The Relationship Between Test Anxiety, Multiple Intelligence (MI), and Iranian EFL Learners' Writing Test Performance

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ABSTRACT

The present study attempted to explore empirical evidence to see if there is an association between test anxiety, multiple intelligence (MI) and EFL learners' writing test performance. To this end, a Multiple Intelligence Checklist, a Test Anxiety Scale, and one IELTS writing task were given to 40 upper-intermediate participants from three classes of two language institutes. The results revealed that test anxiety and learners' writing performance had a negative but not statistically strong correlation. Further, there was a significant correlation (sig= 0.039 < 0.05) between linguistic intelligence and writing test performance. Accordingly, language teachers should regard test fairness by helping learners who have low linguistic intelligence.

Introduction

Research in language testing has indicated that language ability is not the only thing that affects test takers' performance on a language test. Factors such as motivation, anxiety, ambiguity tolerance, etc. can affect test takers' performance too (Bachman, 1990, Skehan, 1989, 1998; Tavakoli, 2009). These factors can affect the validity of a test and cause measurement errors. Thus, one of the major concerns in the design and development of language tests is to minimize the effects of these factors that are not part of the language ability (Bachman and Palmer, 1996; Messick, 1989, 1996). As Messick (1996) posits it, these factors are the potential sources of test bias that can make the obtained scores unrepresentative of the underlying ability that a language test wants to measure, and put the whole testing process at stake (Takala & Kaftandjieva, 2000; Messick, 1996).

Test Anxiety

One of these personal traits that influence testees' performance is test anxiety. Almost all students have experienced some level of anxiety during an exam which have influenced their test performance, and it has eventually become a problem. Although some students have sufficient skills and knowledge to answer the questions in a test, their test anxiety prevents them from performing adequately and demonstrating their actual knowledge perfectly. It can be caused by some factors such as test format, length, testing environment, time limit and clarity of test instructions (Young, 1999).

Test anxiety can cause cognitive interference while preparing for examination, taking examination or both. On the one hand, it may lead to poor understanding during the preparation for an exam. On the other hand, test anxiety decreases testees' attention and increases the number of errors during the test (Ohata, 2005; Cassady & Johnson, 2002; Sarason, 1980, 1986). However, Chapell et al. (2005) believe that test anxiety might be a good thing for some students since it can motivate them to study longer time and pay more attention to the questions of the exam.

Multiple Intelligence

Multiple Intelligence (MI) theory was proposed by Howard Gardner in the early 1980s in which he suggested that "the traditional notion of intelligence as measured by I.Q testing is far too limited, and there are not just two ways to be intelligent, but many ways"(Gardner,1983,p.51). According to MI theory, individuals are different in their different aspects of intelligence. Besides, this distinction can lead to variations in people's performance on different tasks. Gardner originally identified seven such faculties, which he labelled as "intelligences": Musical Intelligence, Bodily-Kinesthetic Intelligence, Logical-Mathematical Intelligence, Linguistic Intelligence, Spatial Intelligence, Interpersonal Intelligence and Intrapersonal Intelligence. Recently, he added the eighth one to the list: the Naturalist Intelligence (Visser et al., 2006).

In the study of Loori (2005), the differences in intelligences preferences of ESL male and female students are investigated. The results of this study showed that "there were significant differences between males' and females' preferences of intelligences. Males preferred learning activities involving logical and mathematical intelligences. Whereas females preferred learning activities involving intrapersonal intelligence" (p. 77). In another study conducted by Mahdavy (2008), he found that linguistic intelligence significantly contributes to listening proficiency and Richards and Rodgers (2001) believe that musical intelligence contributes to English pronunciation. Razmjoo (2008), however, found no significant relationship between language success and the types of intelligences in particular. Furthermore, Eng and Mustapha (2010) discovered that MI-based strategies and instructions improve students' overall writing ability in experimental group after two months of training.

Writing Test

On the one hand, Writing is certainly an important communication skill in the process of second language (L2) learning. It can be both a support skill and a cognitive activity. Short tasks designed to develop spelling, grammar, and cohesion skills are vital elements to classroom activity. However, it is

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important for foreign language teachers to appropriately distinguish these activities from those in which writing is a cognitive activity: i.e. drafting a composition that requires more in depth thinking. Both aspects of writing are important in the typical language class, and both can serve to reinforce the other (Chastain, 1976).

On the other hand, writing assessment is a significant part of L2 learning and it is used for a variety of purposes, both inside and outside of the classroom such as providing assistance to students, awarding a grade, placing students in appropriate courses, allowing them to exit a course or sequence of courses, certifying proficiency, and evaluating programs. In spite of the importance and practicality of writing for language learners, students "believe that writing is a natural gift rather than a learned skill" (Langan, 2000:12). However, writing skill can be acquired only through practice. It is, like dance and sport, an activity that could be improved through practice (Andrews, 1999), and through "the exposure to written texts in a natural process of communication rather than grammatical and rhetorical rules on writing" (Leki, 1992: 17).

In essence, writing test is one of the problematic tests for language learners as it is the most difficult of all the language abilities to acquire for them. Yan and Horwitz (2008) found evidence of possible causal effects of FL anxiety on FL performance, but the focus was speaking. Writing, on the other hand, is not well studied in this field. Thus, it seems that more investigation is required for finding different reasons of testees' poor performance on writing test. Among various factors that affect test takers' performance on writing test, the present study regards the effects of anxiety and MI on test performance. In sum, this research tries to provide empirical evidence to see whether there is a relation between test anxiety, type of intellectual abilities of test takers and their scores on writing test or not.

Purpose of the Study

It seems that there are more significant relationships between some intelligences such as linguistic intelligence and writing performance. For instance, an individual with high linguistic intelligence should have better writing performance, at a high probability, since s/he can "use words effectively both orally and in writing. Particularly, s/he is sensitive to the meaning, order of words and functions of language." (Gardner. H. 2006. 1991). This individual would have both required intelligence and in effect lower test anxiety in order to have a better performance on writing test. Correspondingly, these possessions will assist the test taker to demonstrate his/her actual knowledge and a better performance on test. In sum, to close the gaps and more clearly investigate the causal directions of test anxiety, MI and writing performance, the purpose of this study is to seek answers to the following questions:

1)Is there any significant relationship between test anxiety and testees' performance on writing tests?
2)Is there any significant relationship between the type of intelligence and testees' performance on writing tests?

Methodology
Participants

The participants of this study were 40 English learners from Gorgan, Iran and their L1 was Persian. The subjects were advanced students in Iran language Institute (ILI) and Iran Language House (ILH) within 14 to 29 years old. More than half of them were females (i.e. 62.5 %) and the others were males (i.e. 37.5 %). The sample of this study was employed from these two language institutes.

Instruments

Multiple Intelligence Checklist, adopted from *7 kinds of smart: Identifying and Developing Your Multiple Intelligences* by Thomas Armstrong (1993) including 80 statements, a Test Anxiety Scale adapted from Sarason's (1984) containing 40 Likert scale items, and one IELTS writing task, adopted from *English for Exams* by Anneli Williams, were used in this research. The level of tests were appropriate for upper-intermediate students.

Procedure, data collection and analysis

Primarily, 40 subjects who had the same level of proficiency were chosen to establish the homogeneity of the participants. Then, in order to identify the participants' various intelligences, the Multiple Intelligence Checklist was administered by the researcher. There were no right or wrong responses and the participants were asked to check any items that seemed to apply to them. After that, Sarason's (1984) Test Anxiety Scale was administered to measure participants' degree of test-taking anxiety. Finally, the writing test (a sample task 2 of IELTS) was administered. For writing test, three experienced raters were recruited to rate the students' performance considering the categories for writing evaluation adopted from (J. D. Brown, 1991, pp. 42-46). The scorers were all experienced English teachers and were aware of the mentioned scoring procedures. To obtain inter-reliability, an average of the three raters' scores was used to arrive at the final score. To analyze the data and to get statistical calculations, the SPSS 20 was employed in the present study.

Results

A Pearson product-moment correlation coefficient was computed to assess the relationship between test anxiety and writing test performance. According to table 1, there is a negative correlation between the two variables [r=-0.071, n=40, p=0.662] which is not statistically significant. That is to say, an increase or decrease in one of these two variables does not significantly relate to an increase or decrease in the other one.

Table 1. Correlation between test anxiety score and writing test performance

		TAS	WTP
Test Anxiety Score (TAS)	Pearson Correlation	1	-.071
	Sig. (2-tailed)		.662
	N	40	40
Writing Test Performance (WTP)	Pearson Correlation	-.071	1
	Sig. (2-tailed)	.662	
	N	40	40

After analyzing the correlations between the 8 types of intelligence and the writing performance, it was found that two of them, i.e. logical mathematical [r= 0154, n=40, p=0.344] and natural intelligence [r=0.172, n=39, p=0.296], had positive but not strong relationship. As indicated in table 2, some intelligences such as spatial, bodily-kinesthetic, musical, interpersonal, and intrapersonal had a negative but not statistically significant correlation with writing performance. Interestingly, the results of the present study also revealed that the linguistic intelligence had a negative correlation [r=-0.296, n=40, p=0.064] with writing performance. Although this level of correlation is not strongly correlated, there is a significant correlation (sig= 0.039 < 0.05) between linguistic intelligence and writing test performance.

Table 2. Correlation between types of multiple intelligence and writing performance

		Li	L-M	S	B-K	M	IER	IRA	N
WT	Pearson Correlation	-.328[*]	.154	-.014	-.128	-.280	-.146	-.156	.172
	Sig. (2-tailed)	.039	.344	.930	.439	.080	.369	.335	.296
	N	40	40	40	39	40	40	40	39

Note. WT= Writing Test; Li= Linguistic; L-M= Logical-Mathematical; S= Spatial; B-K=Bodily-Kinesthetic; IER= Interpersonal; IRA= Intrapersonal; N= Natural
*Correlation is significant at the 0.05 level (2-tailed).

Discussion and Conclusion

The present study empirically explored the relationship between test anxiety, MI, and writing test performance. One of the distinguishing features of this research is the investigation of writing test performance relationship with MI and test anxiety. As shown above, far too little attention has been paid to writing test performance in such an association with test anxiety and MI.

This study indicates that test anxiety correlates with learners' writing performance in a negative but not strong direction. Based on this finding, changes in test anxiety level are correlated with changes in writing score of students to an extent. As our Pearson's r is -0.071, we can conclude that the two variables are not strongly correlated. This finding provides consistent evidence with variant findings of past studies carried out about test anxiety regarding different aspects.

On the one hand, as test anxiety association with writing performance is negative, this finding supports results from other studies (Ohata, 2005; Cassady & Johnson, 2002; Sarason, 1980, 1986) that test anxiety decreases test takers' attention and accordingly lead to weak performance in a test. On the other hand, as the level of test anxiety and writing performance correlation is low in the present research, this finding is consistent with the study conducted by Chappell et all. (2005) that test anxiety might be a good thing for some individuals since it can make them study hard and pay more attention to the questions of the exam. Further, test anxiety would not interfere with learners' performance on writing test.

The results of this study also show that two of eight intelligences had positive correlations with writing performance, namely, logical-mathematical and natural intelligence, although they were not strongly correlated. This means that as one of these variables increases in value, the other variable also increases in value and vice versa. However, it should be considered that this relationship is not strong because the level of observed correlation is too low.

The present findings also indicate that there is a significant correlation (sig= 0.039 < 0.05) between linguistic intelligence and writing test performance. This means that when the amount of one of these variables increases, the other one may decrease to some extent. Although the correlation (r=-0.328) is lower than 0.30 which may appear to be weak, in educational research, as Hatch and Lazaraton (1991) suggest, even such a low correlation might be very important. Besides, an individual possessing the linguistic intelligence has the opportunity to use words effectively, orally and in writing. In addition, s/he is sensitive to sounds, meanings and functions of language. As a result, as these characteristics of this intelligence are related to language, it can assist the learner to have a better writing performance. Likewise, such a learner who has verbal skills can handle his/her test anxiety and obtain a good score. This finding from the present study agrees relatively well with that from Mahdavy's (2008) study in which he found that linguistic intelligence significantly contributes to the listening proficiency.

The correlation index of other five intelligences, i.e. spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, implied that there was not any strong association between these and writing performance. This result is relatively in line with earlier studies conducted by Razmjoo (2008) that found no significant relationship between language success and the types of intelligence in particular. However, it seems that there is a week

and statistically insignificant relationship between musical intelligence and writing performance [r=-0.280, n=40, p=0.080]. Amiryousefi and Tavakoli (2011) also found that that there is a relation between musical intelligence and writing. Individuals who have musical intelligence can hear patterns, recognize them and manipulate them. Besides, they can become good writers and composers.

In a nutshell, the results reveal that it is not necessarily true to expect a strong relationship between test anxiety and writing performance. Further, in order to prevent test bias, language teachers should provide learners who are not linguistically intelligent with more helpful tasks in order to improve their writing skills. In other words, this study highlights the teacher's role in finding various intelligences of students and then assisting them in improving writing skill by giving appropriate teaching strategies, tasks, and tactful feedback that considers every individual's types of intelligence.

Limitations and Suggestions for Further Research

This research had the following limitations. First, the current study was limited to advanced level of proficiency. Second, because of institutional limitations in the number of advanced language learners, the study employed a small sample size of 40 subjects from 3 classes of two language institutes in Gorgan, Iran. To this reason, it would be difficult to generalize the findings of this study to all EFL learners.

It is suggested that some researchers investigate the other levels such as elementary and intermediate in further studies. Besides, further research is suggested to replicate the present study with larger samples from other countries and L1 backgrounds to be able to generalize the findings to all EFL language learners.

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