

Multiple Intelligences and Foreign Language Learning: Possible Relationship

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Abstract The aim of this study was to investigate the relationship between EFL learners' multiple intelligences and their performance in reading, grammar and vocabulary. In total, 64 intermediate level female students from a high school in Tirana, Albania, participated in the study. Descriptive analysis of the data collected through conduct of Multiple Intelligences Inventory for Adults and administration of an English language proficiency test identified the learners' intelligence types; to explore possible relationships between the learners' achievements in reading, grammar, and vocabulary and specific intelligence types, the data were analyzed inferentially through correlation analysis. The findings revealed significant but negative relationships between students' success in grammar and bodily and interpersonal intelligences. Whereas no relationship was found between the participant learners' intelligence types and their success in reading, vocabulary had positive relationship with logical intelligence and negative relationship with bodily and interpersonal intelligences.

Keywords: *multiple intelligences, EFL learning, grammar, reading, vocabulary*

1. Theoretical background

Multiple intelligences theory (MI) was introduced in 1983 by Gardner as an alternative approach to the traditional view of mind with which an alternative approach to the traditional view of uniform school would also come along (Gardner, 2006). Gardner argues that this multi-dimensional view of mind recognizes various aspects of cognitive competences or skills of different forms, which he calls *intelligences*. Hence, unlike the traditional viewpoint of intelligence - an inborn faculty of humans - Gardner defines intelligence more comprehensively by *pluralizing* the concept and the teaching process. He proposes that in addition to the capacity to process information, intelligence comprises problem-solving skills, which enable the individual to pinpoint the most appropriate solution when approaching various situations (problems) in particular cultural settings. Whereas all these skills exist in each individual, their degree and the way they are combined differ; therefore, each individual possesses a unique profile of intelligences with their strengths and weaknesses (Gardner, 2011). An individual employs this profile when endeavoring to solve different problems and create new products (solutions), a process through transmission of knowledge, beliefs, and conclusions occurs.

For Gardner (2011), it is the educators' awareness of their learners' profiles of intelligences what forms the foundations of the core educational implications of the MI theory. Through this knowledge, educators who believe in MI theory's relevance individualize and pluralize throughout their teaching. While individualizing involves a teacher's awareness of his/her students' intelligence profiles and therefore teaching with methods and techniques that bring to light the learner's capacity, pluralizing entails presenting significant topics in diverse ways. In this way, through pluralizing, and particularly instructing in a variety of ways, more learners are reached and a more complete understanding of a topic is achieved.

Below there is a brief description of the seven intelligence types as introduced by Gardner in his book “Intelligence Reframed: Multiple Intelligences for the 21st Century” (1999).

Musical intelligence comprises the ability to perform, compose and appreciate musical patterns.

Linguistic intelligence entails the capacity to use both spoken and written language skilfully as well as the ability to learn other languages.

Spatial/visual intelligence involves the capacity to recognize and manipulate the patterns of wide space as well as the patterns of confined areas.

Bodily-kinaesthetic intelligence involves the potential of using one’s whole body or parts of the body to solve problems.

Logical-mathematical intelligence features the potential to analyze problems logically, carry out mathematical operations and investigate issues scientifically.

Interpersonal intelligence entails the capacity to understand other people’s, motivations, desires and intentions and, consequently, create effective relationships with them.

Intrapersonal intelligence denotes the ability to understand oneself, including one’s own desires, fears and capacities, and to use this knowledge effectively in order to manage one’s own life.

Naturalistic intelligence features an extensive knowledge of the living world and the capacity to recognize a variety of species of the environment as well as interact with them skilfully.

1.1 MI theory in practice

Since it came as an alternative approach to traditional teaching, MIT has been embraced by educators looking for what it offers: variety in teaching strategies and reaching more learners. What the MI theory suggests is not that a particular set of strategies is always successful with all learners; but that a particular strategy is likely to work better with a particular group than another (Armstrong, 2000). For example, while bodily oriented students may remain almost uninterested, when calculations or classifications are used as pedagogical tools, logically/mathematically inclined students tend to respond more enthusiastically. In addition, use of rhythms or chants to teach a new topic will reach more musically inclined students; however, it may not affect the spatially oriented. Therefore, an educator who teaches with the MIT in mind, acknowledging the learner differences, will utilize strategies that cater for all intelligence types, thus enabling students to employ their dominant or mostly developed intelligence.

In their book “*Multiple Intelligences: Success stories from six schools*”, the first one to examine educational programs which implemented MI, Campbell and Campbell (1999) write that after their conversations with educators, they reached the conclusion that one major reason for the MI theory’s appeal in school settings is that it “positively influences teacher beliefs about intelligence, instruction and student achievement” (p. 3). The MIT’s theoretical foundations provide enough knowledge not to let teachers, who struggle to understand and explain their daily experiences, come up with their own theories of mind. Its insights into the human mind and intelligence as well as its capacities and development affirm or even change teachers’ beliefs about how everyone is intellectually diverse and can learn in a variety of ways. Therefore, by identifying and acknowledging the diverse uses of the mind that MIT

suggests, educators tend to enrich their instructional options making them suitable for all learners. Furthermore, considering each individual as possessing a unique intelligence profile with its own strengths increases teachers' expectations and beliefs; consequently, reflecting their educators' expectations students' academic achievements tend to be higher.

1.2 MI theory in EFL learning contexts

Application of MI in EFL/ESL setting has been addressed by many researchers. Poole (2000) suggests that improvement of learning outcomes through modifications that involve all intelligences despite the used approach and encouragement of positive group interdependence in an environment that promotes collaborative work for construction of knowledge are two major implications of MI for second language learners. For Nicholson-Nelson (1998) MI helps teachers provide ways for students to improve their reading, writing and learning the English language by using intelligences other than the verbal-linguistic thus opening "doors and windows to the world of language" (p. 108). Richards and Rodgers (2001) also affirm that teachers' application of a wide range of teaching approaches and strategies provided by MI improves their teaching and students' learning of ESL.

Many studies conducted in the EFL context have mostly aimed to explore: a) the relationship between multiple intelligences and success in EFL learning and/or b) the effect of MI based strategies and techniques on students' achievements.

1.2.1 Multiple intelligences and success in EFL learning

Research investigating the relationship between multiple intelligences and learners' achievements in foreign language learning has revealed controversial results. While Razmjoo's (2008) study showed there is no relationship between any of the intelligences and the learners' achievements in EFL learning, Pour-Mohammadi, Abidin, and Ahmed (2012) demonstrated that some intelligence types correlate negatively with learners' proficiency in foreign language learning and some others do not correlate at all. Other research has explored this relationship by focusing on particular intelligences types' correlation with success in grammar, vocabulary and the basic language skills: listening, reading and writing. Results have revealed that success in *grammar* correlates negatively (Saricaoglu & Arikan, 2009; Hanafiyeh, 2013) with specific intelligence types (bodily-kinesthetic, spatial and intrapersonal) but positively with others (Panahi, 2011; Zarei & Mohseni, 2012), while success in *reading* correlates positively with logical and linguistic intelligences (Fahim, Bagherkazemi.M., & Alemi, 2010). A positive relationship has also been revealed to exist between *vocabulary* test scores and musical and linguistic intelligences (Khaghaninejad & Hosseini, 2014). In addition, the study conducted by Mohammadzadeh and Jafarigohar (2012) also revealed that musical, linguistic and interpersonal intelligences have a positive relationship with willingness to communicate.

In addition, while Mahdavy' study (2008) revealed the existence of some relationship between learners' linguistic intelligence and their performance in *listening*, Pandian's (2010) study results showed that the learners' success in listening is not affected by any particular intelligence types.

Results of research in the relationship between *writing* performance and intelligences are also controversial. While in some studies the learners' success in writing correlates positively (Marefat, 2007; Ahmadian & Hosseini, 2012; Hanafiyeh, 2013) with some of the intelligences, other results show that MI components do not have a significant relationship with the learners' writing ability (Sadeghi & Farzizadeh, 2012; Zarei & Mohseni, 2012).

Meanwhile, a more detailed research conducted by Alizadeh, Saeidi, and Tamjid (2014) revealed that multiple intelligences overall had a positive relationship with writing quality, but did not correlate with accuracy or complexity in writing. Moreover, further investigation of possible relationships between particular intelligences and quality, accuracy and complexity of writing revealed that complexity in writing correlated positively and negatively with interpersonal intelligence and naturalistic intelligence respectively. What's more, a positive relationship was found between intrapersonal intelligence and quality of writing.

Other research has also focused on the exploration of possible relationships between multiple intelligences and *learning strategies*. Results have demonstrated positive but low correlation (Akbari & Hosseini, 2008; Hajhashemi et al, 2013)

1.2.2 The effect of MI-based instruction on student achievement

Research conducted with the aim of exploring effects of techniques and strategies based on MI principles has focused on their impact on language proficiency in general and/or on specific skills in particular. Results have revealed that using MI-based strategies positively affects students' performance in class (Tahriri & Yamini, 2012) as well as their level of achievements not only in general (Haley, 2004; Soleimani, Moinnzadeh, Kassaian, & Ketabi, 2012; Bas & Beyhan, 2017) but also in specific sub-skills (Aderson, 1998; Condis, Parks, & Soldweddel, 2000; Soleimani, Moinnzadeh, Kassaian, & Ketabi, 2012).

Another researched element of MI-based instruction is the way it affects students' attitudes toward the EFL lesson. Although in some cases it has been studied purposefully (Pandian, 2010; Soleimani, Moinnzadeh, Kassaian, & Ketabi, 2012; Bas & Beyhan, 2017) while in others not as such (Haley, 2004) in both cases positive affective outcomes have been reported.

2 Methodology

2.1 Participants and instrumentation

This study aimed to explore the learners' dominant intelligent types, the relationship between the participant learners' success in grammar, reading, and vocabulary and their multiple intelligences in general and in particular. The sample population in this study consisted of all 10th year students in a private high school in Tirana, Albania, in which English is the medium of instruction for all life science subjects. The 65 participants were female EFL learners of 15 and 16 years of age whose level of English was considered intermediate as suggested by the textbooks (Headway Intermediate) being used at the time of the study.

Data on participants' intelligence types were collected through Gardner's (1993) MI Inventory for Adults with 10 Likert-type scale items for each of the intelligence types adding up to a total of 80 statements with response options ranging from 0 (lowest rating) to 4 (highest rating). Students' scores of reading, grammar and vocabulary were obtained by means of an English language proficiency test administered by the school's EFL teacher.

2.2 Data analysis and findings

The collected data were analyzed by means of SPSS 20.00 version. In order to measure the learners' intelligence types the data were analyzed descriptively as a result of which simple descriptive statistics were attained. The relationship between the participant learners' achievements in reading, grammar, and vocabulary in English as a foreign language and a

particular intelligence type was measured by analyzing the data inferentially through correlation analysis.

2.2.1 Learners' intelligence profiles and success in reading, grammar and vocabulary

As shown in Table 1, the descriptive analysis revealed that the participant learners' leading intelligence type was logical mathematical intelligence (Mean = 2.888). The other dominant types were interpersonal, spatial and bodily intelligence types with very close means of =2.673, =2.648 and =2.633 respectively, followed by musical intelligence and intrapersonal intelligence, which were only slightly less common (M=2.536) and (M=2.517) respectively. Linguistic intelligence and naturalistic intelligence were the least frequent intelligences with respective means of M=2.141 and M=2.122. Remarkably, the highest standard deviation (SD=.6895) was noticed among participants who had a tendency towards the least common intelligence, the naturalistic one, while the intelligence with the lowest variation among participants was spatial intelligence (SD=.4619).

Table 1: Participants' intelligence profiles

Intelligence Types	Mean	Standard Deviation
Logical	2.888	.5615
Interpersonal	2.673	.5867
Spatial	2.648	.4619
Bodily	2.633	.6154
Musical	2.536	.7482
Intrapersonal	2.517	.4783
Linguistic	2.141	.5098
Naturalistic	2.122	.6895

Another descriptive analysis was run to measure the participant learners' performance in each of the sections of the test as shown in Table 2. The mean scores for reading, grammar, and vocabulary were M=11.05, M=51.38, and M=18.73 respectively. With standard variation of 8.576, grammar was the section with the greatest variation among participants' success

Table 1 Students' success in reading, grammar, and vocabulary

	N	Minimum	Maximum	Mean	Standard Deviation
Reading	64	4	14	11.05	2.340
Grammar	64	30	64	51.38	8.576
Vocabulary	64	8	22	18.73	3.179

In order to investigate possible relationships between overall MI and students' achievements in reading, grammar and vocabulary Pearson correlation analysis was conducted. The results in Table 3 show no significant correlation between overall MI and students' success in reading ($r=-.004$, $p<.972$), grammar ($r=-.160$, $p<.206$), or vocabulary ($r=-.082$, $p<.520$).

2.2.2 Relationships between intelligences and success

Table 2 Relationship between overall MI and achievements in reading, grammar, and vocabulary

Overall MI	Reading	Grammar	Vocabulary
Pearson Correlation	-.004	-.160	-.082
Sig (2Tailed)	.972	.206	.520
N	64	64	64

Table 4 indicates the results of Pearson correlation analysis of intelligence types and participants' success in each section of the test. As shown in the table, there is no relationship between any intelligence type and students' reading scores. However, vocabulary scores show low positive correlation with logical intelligence ($r=.266$, $p<.034$), and low negative correlation with bodily intelligence ($r=-.288$, $p<.021$) and interpersonal intelligence ($r=-.310$, $p<.013$). While grammar scores have a low negative relationship with interpersonal intelligence ($r=-.314$, $p<.012$), and a higher negative relationship with bodily intelligence ($r=-.331$, $p<.007$)

Table 4 The relationship between MI components and success

	Logical	Linguistic	Spatial	Bodily	Musical	Inter.	Intra.	Naturalistic
Reading	.185	.109	-.039	-.211	-.074	-.186	.157	.097
Grammar	.190	-.014	-.013	-.331**	-.148	-.314*	.024	-.027
Vocabulary	.266*	-.001	-.037	-.288*	-.129	-.310*	.113	.037

* Correlation is significant at the .005 level (2-tailed)

** Correlation is significant at the .001 level (2-tailed)

3 Discussion

The primary aim of this study was to investigate EFL learners' multiple intelligences profiles and their relationship with achievements in reading, grammar and vocabulary. Data on participant learners' dominant intelligence types and their achievements in reading, grammar and vocabulary were obtained through conduct of MI Inventory for Adults and administration of an EFL test respectively. To identify the participants' intelligence types, descriptive analysis were utilized; relationships between participants' intelligence types and their achievements in reading, grammar and vocabulary were explored through inferential correlation analysis.

The results revealed that logical-mathematical intelligence was the participant learners' most dominant intelligence type, and interpersonal, spatial and bodily intelligence types were successively only slightly less common. While naturalistic intelligence was the least common intelligence type, the second least common intelligence was linguistic intelligence. These findings are in line with Saricaoglu and Arıkan (2009) and Hanefiyeh (2013) whose study also demonstrated that logical intelligence was the leading one among the participants and linguistic intelligence was the second least common intelligence. However, they differ in that the students in the present study appear the weakest in their natural intelligence. Although these findings correspond with Pour-Mohammadi, Abidin, and Ahmed (2012), who reported logical intelligence as one of the dominant intelligences, they are different in that intrapersonal intelligence is less common in the present study.

Pearson correlation analysis revealed no relationship between the participant learners' overall MI and their achievements in reading, grammar, or vocabulary. Although in line with

Sarıcaoglu and Arıkan' study results (2009), these findings contrast those revealed by Pour-Mohammadi, Abidin, and Ahmed (2012), in which some particular intelligences (linguistic, spatial, bodily, musical and naturalistic), although negatively, correlated significantly with English language proficiency.

Nonetheless, further investigation of possible relationships between particular intelligence types and success in grammar, reading and vocabulary demonstrated that reading scores did not correlate with any particular intelligence. These findings contrast Fahim, Bagherkazemi and Alemi (2010) whose study revealed a positive correlation between reading and linguistic and logical intelligence types. Meanwhile, the other two sections, grammar and vocabulary, had both positive and negative relationships with a few of the intelligences. More specifically, while grammar had a low negative correlation with interpersonal intelligence, its relationship with bodily intelligence was significantly negative. The present results correspond with findings of Hanafiyeh (2013) and Sarıcaoglu and Arıkan (2009), who, additionally, reported negative correlation of grammar with spatial intelligence. However, they are not compatible with Zarei and Mohseni's reports of positive relationships of grammar with intrapersonal and interpersonal intelligences (2012) as well as with Panahi's contradictory report of grammar's positive relationship with interpersonal intelligence and its negative relationship with musical intelligence (2011).

Meanwhile, the present study also revealed that vocabulary had low negative relationship with bodily and interpersonal intelligence types but it correlated positively with logical intelligence. Although positive correlation of vocabulary with particular intelligences has also been reported by Khaghaninejad and Hosseini (2014), in their study vocabulary had a positive relationship with linguistic intelligence

4 Conclusion

This study aimed to investigate possible relationships between EFL learners' achievements in grammar, reading, and vocabulary and their multiple intelligences. It also focused on further exploration of these areas/skills correlation with particular intelligence types. To this end, participants' dominant intelligences and their performance in each of the sections were measured through conduct of multiple intelligences Inventory for Adults and a language test.

Analysis of obtained data revealed that the participants' dominant intelligence types were logical and interpersonal intelligences while the least common were naturalistic and linguistic intelligences. Although overall MI does not affect learners' achievements in any of the researched aspects, both positive and negative relationships of particular intelligences with each of the above are possible. Moreover, while overall MI and particular intelligences do not affect success in reading, grammar achievements appear to have a low negative and significantly negative relationship with interpersonal intelligence and bodily intelligence respectively. In addition, results revealed that vocabulary has a more mixed relationship correlating positively with logical intelligence and negatively with bodily intelligence.

Despite limitations of time, participants, and instruments, this study's findings suggest EFL teachers use instruments to measure and identify their learners' intelligence profiles in order to enable catering for all intelligences. Considering the reported negative relationship of bodily intelligence and interpersonal intelligence with success in vocabulary and grammar, materials and strategies employed in grammar and vocabulary instruction should be paid attention to. Teachers ought to apply classroom activities that are appropriate for and benefit these learner styles in order to ensure their involvement and learning.

To conclude, research has revealed the existence of both positive and negative relationships between learners' intelligence types and their success in reading, grammar, vocabulary and other skills or areas, which were not the focus of the present study. Although sometimes controversial, findings suggest the necessity of further research in this relationship so that suggestions are more conclusive as well as educational implications for foreign language educators are more practical.

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