THE RELATIONSHIP BETWEEN MULTIPLE INTELLIGENCES AND WRITING SKILL OF MEDICAL STUDENTS IN IRAN

Rezvan Sajjadi Rad, Laleh Khojasteh, Reza Kafipour

Abstract. The problem which this research intended to resolve is that beside many differences between individuals' characteristics that might impact their language learning process, there's often a different neglected component which is “Intelligence”. Although there are several researches about the relationship between students’ multiple intelligence profile and their language learning ability, there is no coordination between the findings of these researches. In terms of writing skill; for example, some shows a significant relationship, some partial relationship and some a significant negative relationship between the two variables. To fill this gap, this research aims to explore the potential relationship between multiple intelligences and writing proficiency of Shiraz University Medical students. This study utilized a quantitative method and the instruments were MI questionnaire and IELTS writing rubric. 76 students form Shiraz Medical University participated in this study and the results showed that there is no significant relationship between participants' MI profile and their writing proficiency.

Keywords: Multiple intelligences, Writing proficiency, Writing ability, EFL learners, Medical students

Introduction

There is no doubt that ESL/EFL population has been increasing over the past decades. Hence, it is vital to understand the social settings and the cultural components of language learning if our end goal is our students' successful educational experiences ([1]; [2]). For this, it is strongly believed that active and independent learning should be emphasized [3] because our L2 learners have unique needs that call for individualized instructions that fulfill various learning styles and abilities ([4]; [5];[ 6]). In [7] the authors believe to reach to native-like language proficiency, L2 learners should have access to multiple learning experiences which again shows that the emphasis should be placed on our learners’ different learning styles accompanied by their different intelligences. When it comes to intelligences, Gardner's Multiple Intelligences Theory (hear after MIT) is the first thing that comes to mind.

In Gardner’s famous book “Frames of Mind", the main concept of his theory was the belief that all individuals are intelligent in more than one aspect. Gardner's belief was that individuals were born with diverse talents for each of the intelligences, which some of these intelligences are naturally stronger than the other intelligences. Based on Gardner’s Multiple Intelligences Theory (MIT) there are eight different Intelligences including: 1) Bodily/ Kinesthetic, 2) Musical, 3) Interpersonal, 4) Intrapersonal, 5) Logical/ Mathematical, 6) Naturalist, 7) Verbal/Linguistic, and 8) Visual/Spatial [8].

Gardner recommends the requirement for the wider sight of the human mind and of individual learning than what now exists. Gardner believes that instructors should attempt to reach all learners and improve student’s different intelligences. Furthermore, instructors have to use diversity of techniques in their teaching that supply diverse learning practices for learners [9]. Consequently Gardner founded the MIT on 3 base guidelines: (a) people are not really the same-individuals differences exist; (b) not all individuals possess the same types of minds; and (c) By considering these individual differences, education becomes more effective [10].
An enormous development in prior approaches regarding learning and teaching procedure was made by Gardner’s MIT. Consequently, teachers must be able to easily and accurately detect students’ intelligence level in order to understand how to apply different teaching methods which incorporate MI. In addition, students also must be able to easily recognize their own strengths in order to understand their own learning preferences specified by their intelligences. To this end, educators have examined the MIT as a potential method to modify futile teaching strategies [11], [12], [13], [14], and [15]. Alternatively, several instructors like [16] began to apply MI-Based instructions as approaches to triumph over the difficulties that they meet with their students as a result of the individual distinctions along with their learning styles.

Among various fields as the subjects of learning, language learning seems to be more significant, because except being a subject of learning, it is also a medium for further learning of any other subject and ranks language on the top of learning priorities to be focused on. In a better word, improving language learning is significant as it helps learners to be more successful in learning other subjects which are presented through a foreign language. In fact, through MIT, English as Foreign Language (EFL) teachers can establish a variety of settings that suggest learners a variety of ways to involve meaning and reinforce memory. It is also a teacher-friendly tool for lesson planning that cause language learning tasks to be more attractive and consequently, make satisfactory motivational conditions [17].

Despite the fact that all four language capabilities are significant in learning development, writing performance is the single ability that has the chance for being measured systematically. Furthermore, writing performance is an ability which is observable and its information is usually simply collectable. Moreover, writing performance is a talent which students have better control on it and also they have the chance of monitoring themselves and retaining their knowledge during their performance [18].

Considering writing as a mix of some distinct human capacities, Gardner suggests some valuable descriptions of what some of those may be. It is obvious that we cannot guarantee a good writing by increasing the amount of anything as well as the number of “intelligences”. According to [19], linguistic, the logical-mathematical, and the two personal intelligences, are four of Gardner's intelligences that are clearly related to writing. Also in their research, [20] emphasized that linguistic and interpersonal intelligences positively correlate with writing ability; Therefore by proving multiple intelligences’ positive relationship with students' writing skill, there can be a new tendency in language teaching, especially teaching writing in order to develop students’ writing skill by paying attention to students’ differences.

Developing writing skill is an ability which is provided with small consideration within Iranian contexts via educators and students [21]. They also discussed that, few amount of class period is usually allocated to acquire this talent. Students mainly do the writing tasks out of the class which they seek aid from additional places. Individuals can perfectly benefit from their personal possibilities in intelligences to get help during the process of writing, an effort the actual featuring of which will result in beneficial advantages.

In an attempt to verify the above statement, the present study focuses to explore the potential relationship between multiple intelligences and writing proficiency of Shiraz University Medical students. Based on the above explanations and in order to achieve this research’s goals, the following questions are presenting:

RQ1: Is there a significant relationship between MI types and students’ writing skill?
RQ2: Which types of MI are more effective in writing skill learning procedure?

Is there really a link between MI and writing skill?

During the past couple of decades, the relevant literature in language teaching has witnessed heated debates as to the role of MIs in language learning.
Among all the studies that are reviewed in the literature, there are some which reported negative relationship between MIT and writing performance of the students. One of these studies is the one which is conducted by [22] in order to explore the relationship between Iranian EFL students’ writing strategies at the revision stage of the process of writing with students’ interpersonal or intrapersonal intelligences. An analytic scoring rubric and MI questionnaire were used. The results showed that although there is a significant relationship between the participants’ writing revision strategies and their dominant MI profiles, there was no significant effect on the participants’ writing achievement.

Similarly, in their study [21] aimed at finding the relationship between MI and the writing ability of EFL learners. For this purpose, the body of female BA sophomores in TEFL at Urmia University (N=47), within the age range of 18-25, was given a close look using an intact group research design. The participants were given Armstrong’s MI questionnaire and the participants’ writing samples were also obtained using an IELTS writing task and were correlated with the scores on the MI questionnaire. The results showed that the components of MI did not have a significant relationship with the writing ability of the participants.

The strength of the relationship between language proficiency in English and the 9 types of intelligences was also investigated [23]. A 100-item language proficiency test and a 90-item MI questionnaire were used in his study. The participants included 278 male and female taking parts in the Ph.D. Entrance exam at Shiraz University. The outcomes were analyzed descriptively using central tendency measures (mean and standard deviation) and inferentially by using correlation, regression analysis and independent t-test. The results illustrated that there is no significant relationship between language proficiency and the combination of intelligences in general and the types of intelligences in particular. Moreover, none of the intelligence types was identified as the predictor for language proficiency. The results also showed no significant relationship between MIs and English language proficiency in the Iranian context.

In the reviewed literature, there are also studies that reported partial relationship between MI and students’ writing proficiency. One of them is the author in [24] who conducted a research to investigate whether there is any relationship between students’ multiple-intelligence profiles and their writing products or not. The subjects of her study were EFL Iranian undergraduate students (aged 19-27 years) who studied English literature and translation. The students’ average scores on three essays and McKenzie’s MI Inventory were the instruments of data collection. In predicting the writing scores of the students it was found that, kinesthetic, existential and interpersonal intelligences made the greatest contributions.

In [25] authors investigated the relationship between particular intelligence types and students’ success in grammar, listening and writing in English as a foreign language and the relationship between parental education and students’ types of intelligences. Preparatory class students (n=144) attending Erciyes University’s School of Foreign Languages participated in the study and the data was collected through the MI 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. Analysis of the data revealed low positive relationship between writing scores and some types of intelligences.

The relationship between four types of intelligence (logical, interpersonal, verbal, and intrapersonal) and grammatical and writing accuracy of foreign language learners was investigated [26]. The participants were 190 male and female Iranian students at Takestan Azad University, Karaj Azad University, and Imam Khomeini International University in Qazvin. A 40-item MI questionnaire, a 35-item Michigan grammar test, and a writing test were administered to the participants. Data were analyzed through multiple regression analyses. Results indicated that both intrapersonal and interpersonal intelligences were predictors of grammar accuracy and intrapersonal intelligence made a statistically significant contribution to predicting learners’ writing accuracy.

In contrast with the above mentioned studies, the outcomes of some of the other researches supported Gardner’s MI theory and the significant effect of MIs on writing skill of language learners. The researchers in [27] studied how by means of multiple-intelligence strategies and instructions, they can
develop the writing ability of learners. The five MIs related to writing were taught to the experimental group including verbal-linguistic, logical-mathematical, visual-spatial, interpersonal and intrapersonal. Students were similarly instructed the five strategies of multiple-intelligence associated with writing which was brainstorming, topic-word association, rank ordering, mind-mapping, and meta-cognition. Two compositions were given to both the experimental and the control groups: a narrative and an expository. When they passed two months of instructing, a posttest was given to them to understand if there was any significant difference in the writing ability of students. The results show that substantial development was seen in the overall writing ability of students and also in the six traits analyzed after two months of instructing.

The researchers in [20] explored if there is any relationship between L2 learners’ MI and their writing performance. Thirty three female homogeneous Persian speaking EFL learners participated in this research. By applying correlation analysis of the results, it was illustrated that there was a statistically significant relationship between participants’ MI and their performance on writing. Furthermore, it was revealed that the linguistic intelligence is the best interpreter of writing performance which this was an outcome of regression analysis.

In another study the MIs and self-efficacy profiles and their relationship to the achievement of EFL language skills and aspects of 85 Saudi female third intermediate students were investigated [28]. Three instruments were used: (a) the MI Inventory, (b) the Self-efficacy Scale and (3) A Language Achievement Test. The results indicated that there were no significant correlations between different MI types and achievement in different language skills and aspects.

Method

Participants

This study applied purposive sampling and accordingly 76 students (33 female and 43 male) were chosen from three writing classes to participate in this study. This decision was made because we had to choose prospective participants that had the required experience needed. According to [29] when researchers select purposive samples, it is crucial for them to make “ensure that certain types of individuals or persons displaying certain attributes are included in the study”. For example, in this particular research, we needed the participants who were all medical students (and not for example, dentistry and nursing students) pursuing their medical degree under Medical University of Shiraz, Iran. The most important of all, the participants had to be the students of writing classes whose instructor was the same person. The reason of choosing the students of these three classrooms was that all of them had the same instructor with the same teaching style; therefore, this prevented us to get different outcomes that might have been resulted from the role of various delivery styles [30].

Instruments

In this research two instruments were used: MI questionnaire and a holistic rating scale.

Multiple Intelligence Inventory (MII) originally devised by Ivano in 1998, was selected for this study. The MII of this research consists of 80 questions, and these questions are divided into 8 sections, roughly paralleling the 8 different intelligence scales outlined by Gardner. These included verbal, logical, visual, kinesthetic, musical, interpersonal, intrapersonal and Naturalist intelligences. Since participants were not fluent in English, the English version of this questionnaire was not applicable for our participants, so we used back-translation method to raise the validity and reliability of this questionnaire when it is translated to Persian.

In the other stage of this study, a writing exam based on IELTS rubric examination style was administered. By performing this exam, participants' writing samples were obtained using an IELTS writing task and they were correlated with the scores on the MI questionnaire, so another instrument that was used in this study was the IELTS writing rubric.
Procedures

After doing the pilot study in Kish University international branch of SUMS and modification of the questionnaire, the revised and modified questionnaire attached with writing exam papers were delivered to the students at the end of the semester.

While students were joining classes at their university, the survey was administered to them. A description of the research, an approximation of the required time for taking the survey and a guarantee relates to the confidentiality of participants’ responses was delivered to each student. The questionnaire begins with a section devoted to demographic variables including details about age, gender, and educational level. At the top of each questionnaire a code box was designed containing a 3 digits number starting from number 101 to 176. A similar code box was also designed at the top of all writing papers containing the same series of numbers. These similar numbers provided in order to enable us to match the results of questionnaires with IELTS writing exam papers and this coding method was chosen to fulfill the anonymity of participants. Each participant was first given the MI questionnaire and after they completed the questionnaires, they had a rest for about 10 minutes and then they started the writing exam. Both male and female students from different culture and socioeconomic backgrounds contributed in this research. Each questionnaire took respondents approximately ten to fifteen minutes to complete and the maximum time for writing exam was 90 minutes which both of them were administered in the exam hall.

Data Analysis

Having collected the data and in the stage of data analysis, we applied correlation analysis (i.e., Pearson product moment correlation) to attain the answers to the research question 1 (RQ1) and to assess the relationship between the students writing and different intelligences. Furthermore, to respond the research question 2 (RQ2) we applied step-wise multiple regressions, that show MI contribution to writing and which kind of MI is better predictor of writing and also to investigate the correlation between students writing skill and any MI’s, the researchers marked the students’ writing essays based on 0-9 IELTS band score. Three of us marked students’ papers to guarantee the reliability of the results taken through writing exam, an Inter-rater reliability test was applied by the researchers. The results of inter-rater reliability showed that overall agreement between scores given by raters was 0.82 which is absolutely acceptable. Therefore, the average of three scores was used as the final score of writing for each participant.

Results and Discussion

As it can be seen in Table 1, all regression coefficients between all domains with writing skills are very poor and close to zero. P-value column also indicates that none of the domains have any significant relationship with writing skills because the values of all P-values are above 0.05.

Table 1. Regression Coefficient of MIs with Writing Skill

<table>
<thead>
<tr>
<th>The 8 MIs</th>
<th>regression coefficient</th>
<th>Standard error of regression coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>verbal/Linguistic</td>
<td>−0.036</td>
<td>0.084</td>
<td>0.67</td>
</tr>
<tr>
<td>Logical/Mathematical</td>
<td>−0.055</td>
<td>0.066</td>
<td>0.40</td>
</tr>
<tr>
<td>Visual/Spatial</td>
<td>+0.116</td>
<td>0.083</td>
<td>0.16</td>
</tr>
<tr>
<td>Bodily/Kinesthetic</td>
<td>−0.105</td>
<td>0.082</td>
<td>0.20</td>
</tr>
<tr>
<td>Musical/Rhythmic</td>
<td>+0.136</td>
<td>0.089</td>
<td>0.13</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>+0.086</td>
<td>0.083</td>
<td>0.30</td>
</tr>
</tbody>
</table>
Intrapersonal | −0.054 | 0.088 | 0.54
Naturalist  | −0.114 | 0.089 | 0.20

Based on our findings, the result of the first and second research questions showed no significant relationship between medical students’ MI profile and their writing proficiency. This result is in line with the result of another study conducted by [23] which reported that there is not a significant relationship between language proficiency and the combination of intelligences in general and the types of intelligences in particular among 278 male and female Iranians taking part in the Ph.D. Entrance exam at Shiraz University. Likewise, this result is also supported by another study conducted by [25] at Erciyes University’s School of Foreign Languages in Turkey.

In the same vein, [21] also performed a similar research in Urmia University in order to investigate the possibility of any relationship between different categories of MI and writing ability of participants. Their result, too, supports the finding of this study which indicated that the components of MI did not have a significant relationship with the writing ability of the participants. Similarly, in one of the most recent studies and in agreement with the findings of this study, [28] investigated the relationship between MIs and self-efficacy profiles that characterize Saudi Arabia female (gifted/regular) third intermediate grade students and their correlations to the achievement in EFL in general, and specific language skills in particular. As for regular students, the results indicated that there were no significant correlations between different MI types and achievement in different language skills and aspects.

In consistent with the results of current research, [31] conducted a study on 50 students of Sharif University to investigate the relationship between MIs and their language achievement scores. Finding no relationship between the two variables, they argued that achievement scores in foreign language learning may be the function of a myriad of factors other than intelligence types. The results of another study conducted by [32] also revealed no significant relationship between overall MI and the quality of male intermediate learners’ writing. [33] also performed a study among 30 advanced IELTS students from two English language teaching institutes in Boushehr and the results of final analysis revealed the fact that there is no relationship between Emotional Intelligence (EI) (as a part of MI) and writing and between EI components and Writing. In the same line with mentioned studies, another study conducted by [34] illustrated that there exists a very small positive correlation between the two variables (r=.05, n=88), indicating nearly no significant relationship existing between learners’ level of L2 lexical (Vocabulary) knowledge (which is one of the writing evaluation criteria) and their MIs scores.

Similar results were obtained by [35], [36], [37], and finally [38] which showed no significant or weak relationship between MIs and English proficiency of participants.

However, in contrast with the findings of this study, some researches showed significant relationship between MI and writing or language learning such as [39] who investigated the existence of any possible relationship between Iranian intermediate EFL learners’ MI and their performance on information-gap type of writing task. Based on Pearson Product-Moment Correlation analysis, the results of their study indicate that there is a statistically significant and positive relationship between the participants’ performance on information-gap writing task and linguistic, interpersonal and intrapersonal intelligences.

At the same line another research which was performed by [27] studied how by means of multiple-intelligence strategies and instructions, they can develop the writing ability of learners. The final results of their study showed that substantial development was seen in the overall writing ability of students and also in the six traits analyzed after two months of instructing. In one of the latest researches dedicated to explore the relationship between L2 learners’ MI and their writing performance, [20] illustrated that there was a statistically significant relationship between participants’ MI and their performance on writing.

In conjunction with the first research question of the current study, the second research question was aimed to find out that which type/s of MIs is/are more effective in writing skill learning process.
Besides showing no significant relationship between participants’ writing performance and their MI profile, the outcomes of the data analysis showed that among 8 intelligences which have been studied, none of them can be considered as less or more effective in writing skill learning procedure because the correlation coefficients between these variables and participants writing task scores were totally weak and statistically not meaningful.

**Conclusion**

In conclusion, based on the findings of the study, it is revealed that there is no significant relationship between the score of writing and any of the MIs. Similarly, the results of analysis indicated that there is no significant difference between MIs in the case of effectiveness toward students writing performance.

Accordingly, the results of current study shows that Gardner’s MI theory could not considered as a comprehensive framework to analysis the relationship of human intelligence and learning process in general and language learning in particular.

However, we think that it is better not to generalize the results to all the students in Iran or elsewhere. But in the condition that the results be repeated in other circumstances, these results might affect those curriculums which are designed based on multiple intelligences. In a better word; although we might conclude that if study planners rely on Multiple Intelligence as the only theoretical infrastructure of their plans, it cannot guarantee the improvement in proficiency of students’ language learning. But maybe if the planners don’t rely just on Multiple Intelligence as the only theoretical infrastructure and consider other options as a theoretical infrastructure, the results may be different and there may be a relationship and therefore, using multiple intelligences may affect the writing skill of the students. In the current study we attempted to investigate any type of relationship between multiple intelligence and participants writing proficiency but none of the other potential factors which might affect this relationship has been considered. It means that in a null situation, this study could not find any of the correlations that revealed through some of the similar researches. The different results of similar researches should take our attention to the other affective elements which have not been taken into account during the research progress. In the other word, there might be some other aspects (e.g., Gender, Age, Context, Background knowledge, Level of proficiency and so on.) of the issue to be considering not only during similar researches but also in the planning stage of any curriculum.

**References**


Authors

Rezvan Sajjadi Rad, Islamic Azad University, Fars Science and Research Branch, Iran, Oranoos1367@yahoo.com

Laleh Khojasteh (corresponding author), Shiraz University of medical Sciences, English department, Iran, Khojasteh_l@sums.ac.ir

Reza Kafipour, Shiraz University of medical Sciences, English department, Iran, kafipour@sums.ac.ir