*	.352*	.291*	.385*	.162
	Sig. (2-tailed)	.	.000	.000	.457	.431	.003	.001	.000	.000	.000	.056
	N	140	140	139	140	140	140	140	140	140	140	140
RS_SUPS Reading strategy sup stan /45	Pearson Correlation	.448*	1.000	.334*	.086	.184*	.146	.191*	.305*	.442*	.277*	.025
	Sig. (2-tailed)	.000	.	.000	.310	.030	.085	.024	.000	.000	.001	.767
	N	140	140	139	140	140	140	140	140	140	140	140
RS_PROS Reading strategy pro stand/40	Pearson Correlation	.578*	.334*	1.000	.019	.103	.195*	.178*	.174*	.242*	.226*	.058
	Sig. (2-tailed)	.000	.000	.	.822	.226	.021	.036	.041	.004	.008	.498
	N	139	139	139	139	139	139	139	139	139	139	139
MUS	Pearson Correlation	.063	.086	.019	1.000	.459*	.287*	.272*	.368*	.185*	.199*	.305*
	Sig. (2-tailed)	.457	.310	.822	.	.000	.001	.001	.000	.029	.018	.000
	N	140	140	139	140	140	140	140	140	140	140	140
KINES	Pearson Correlation	.067	.184*	.103	.459*	1.000	.397*	.474*	.514*	.543*	.455*	.526*
	Sig. (2-tailed)	.431	.030	.226	.000	.	.000	.000	.000	.000	.000	.000
	N	140	140	139	140	140	140	140	140	140	140	140
LOGIC	Pearson Correlation	.248*	.146	.195*	.287*	.397*	1.000	.697*	.449*	.458*	.791*	.518*
	Sig. (2-tailed)	.003	.085	.021	.001	.000	.	.000	.000	.000	.000	.000
	N	140	140	139	140	140	140	140	140	140	140	140
SPAT	Pearson Correlation	.269*	.191*	.178*	.272*	.474*	.697*	1.000	.539*	.531*	.714*	.565*
	Sig. (2-tailed)	.001	.024	.036	.001	.000	.000	.	.000	.000	.000	.000
	N	140	140	139	140	140	140	140	140	140	140	140
LINGIS	Pearson Correlation	.352*	.305*	.174*	.368*	.514*	.449*	.539*	1.000	.710*	.639*	.440*
	Sig. (2-tailed)	.000	.000	.041	.000	.000	.000	.000	.	.000	.000	.000
	N	140	140	139	140	140	140	140	140	140	140	140
INTER	Pearson Correlation	.291*	.442*	.242*	.185*	.543*	.458*	.531*	.710*	1.000	.699*	.380*
	Sig. (2-tailed)	.000	.000	.004	.029	.000	.000	.000	.000	.	.000	.000
	N	140	140	139	140	140	140	140	140	140	140	140
INTRA	Pearson Correlation	.385*	.277*	.226*	.199*	.455*	.791*	.714*	.639*	.699*	1.000	.464*
	Sig. (2-tailed)	.000	.001	.008	.018	.000	.000	.000	.000	.000	.	.000
	N	140	140	139	140	140	140	140	140	140	140	140
NATUR	Pearson Correlation	.162	.025	.058	.305*	.526*	.518*	.565*	.440*	.380*	.464*	1.000
	Sig. (2-tailed)	.056	.767	.498	.000	.000	.000	.000	.000	.000	.000	.
	N	140	140	139	140	140	140	140	140	140	140	140

** . Correlation is significant at the 0.01 level (2-tailed).

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

Language is one of the ways in which people respond to each other, thus interpersonal intelligence can play a key role in second language learning. Intrapersonal intelligence is highly involved in adult second language learning. Many of affective variables that are important factors in second language mastery, such as self-esteem, inhibition, and anxiety are aspects of intrapersonal intelligence (Smith, 2001). The positive relationship between interpersonal and intrapersonal intelligences with reading strategies found in this study also indicated the involvement of these two intelligences in reading strategies use.

The positive relationship between spatial intelligence and reading strategies is justified by saying that spatial intelligence gives a person the ability to manipulate and create mental images in order to solve problem (Nolen, 2003). Thus, students with developed spatial intelligence may be better second language reading strategies user. Logical-mathematical intelligent people were able to detect patterns, reason deductively, and think logically. This justifies the positive correlation between logical-mathematical intelligence and reading strategies.

The correlation between MI subscales and reading strategies subscales showed that there was a positive relationship between logical/mathematical (0.248), spatial (0.269), interpersonal (0.291), linguistic (0.352), and intrapersonal intelligence (0.385) with global reading strategies ranging from low to moderate. This indicated that subjects developed in these intelligences tended to use global reading strategies more than the other two categories.

There was also a positive relationship between the support reading strategies with intrapersonal (0.277), linguistic (0.305), and interpersonal intelligence (0.442) ranging from low to moderate correlation. It can be inferred that student with developed in these intelligences were better at using support reading strategies.

There was a very low correlation between problem solving reading strategies subscale and logical-mathematical (0.195) intrapersonal (0.226), interpersonal intelligence (0.242). Though the correlations were very low, they were significant and indicated that students with developed in these intelligences were better at using problem solving strategies.

Conclusion

The present study was conducted to investigate whether there is any relationship between EFL learners' reading strategies and their multiple intelligences. The findings manifested that there was a significant relationship between participants' MI profile and their reading strategy use. From among eight intelligences identified by Gardner (1983), five of them: logical-mathematical, spatial, linguistic, intrapersonal, and interpersonal were found to have a strong correlation with reading strategies use.

The results of this study were in line with those obtained by Akbari and Hosseini (2008) in which they found significant positive relationships between the participants' use of language learning strategies and their overall MI scores. The findings of the present study also confirmed those achieved by Rahimi et al. (2012) in which there was a moderate positive relationship between the successful readers' use of reading strategy and linguistic, spatial, logical-mathematical, interpersonal and intrapersonal intelligences.

Apart from variations in degree of correlation between language learning skills and MI as a whole or individual intelligences, and apart from the variations in the relationship between language learning skills and different types of MI, the findings of this study were in line with all studies that have shown the positive role that MI can have in language learning. On the other hand, the findings of the present study opposed those that could not find any relationship between EFL learners' MI profiles and language proficiency (Razmjoo, 2008), writing ability (Sadeghi and Farzizadeh, 2012), listening comprehension (Bemani Naeini and Pandian, 2010), and performance on vocabulary tests (Javanmard, 2012).

Individual differences as an underlying assumption behind the theory of MI implied that teachers could not follow the same teaching method for all learners. Gardner (1993, P.208) reiterated that "We are not all the same, we do not all have the same kinds of mind, and education works most effectively for most individuals if ... human differences are taken seriously". Providing eight different ways of teaching is one of the most remarkable features of MI theory. Teachers can present their lessons in a wide variety of ways using music, cooperative learning, art activities, role play, multimedia, field trips, inner reflection, and so on (Armstrong, 2009). Application of this theory does not mean that teachers teach every concept through each of the intelligences, rather it suggests that teachers analyze their lesson plans to examine which intelligences can be used with each activity. Lessons that incorporate the use of more than one type of intelligence are appropriate for more students than lessons that involve only one (Gardner, 1993). This study suggests that teachers be informed of their students' MI profile and employ a variety of teaching strategies which suit students' dominant intelligences.

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تعلیم و تربیت، روانشناسی، حقوق و مطالعات فرهنگی - اجتماعی

دستاورد های نوین جهان در
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