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THE RELATIONSHIP BETWEEN MULTIPLE INTELLIGENCES AND READING COMPREHENSION: *THE CASE OF IRANIAN MEDICAL STUDENTS AND REVIEW OF LITERATURE*

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ABSTRACT

Aim: The present study was an attempt to investigate the relationship between multiple intelligences and reading comprehension ability of medical students. With advancements in psychology and cognitive sciences, the role of individual differences has been highlighted in the realm of L2 teaching. One of the outcomes of regarding individuals as different beings is the concept of Intelligence which has also gained an increasing importance in L2 learning, especially in reading comprehension skill.
Method: To this end, 157 students from the Guilan University of Medical Sciences took part in the study. The participants were given a reading comprehension test and Multiple Intelligences Developmental Assessment Scales (MIDAS).
Result: Findings indicated that the multiple intelligence profile of the medical students who completed the MIDAS questionnaire included interpersonal, linguistic, and logical-mathematical intelligences with a higher mean compared to other intelligences. Moreover, results of Pearson correlation and multiple regression analysis revealed that that there is a positive relationship between medical students' MI profile and reading comprehension skill.
Conclusion: However, this relationship was shown to be rather weak, in that the correlation coefficient was ($r = .18$, $p < .05$). Based on the findings of this study, L2 material developer, syllabus designers, and teachers can provide the learners with reading materials which address their multiple intelligences and help them in becoming more successful in their studies.

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INTRODUCTION

With advancements in psychology and cognitive sciences, the role of individual differences has been highlighted in the realm of L2 teaching. As held by *Brown* (Brown, 2001) and *Cook* (Cook, 2001), this change in the academic society has led to the consideration of the whole individuals with all their strengths, needs, pitfalls and challenges as being remarkably different from each other. One of the outcomes of regarding individuals as different beings is the concept of Intelligence which has alsogained an increasing importance in L2 learning. Traditionally, intelligence was considered as a single unique factor known as *Intelligence Quotient* (IQ) taking only 'Verbal' and 'Mathematical' capacities into account, but in recent decades *Gardner* (Gardner, 1983), who was a leading psychologist, has offered a broader theory of intelligence as a combination of different elements. *Gardner* (Gardner, 1983) proposed that children are different from eachother with respect to their abilities, skills, preferences and ways of carrying out things. He also believed that children differ in the

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experience of learning as processing and representing knowledge varies among them and they have their own unique learning styles. The concept ofintelligence has always been challenging and has been evolving through time. In fact, intelligence has developed from a general factor or as commonly stated *g* factor which is the one-dimensional view toward intelligence (Spearman, 1904; as cited in Simmons, 2001). The multidimensional conceptualization of intelligence or *Multiple Intelligences* (MI) was put forward by *Gardner* (8) and it encompasses several facets. *Gardner* (8) initially formulated a list of seven intelligences, however,his list was provisional andlater he added 'Naturalistic 'and 'Existential' intelligences. Gardner's list of intelligences includes, Linguistic, Spatial (Visual), Logical-mathematical, Interpersonal, Intrapersonal, Bodily-kinesthetic, Musical, Naturalistic, and Existential. The usefulness of MI theory in EFL classrooms has been identified and proven in recent years with the plethora of studies (such as *Akbari &Hosseini, 2008;* (Akbari, 2008) *Hajhashemi & Eng,* (Hajhashemi, 2012); *Jokar&Hesabi*, (Jokar, 2014); *Khooei Oskooei* & *Salahshoor,* (KhooeiOskooei, 2012); *Rahimi, Sadighi & Hosseiny Fard*, (Rahimi, 2011); *Razmjoo,* (Rahimi, 2011), which investigated different components of this theory and its applicability in the classrooms.

As indicated by *Razmjoo* (2008), the application of MI theory has strong consequences in the classrooms since, if teachers identify different strengths of the learners regarding the intelligences, accommodation of various capabilities of them in accordance with their approaches to learning can be possible. Extension of information in a variety of sciences, especially in the field of medicine has a key role for maintaining survival and promoting health in the community. The necessity for updating information in this profession results in more dependency of the students on the use of references books in English. In fact, the importance of English language is completely clear due to the need for new scientific resources. Emphasis on reading skill among English language learners is one of the most important methodological concerns in the field of language teaching. Moreover, in the Iranian EFL context educational policies focus basically on the reading skills of students. Consequently, the focus of teachers is on the reading skills of the students and trying to improve this skill. So, teachers should pay more attention to what students can do to use their strengths with suitable reading experience. Reading is defined as perceiving a written text, to understand its content. The resulted understanding is called reading comprehension (Wiener, 2006). Reading comprehension skill is a basic requirement for medical students who wish to practice in the universal working environment. Moreover, English is a communicative mean to conduct survey in the medical field. Most disciplines take place in a professional society or in association with meetings and publications in the English language. On the other hand, intelligence was once considered a single entity that was inherited, and it was believed that human beings could be trained to learn anything if it was presented in an appropriate way (Lazear, 2004). The application of MI can be effective since it can influence students' behavior in the classroom simply by creating an environment where individuals' needs are realized. Both language teaching methodology and the components of MI can result in increasing L2 learners' motivation and their academic achievement (Mckenzie, 2009). Consequently, it leaves a room for more research to bring all three variables (MI, gender and reading comprehension) together and see to what extent they can influence Iranian EFL learners' performance. So, it is potentially worthwhile to identify MI profile and its contribution to language teaching methodology used in L2 contexts. Despite the proliferation of studies conducted on MI and its effects on or relation to EFL learning, there is scarcity of research regarding the relationship between MI and reading skill of students taking degree courses in English. Thus, due to the significance of reading comprehension for students majoring in fields other than English language, and as MI theory has proven to be an important concept positively affecting the learners' performance, the present study attempted to examine the relationship between MI and reading comprehension of students majoring in the medical field. As such, the present study is an attempt to answer the following research questions

RQ1. What is the MI profile of medical students studying at Guilan University of Medical Sciences? RQ2.

Is there any relationship between medical students' MI profile and their reading comprehension skills?

Based on the above research questions, the following null hypothesis is proposed for the second research question:

$H_0$1. There is no significant relationship between medical students' MI profile and their reading comprehension skills.

Review of Literature

Because of the importance of the role of individual differences in the educational processes and probable effects that they may have on foreign or second language learning, many experts in the fields of psychology and teaching have explored the relationship between multiple intelligences, language teaching and learning including different skills and the effect of multiple intelligences-based curricula on the students' language learning. This section reviews a number of these studies in brief.

Gaines and Lehmann **(Gaines, 2002)** provided an MI-based project to improve the learners' reading comprehension ability. The participants were a group of fourth grade students in a major city. They also took the social and financial status of the students into account. The study was conducted to discover the problems the students face in reading comprehension. It was revealed that MI strategies could be used to improve the students' reading comprehension ability, and it enhanced their academic performance as well.

Mbuva **(Mbuva, 2003)** focused on the implementation of the MI theory in teaching and learning in the 21st century environment. He recommended that MI theory can be an effective teaching and learning tool useful at all levels. The researcherexplored various intelligence types, presented a definition of MI, and discussed the historical developments of MI. He further discussed the application of the MI in the classroom environment. It wasfound that "traditional ways of understanding pedagogy, and static methods of teaching, are giving way to the new classroom examination and application of the MI" (p. 1). He also emphasized that teachers should take account of the cognition, language, and culture of each of their students. In another study, Barchard (Barchard, 2003), carried out a research to show the extent to which Emotional Intelligence(EI), cognitive ability, and personality domain

predicted academic achievement of undergraduate students of psychology, using the scores gained in an academic year as the criterion of assessment. The result of the study indicated that cognitive ability and personality domain were strongly linked to academic achievement. The findings, moreover, revealed that although EI did not significantly correlate with the students' academic achievement, its subscales comprising emotional understanding, positive expressivity, and social translation significantly predicted it (Barchard, 2003). *McMahon, et al* explored the effect of MI on reading achievement of 288 fourth grade students (McMahon, 2004). The multiple intelligences scale used in the study was Teele Inventory of Multiple Intelligences. This scale consisted of several subscales including linguistic, logical-mathematical, interpersonal, intrapersonal, musical, spatial, and bodily-kinesthetic intelligences (McMahon, 2004). The results indicated that only mathematical intelligences significantly and strongly affected reading performance of the participants; other domains of intelligence; however, did not turn out to influence the students' reading comprehension.

Moreover, exploring the relationship between Iranian language learners' reading comprehension and their Multiple Intelligences, found a significant relationship between these two variables (Iranmanesh, 2005). With reference to gender differences, *Loori* (Loori, 2005), conducted a study of 90 English language learners and found that males revealed higher preference in logical-mathematical intelligence. On the other hand, *Razmjoo* (Razmjoo, 2008), found that the use of intrapersonal intelligence by females was more than that of males, whereas no significant difference was found between male and female participants about language success and types of intelligences (Razmjoo, 2008). Hence, contrasts exist between the results of these two studies which examined the relationship with gender and MI. *Shearer*investigated the MI of high school students with different levels of reading skill, including high, mid, and low (Shearer, 2006). The participants in the study were 215 high school students, who filled in *Multiple Intelligences Developmental Assessment Scales* (*MIDAS*) and took a test of reading comprehension. Thestudents were divided into three groups of high, mid, and low about the participants' performance on the reading test. **(27)**There were striking differences among the intelligences of these groups. The outcomesindicated that the students with a high level of reading ability were 'personal achievement oriented', which suggests an intrapersonal aspect of intelligence, while those students with a moderate reading ability seemed to be more 'socially focused', signifying an interpersonal aspect. The participants at a low reading level were more 'pragmatic, practical and action-oriented' representing mathematical intelligence. In a further research, *Mahdavy* examined the relationship between MI and listening performance of 117 Iranian EFL learners on the listening sections of IELTS and TOEFL (Mahdavy, 2008). The findings of the study showed a significant correlation between the first language and listening proficiency of the participants, but no relationship was found between the other domains of MI and the participants' listening proficiency (Mahdavy, 2008). *Akbari and Hosseini* conducted a survey to investigate any possible relationship between the EFL learners' use of language learning strategies and their multiple intelligences (Akbari, 2008). They reported significant relationship among language learning strategy use, the participants' multiple intelligences and their proficiency level. The study conducted by *Tahriri et al* intendedto determine the effectiveness of an MI-inspired instruction in Iran (Tahriri, 2011). More specifically, it aimed to investigate whether MI-based instruction enhances EFL students' language proficiency and language achievement in comparison with the instruction in which verbal-linguistic intelligence is activated (Tahriri, 2011). Additionally, the researcher surveyed EFL instructors' views regarding the implementation of the MI theory using an open-ended questionnaire. The findings indicated that only 40% of the teachers who were already familiar with the MI theory had implemented it in their classrooms *at least*'to some extent.'(Tahriri, 2011). Concerning the applicability of the MI theory in an EFL context, 66.6% considered it as applicable. *Barzegar et al*investigated the existence of a possible association between Iranian EFL learners' multiple intelligences and their performance on reading proficiency tests (Barzegar, 2011). Using a version of IELTS test 97 homogeneous students were selected to participate in the study (Barzegar, 2011). Using Pearson product moment correlation, it was revealed that there was a relatively weak relationship between MI scores and students' scores on reading proficiency test.A further analysis of stepwise multiple regressions indicated that the performance on reading proficiency item types could hardly be predicted by intelligence types.

MATERIALS AND METHODS

Research Design

The research design of the present study was that of descriptive ex-post-facto design, since the major aim of the study was to describe the characteristics of a chosen group of L2 learners in terms of their ability in EFL reading comprehension and their MI profile. Ex-post-facto designs are often used when the researcher does not have control in selecting and manipulating the independent variable, thus, it is used in studies where investigating the relationship between variables is of concern (Hatch, 1982).

Participants

The participants of this study were 157 Iranian University students including 86 males and 71 females. They were freshmen studying at the Guilan University of Medical Sciences. All the students were native speakers of Farsi and their age ranged from 19-22. They were also taking degree courses in General English. As indicated by *Robson* (2011), when a researcher aims to generalize the findings of a study to the whole population from which a sample was chosen, homogeneity of the sample gains significance. *Robson*further acknowledged that "the more accurate you want the estimates from your study to be, the larger sample is needed" (Robson, 2011). As such, in this study it was also tried to take the homogeneity of the participants into account, by conducting a language proficiency test and selecting those students who are at the same level of English proficiency. Therefore, out of the initial sample of the study who was composed of 172 learners, 157 who were at the intermediate level were selected to take part in the present study. It needs to be pointed out, the selection of the participants was based on convenient sampling and all the learners willingly took part in different phases of the study.

Instruments

There were three instruments utilized in the present study. The first instrument was an *Oxford Placement Test* (OPT) test. The

test comprised of language use and *cloze test* each with 25 and 35 items, respectively. It was used to make sure that the participants are homogeneous. OPT is a well-known test which is mostly utilized in SLA research to homogenize research samples and its validity and reliability is confirmed through numerous studies which have made use of it. The second instrument utilized in the present study was a reading comprehension test.

It was a researcher-made test of reading and composed of three major sections. The first section of the test assessed grammatical knowledge of the students and included 25 multiple choice items. The second part examined vocabulary knowledge of the participants through 15 multiple choice vocabulary items. The last section of the test included three short reading passages with some comprehension questions. In the choice of the reading texts it was tried to take the students' major of study into account; therefore, the main theme or subject of the reading passages was related to the medical field. Accordingly, the reading comprehension test contained 59 questions. Concerning the reliability of the test, it should be noted that the same test was tried out on 15 medical students with characteristics like the main participants of the study. Using test-retest method the correlation coefficient for the reading comprehension test was shown to be $r=.78$ ($p < .001$), which proves the reliability of the test. Moreover, the validity of the test was checked by three experienced L2 university professors and it was shown to be appropriate in assessing the reading comprehension of the learners.

A Further instrument utilized in this study was Multiple Intelligence Developmental Assessment Scale (MIDAS) questionnaire. In the present study, we adapted the translated version of MIDAS taken from the study of *Pishghadam* (2009). The reason for using the Persian version of the questionnaire was to avoid any problem or misunderstanding which may occur due to limitations in the participants' English language proficiency. As pointed out by *Akbari and Hosseini* (Akbari, 2008). *Gardner* himself recommended MIDAS for the measurement of multiple intelligences (Gardner, 1983). The questionnaire is a self-report instrument tapping the intellectual nature, and it was designed by *Shearer* (Shearer, 1996). The time for completing it is usually 35 minutes and it is composed of 119 Likert-type questions encompassing eight areas of interest, abilities, activities, and skills. The responses range from (*a* to*f*), while (*a*) indicates the highest degree and (*f*) refers to 'I do not know'.

The MIDAS used in this study comprised questions regarding eight multiple intelligences and existential intelligence, which has recently been added to the list, was not included in it. The validity of MIDAS was investigated by *Shearer* (26) and it was shown to be a useful and reasonable instrument for estimating a person's MI profile. As to the reliability of MIDAS, the adopted questionnaire was distributed among 15 students having similar characteristics to the main sample and Chronbach alpha for it was found to be .86 which is an appropriate scale.

Data collection procedures

To collect the necessary data for the purposes of the present study, several steps were taken. First, we should have access to a group of homogeneous L2 learners who were mostly similar in terms of their English language proficiency. Therefore, OPT was distributed among 172 learners, and 157 who were at the intermediate level of English language proficiency were chosen as the participants of the study. Prior to the conduct of the test, all the students were informed that participating in this study is not mandatory and those who are not willing can refrain from taking part in it. It was revealed that all the learners were consenting to take the test and they also agreed to take part in the other phases of the research. In the next step, the reading comprehension test was distributed among the target sample. Completing it took about 40 minutes and due explanations were given at the beginning of the test. The students were asked to answer the questions without hesitation, and they wererequired to write their answers in the answer sheet provided to them. Furthermore, once more the participants were ensured that their responses do not have any influence on their academic achievement scores. About one week later, the MIDAS questionnaire was distributed among the learners. As it comprised of many questions, no time limit was set, and the participants were given enough time to read each item of the questionnaire carefully and choose the response that properly described their perceptions and ideas. The researcher was present at the time of completing the questionnaire and the participants were free to ask about any ambiguities which arose. It should be mentioned that using the translated version of the test was very useful, and it truly helped us to successfully conduct the study.

Data analysis

To analyze the data in the present study both descriptive and inferential statistics were utilized. First, students' scores in the reading comprehension test were calculated. Then, their scores in the MIDAS were estimated and each participant received a total score. It should be noted that in the reading comprehension test for each right answer one point was assigned. After that, using Spearman Kolmogorov's Test it was revealed that the scores obtained from both reading test and MIDAS are normally distributed. For the descriptive section mean, standard deviation, and standard error of the means were used. To fulfill the main objective of the study, Spearman correlation test was running on the data obtained from reading comprehension test and MIDAS. Also, to find out which type of the intelligences can predict the reading skill of the participant, a stepwise Multiple Regression test was used with reading score as a criterion variable and the eight categories of MI as predictor variables.

RESULTS

Results of descriptive statistics for the reading test and MIDAS questionnaire

The primary objective of this study was to explore multiple intelligence profile of a group of Iranian medical students of both genders who were taking degree courses in General English. *Table- 4.1* presents the results of descriptive statistics for the multiple intelligence profile of the participants. The table illustrates minimum score, maximum score, mean score, and standard deviation of the participants' scores in each category of MIDAS, separately. As is evident in the table, verbal-linguistic intelligence has the highest mean score (X= 60.61) among the other types of intelligence. Therefore, it can be considered as the dominant intelligence type among the 157 medical students who participated in the present study. On the other hand, the table shows that intrapersonal intelligence has the lowest mean score (X= 31.35).

Table 4.1 Descriptive statistics for the MI profile of participants

Intelligences	N	Min.	Max.	X	Sd.
musical	157	18.00	70.00	37.89	10.48
bodily-kinesthetic	157	16.00	54.00	34.96	8.03
logical-mathematical	157	25.00	85.00	53.07	10.78
spatial	157	19.00	73.00	41.49	10.86
linguistic	157	34.00	88.00	**60.61**	12.45
interpersonal	157	30.00	86.00	58.65	11.07
intrapersonal	157	11.00	44.00	**31.35**	6.13
naturalistic	157	10.00	59.00	31.73	10.47
total sum	157	239.00	502.00	3.50	56.18

Table- 4.2 presents descriptive statistics for the reading comprehension test distributed among the learners to assess their reading comprehension ability. It shows minimum, maximum scores, and the mean score, together with standard deviation of students' scores in the reading test. As can be seen in the table, the mean score of the participants in this test is 22.91 (*Sd.*= 7.05), and the minimum and maximum scores are 5 and 35, respectively.

Table 4.2 Descriptive statistics of the reading comprehension test

	N	Min.	Max.	X	Sd.
Reading skill	157	5.00	35.00	22.91	7.05
Valid N	**157**				

Table- 4.3 presents the results of Pearson correlation test for examining the probable relationship between students' reading comprehension skill and their multiple intelligences.

Table 4.3 Results of Pearson Product Moment test

Intelligences		Females	Males	Total
Musical	r	.02	.14	.18
	p-value	.84	.17	.10
Bodily-kinesthetic	r	.09	.16	.08
	p-value	.44	.12	.13
Logical-mathematical	r	.04	.12	.09
	p-value	.72	.27	.24
Spatial	r	.10	.06	.08
	p-value	.37	.57	.31
Linguistic	r	-.01	.17	.10
	p-value	.84	.10	.20
Interpersonal	r	.28	.21	.23
	p-value	**.01**	**.04**	**.003**
Intrapersonal	r	.03	-.10	-.03
	p-value	.78	.35	.66
Naturalistic	r	.15	.23	.21
	p-value	.20	**.03**	**.008**
Multiple intelligences	r	.14	.20	.18
	***p*-value**	**.24**	**.056**	**.02**

As can be seen in the table, there is a weak but positive relationship between reading comprehension and interpersonal intelligence in male students (r= .21, *p*< .05), females students (r= .28, *p*< .05), and the total participants (r= .23, *p*< .05). Moreover, the table shows that there is a weak and positive relationship between reading skill and naturalistic intelligence in males (r= .23, *p*< .05) and in all the learners (r= .21, *p*< .05). Finally, Table 4.5 reveals a weak, positive relationship between reading comprehension skill and students' multiple intelligences as assessed through the MIDAS (r= .18, *p*< .05). Regarding the results of multiple regression analysis and using the regression model of 3.5%, the following predictive formula can be utilized for predicting reading comprehension score of medical students who took part in the present study based on their scores in the MIDAS: Reading comprehension score= 14.74+ .23 (MIDAS score)

Table 4.4 Predicting reading comprehension scores based on the scores obtained from MIDAS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.186[a]	.035	.028	6.95

a. Predictors: (Constant), total sum

Table- 4.5 Results of multiple regression analysis

Model	Unstandardized Coefficients [a]		Standardized Coefficients		
1 (Constant)	B	Std. Error	Beta	t	Sig.
total sum	14.741	3.514		4.195	.000
	.023	.010	.186	2.354	.020

a. Dependent Variable: Skill_ reading

Table -4.6 indicates that we can predict reading score of learners from the scores obtained from different types of intelligence in the MIDAS with the use of regression model of 13.37%. *Table -4.7* exhibits those types of intelligences which can act as predictors of students' reading comprehension scores. As can be seen in the table, there are two types of intelligences, namely interpersonal (sig= .00, *p*< .05) and intrapersonal intelligence (sig= .01, *p*< .05) which can be considered as predictors for the reading comprehension skill of the participants of this study.

Table 4.7 Results of multiple regression analysis

	Unstandardized Coefficients [a]		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1 (Constant)	15.48	3.720		4.163	.000
musical	.035	.063	.051	.552	.581
Bodily-kinesthetic	.032	.085	.037	.381	.704
Logical-mathematical	.032	.066	.049	.485	.628
spatial	-.121	.074	-.187	-1.629	.105
linguistic	-.030	.067	-.053	-.447	.655
interpersonal	.259	.080	.406	3.236	.001
intrapersonal	-.270	.113	-.235	-2.383	.018
naturalistic	.108	.058	.160	1.860	.065

a. Dependent Variable: Skill_ reading

Table -4.7 indicates that the best predictor chosen by the regression test is interpersonal intelligence as the beta coefficient for this type of intelligence is .40. Accordingly, the predictive formula for the reading comprehension score of the learners is as follows:

Reading comprehension score= 15.48+.25 (interpersonal intelligence) - .27 (intrapersonal intelligence)

To this end, 157 medical students studying at Guilan University of Medical Sciences were chosen and they were given a reading comprehension test and the MIDAS questionnaire which addressed eight types of intelligences based on the Multiple Intelligence Theory of *Gardner* (8). The intelligences included linguistic, spatial, logical-mathematical, interpersonal, intrapersonal, bodily-kinesthetic, musical, and naturalistic intelligence. Regarding the first objective of the study and based on the results of the MIDAS questionnaire, the multiple intelligence profile of the participants was shown in Table- 4.1. In the present study the dominant intelligence was found to be verbal-linguistic intelligence which was

shown to have the highest mean score in comparison with the other intelligences. Moreover, with respect to the second objective of the study and using Pearson correlation test it was found that reading comprehension and multiple intelligences are related; however, the relationship is weak. Considering every single type of intelligence, the findings revealed that there is a positive relationship between interpersonal intelligence and the participants' reading comprehension skill. In addition, the findings of statistical analysis revealed a positive relationship between naturalistic intelligence and reading skill in male students and in all the participants of this study. Results of stepwise multiple regression analysis showed that by strengthening students' interpersonal and intrapersonal intelligences we can most probably expect improvement in their reading comprehension ability, as the *p*-value for these two intelligence types were less that our assumed alpha level ($p< .05$). Thus, based on the results of the present study, it can be claimed that improving male students' interpersonal and intrapersonal intelligences can have a positive effect on their reading comprehension ability. Furthermore, it was found that regarding female students, interpersonal intelligence can probably influence their reading comprehension skill, since this type of intelligence was shown as a predictor of their reading skill.

DISCUSSION

The findings of this study are contrary to what *Razmjoo* reported (Razmjoo, 2000). *Razmjoo* in his study in 2008, held that none of the multiple intelligences are predictive of language proficiency of Iranian EFL learners (Razmjoo, 2008). However, as in the studies of *Mahdavy* (Mahdavy, 2008), *Akbari and Hosseini* (1) who found that some of the intelligences can predict the language proficiency of Iranian EFL students, in the present study we found that some of the intelligences can be predictive of the reading comprehension ability of a group of Iranian EFL learners. For instance, *Mahdavy*found that scores on TOEFL and IELTS can be predicted with verbal-linguistic intelligence (Mahdavy, 2008). In the same way, *Akbari and Hosseini's*study revealed that verbal-linguistic intelligence can be considered an appropriate predictor of students' English language proficiency (Akbari, 2008). *McMahon et al* also reported that only mathematical intelligence correlates with the reading achievement of EFL learners.(20) Based on what was found in the literature on multiple intelligences and its relation to L2 learners' language proficiency, it can be argued that one reason for these varied findings might be due to differences in the sample.(20) In *McMahon et al* the participants were children; however, in the present study the participants were university students who are apparently different from children in their cognitive style. (20) Thus, with the incorporation of *Multiple Intelligences Theory* (MIT) in EFL classes, foreign language teachers can make the best use of cognitive differences in their students and develop suitable techniques of instruction and create curriculums which take specific features of the students into account. As indicated by *Richards and Rodgers*,"MI pedagogy focuses on the language classes as the setting for a series of educational support systems aimed at making the language learner a better designer of his/her own learning" (Richards, 2001). As *KhooeiOskooei and Salahshoor*, pointed out, differentiated instruction which is applied for teaching the reading skill often incorporates materials which are of high interest to the learners (KhooeiOskooei, 2012). However, a gateway to go beyond mere 'interest' is the kind of instruction which pays special attention to the learners' multiple intelligences. In fact, the main contribution of MIT is that, if the learners' strongest intelligence is used and improved, not only the reader's interest is considered, but this will promote and encourage more cognitive involvement on the part of the learner.

As mentioned earlier, in the present study it was found that the most dominant intelligence types in medical students who took part in the study are interpersonal and intrapersonal intelligences. Based on MIT, it can be argued that fostering group discussion or pair work or promoting individual thinking skills of the learners can be effective in improving their reading comprehension skill. In other words, by engaging the medical students in group activities we can take advantage of their interpersonal intelligence which in turn can positively influence their reading skill. Moreover, by devising activities which require contemplation on the part of the learners the intrapersonal intelligence of the learners is mostly activated which has shown to be positively related to their reading ability. Intrapersonal intelligence has its roots in the "emotional reactions to the material"(2). Thus, it can be postulated that choosing the kind of materials which are emotionally appealing to medical students can also nourish and involve their intrapersonal intelligence, and at the same time develop their reading proficiency.

Conclusion

Multiple intelligence theory is found effective in developing ESL/EFL learners' skills in different areas of language learning. A quick look at the literature on MIT and its applications proves this claim and demonstrates the usefulness of this theory. The present study was another attempt to investigate the role of MIT, as put forward by *Gardner*(8), in English language classes by examining the relationship between medical students' reading comprehension skill and their multiple intelligences. Descriptive statistics presented in *Table 4.1* specified the multiple intelligence profile of the medical students who completed the MIDAS questionnaire. The findings indicated that all the learners possess the intelligences addressed in the questionnaire, with linguistic (X=60.61), interpersonal (X=58.65), and logical-mathematical (X=53.07) intelligences gaining the highest means, respectively. Other intelligences including spatial(X=41.49), musical (X=37.89), bodily-kinesthetic (X=34.96), naturalistic (X=31.73), and intrapersonal (X=31.35) intelligences has shown the lowest mean score. Based on the results of step-wise multiple regression analysis, it was found that there is a positive relationship between medical students' MI profile and reading comprehension skill. However, this relationship was shown to be rather weak, in that the correlation coefficient was ($r= .18$, $p< .05$). Therefore, we are safe to reject the null hypothesis of the study and conclude that by taking multiple intelligences of medical students into account, we can expect improvement in their reading comprehension skill. The present study can have important implications for EFL teachers and students. First, as every student is intelligent identifying students' learning styles and intelligences and devising lessons which incorporate those intelligences when teaching reading can have a noticeable effect on students' achievement in the reading. In the Iranian EFL context, where emphasis is mostly on developing the learners' reading skill, teachers should gain benefit from the individual differences among students by identifying the students' MI profile. Secondly, implementing MIT can help teachers in manipulating learners' intelligence

types and it helps them to reach a wider group of students and pay more accurate attention to their characteristics and preferences.

Regarding the implications of the present study for EFL students, especially medical students whose MI profile was explored, it can be claimed that if learners become aware of their multiple intelligences and explore their inner potential, they can choose pedagogical means that best suit their cognitive style and thus assist them in their studies. The implications of the findings in this study can also relate to syllabus designers and curriculum planners, as they can plan lessons and instructional materials which address multiple intelligences in the learners and pave the way for the learners toward more efficient learning that fits their individual preferences and inclinations. Applying MIT can lessen the difficulties that students face in the classroom, since it addresses every learner's specific preferences and by focusing on their dominant intelligence type, this theory can motivate them in the classroom. By concentrating on multiple intelligences possessed by every student, MIT helps all the learners show their abilities and make the best use of them to cognitively develop. Further research needs to be conducted focusing on other language skills and their probable relation with MI. Moreover, this study only focused on a limited number of medical students studying in a single university; therefore, the findings cannot be generalized to all the medical students. Accordingly, further research is needed to replicate this study on a wider sample and seek the probable generalization of the findings to a more expanded population.

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