

## The Relationship between Multiple Intelligences and Reading Comprehension

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*Multiple Intelligences (MI) theory, developed by psychologist Howard Gardner (1983, 1999) suggests that there are at least nine ways that people have of perceiving and understanding the world. Gardner labels each of these ways a distinct "intelligence." This theory calls for assessment methods that take into account the diversity of intelligences, as well as selfassessment tools that help students understand their intelligences. With understanding of our multiple intelligences, teachers, school administrators, and parents can better understand individual differences (Christian, 1998; Larsen-Freeman, 2000; Armstrong, 1994; Thomson, 1993; Goleman, 1995; McKenzie, 2006). Implementing MI requires changing pedagogy and assessment techniques. Developing Multiple Intelligences Curriculum takes more time, but it is more effective and rewarding (Hoeer, 2000). The main concern of this study is to investigate whether there is any relationship between Multiple Intelligence and their reading ability. The participants were 122 Iranian undergraduate EFL (English as a foreign Language) students were selected from Islamic Azad University, Roudehen Branch. They were asked to take part in a validated IELTS test (2002) and fill out McKenzie's MI (2006) validated questionnaire, A "standardized multiple regression analysis" was run (Pallant, 2001). The finding showed that Kinesthetic and verbal intelligence make the greatest contribution toward predicting reading ability scores.*

**Key Words:** MI Theory, Reading, McKenzie's MI Questionnaire, Regression Analysis.

### Introduction

After years of research, Howard Gardner proposed a new theory and definition of intelligence in his 1983 book entitled *Frames of Mind: The Theory of Multiple Intelligences*. The basic question he sought to answer was: Is intelligence a single trait or various independent intellectual faculties? He is best known for his work in the area of Multiple Intelligences, which has been a career-long pursuit to understand and

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describe the construct of intelligence (Gardner, 1999a; Project Zero Website, 2000). There are many distinct abilities in human beings that result in many different pathways to learning and way of knowing which stand on their own two feet and act in a contrast even with a greater power (Mckenzie, 2005; Gardner, 1999). Viewing intelligence as multidimensional and understanding that all student have many different talents has the potential to change the discourse among a faculty. Teaching can change from something that is done by individual teachers to a collaborative, collegial endeavor in which the entire faculty works and grows together. This philosophy of education also enables teachers to change the dialogue with students. The human being is also more than his or her intellectual powers.

Perhaps more crucial than intelligence in the human firmament are motivation, personality, emotions, and will. If we are ever to obtain a comprehensive and fully integrated picture of human beings, we need to meld our insights about cognition with comparable insights in respect to these other aspects of the human being. Perhaps, indeed, a different view of human nature will result from this activity of synthesis. Obviously so grand an undertaking requires the highest degree of "distributed collaboration" among researchers, educators, and the general citizenry. Although the task is formidable, the advances made in understanding over the past decade give one some reason for optimism. The present paper reports the results, and discusses the findings, of the research done to investigate the relationship between learner's intelligences and reading comprehension tasks and its implications in authentic assessment.

The following sections outline the setting of the study.

Reading is Perceiving a written text in order to understand its contents. This can be done silently. The understanding that results is called reading comprehension. (Richards, & Schmidt, 2002). Reading assessment is used to determine what skills are being learned and what skills need to be strengthened. A teacher in a group or individual setting (p: 2). The purpose of assessment should be to obtain information about the skills and potentials of individuals, and provide useful feedback to the individuals and the community at large (Gardner, 1993). In the eras of the psychometric and behaviorist, it was generally believed that intelligence was a single entity that was inherited; and that human beings - initially a blank slate - could be trained to learn anything, provided that it was presented in an appropriate way (Spearman, 1994, cited in Williams et al, 2003). Nowadays an increasing number of researchers believe precisely; that there are multitude of intelligences, quite independent of each other; that each intelligence has

its own strengths and constraints (Gardner, 1983). Gardner defined intelligence as “the ability to find and solve problems, the ability to respond successfully to new situations and the capacity to learn from one’s past experiences” (p.21).

The theory of multiple intelligences was developed as a contribution of psychology and most especially, as a counterweight to the predominant notion of a single intelligence, that is measured by a single short-answer instrument. According to Gardner (1999), intelligence is more than IQ because a high IQ in the absence of productivity does not equate to intelligence. In this definition, “Intelligence is a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture” (p.34). Consequently, instead of intelligence being a single entity described psychometrically with an IQ score, Gardner’s definition views it as many things. He endeavored to define intelligence in a much broader way than psychometricians. To achieve this goal Gardner (1983; 1999a) formulated a list of nine intelligences which are briefly introduced below.

According to Gardner, everyone possesses seven distinct ‘intelligences’: verbal-linguistic, logical-mathematical, musical rhythmic, bodily-kinesthetic, visual-spatial, interpersonal, and intrapersonal. Recently, Gardner added two more, one of which is ‘naturalist’ intelligence. In Gardner’s view, naturalist intelligence denotes the human ability to discriminate among living things (plants, animals) as well as sensitivity to other features and patterns of the natural world (clouds, rock configurations). The other is ‘existential’ intelligence. Gardner stated that individuals who exhibit the proclivity to pose and ponder questions about life, death, and ultimate realities have this intelligence.

People who mostly think in words and are especially good at auditory skills use this type of intelligence more frequently, like poets, lawyers, and translators. Such people are also highly sensitive to word meaning, order, function, and sound.

People using this intelligence are skilled in inductive/deductive reasoning and logic, and exhibit great strength to solve problems. Their ability to make connections between pieces of information is outstanding. Think of a statistician, a computer programmer, or a mechanical engineer as examples.

People thinking in images and pictures use primarily this type of intelligence. These individuals, as designers, photographers, or sculptors, are sensitive to shape, space, and the relationship that exists between the elements.

Simply this is the ability to use the body skillfully to solve problems, and to handle objects adroitly. In terms of value, this intelligence is equal to the other types. Surgeons, trainers, and athletes offer a perfect example here.

Making or composing music, singing well, and appreciating music are the main characteristics of this type of intelligence. This intelligence is said to emerge earlier than other intelligences. People with strong musical intelligence, like composers and song writers especially like the rhythm and sounds of Language and poems.

People with this intelligence know their strengths and weaknesses. They have the capacity to be self-aware and in tune with their inner feelings, and thinking processes. One may think of leaders and writers coming under this camp.

If you use this intelligence very frequently, then you understand people, their behaviors, and motivations. You certainly work best with others through interaction. Group activities are indeed a source of energy to you. You can make a good teacher, counselor, or salesperson.

Those who are talented at observing, understanding, and organizing patterns found in nature best display this intelligence. Spending a great deal of time outdoors is quite enjoyable for this camp. A biologist or a veterinarian seems a good candidate possessing this intelligence.

Individuals who take particular interest in questioning the existence and meaning of life come under this intelligence type, referred to as the ninth or spiritual intelligence. These people see the big picture. Realizations are philosophers or psychologists.

There has been a prominent shift within the field of language learning and teaching over the last twenty years with a greater emphasis being put on learners and learning rather than on teacher and teaching. In parallel to this new shift of interest, learn or remember information has been the primacy concern of the researchers dealing with the area of foreign language learning.

Rather than functioning as a prescribed teaching method, curriculum, or technique, MI theory provides a way of understanding intelligence, which teachers can use as a guide for developing classroom activities that address multiple ways of learning and knowing (Christison, 1999). Teaching strategies informed by MI theory can transfer some control from teacher to learners by giving students choices in the ways they will learn and demonstrate their learning. By focusing on problem-solving activities that draw on multiple intelligences, these teaching strategies encourage learners to build on existing strengths and knowledge to learn new content and skills.

It may also mean the adult learners who have had little success in traditional classrooms where only linguistic and mathematics skills are valued may experience more success when other intelligences are tapped. Likewise, adult ESL learners from cultures where other intelligences such as interpersonal or musical are highly valued may find the MI classroom a productive learning environment. Understanding the nature of the human mind in all of its complexity is no mean feat, and a complete understanding may well exceed human investigative capacities. But understanding intelligence and even knowing how better to develop it does not suffice in itself.

Any human capacity can be used for ill as well as for good; and it is part of our responsibility as human beings living on a single troubled planet to try to use our competences, our intelligences, in morally responsible ways.

The two most widely used standardized tests of intelligence are the Wechsler Scales and the Stanford-Binet (1983). Both instruments are psychometrically sound, but Gardner (1993) believes that these tests measure only linguistic and logical intelligences, with a narrow focus within content in those domains. Furthermore, Gardner (1993) draws a distinction between testing and assessment. Assessment elicits information about an individual's abilities in the context of actual performance rather than by proxy using formal instruments in a decontextualized setting. The MI approach makes a unique contribution to the classroom experience because it broadens the definition of what constitutes "intelligence behavior" and who can be described as possessing "intelligence." It has long been recognized that teacher expectations of students is one of most powerful predictors and influences of student achievement (Rosenthal & Jacobson, 1968). For this reason, successful MI schools actively seek out the strengths of individual students in order to engage them in the curriculum (Campbell & Campbell, 1999) rather than merely sorting students into broad superficial IQ-based ability groups. The theory of multiple intelligences (MI) has been seized by so many educators (Gilman, 2001; Morgan & Pulker, 1996) because it has two powerful aspects. First, of course, is that when viewed through an MI lens, more children succeed. Put another way, when teachers offer different pathways for students to learn – rather than just filtering all information and learning through the "scholastic intelligences" – more students find success in school. MI isn't a panacea, and direct instruction and memorization of facts have their place in school. Intuitively, of course, most of us understand that children learn in different ways. After all, as adults, we still learn differently. Thus we see MI as a tool to help us reach more kids, as a way to become better educators. That attraction of MI inheres in its definition. The

second feature of MI, though, one which may not be as obvious, is that using MI transforms the role of the teacher. In traditional schools, teachers typically rely on text books and other mandated curriculum materials. In these situations, the name of the game is often scoring well on standardized tests, period. Naturally, then, materials are purchased which prepare students for the tests; the closer the match between the curriculum and what is tested, the "better" the curriculum. Aside from the losses to students – which are considerable – this approach also takes a heavy toll on teachers.

### **Aims of the Study**

Understanding the nature of the human mind in all of its complexity is no mean feat, and a complete understanding may well exceed human investigative capacities. But understanding intelligence-and even knowing how better to develop it-does not suffice in itself. Any human capacity can be used for ill as well as for good; and it is part of our responsibility as human beings living on a single troubled planet to try to use our competences, our intelligences, in morally responsible ways. This assignment cannot fall exclusively on the shoulders of researchers; nor can we simply afford to pass this responsibility on to other oftentimes as educators, we ask ourselves how we can really tell if students are grasping the content. Do they really understand? The ideas of Howard Gardner and the message provided by an ancient Chinese proverb have been our guides in designing curriculum and assessments that engage learners. Constructing learning experiences that are based on the multiple intelligences provides all students with the opportunity to be successful. When it comes to assessment of that learning we use the same concept in designing authentic situations we have called learning celebrations.

A paper and pencil test does not touch true understanding. Unfortunately, it has become the standard way for students to show their knowledge. To demonstrate understanding we feel learners need to have choices so they can show evidence of their learning through the intelligence of their choice. To be a useful assessment, that learning should be applied in a setting that demonstrates genuine understanding.

We have discovered that some of the most meaningful moments in teaching and learning have occurred during these celebrations. When students have multiple choices in ways to demonstrate their knowledge, the evidence of their learning is more accurate. We wanted the students to actually become the experts through the learning process. This assessment isn't just a fancy term for a presentation at the end of a unit. To actually engage in an authentic celebration is to witness a true display of student understanding

.The Purpose of this study is to determine the relationship between reading ability and undergraduate English major students' MI profiles. Accordingly the following question is raised:

Is there any relationship between English major undergraduate Students' MI profiles and their reading ability?

In order to find answer to the above mentioned research question empirically, the following null hypothesis promulgated:

There is no relationship between undergraduate English major students' MI profiles and their reading ability.

## **METHOD**

The purpose of this study was to investigate the relationship between reading ability and undergraduate English major students' MI profiles.

### **Participants**

150 students of Islamic Azad University, Roudehen Branch were selected. Since the participants of this study were all senior students from English department and all busy. Many of them could not participate in all the tests. Hence, the total number of participants decreases to 122. They were all adults between 20 to 30 years old participating in Reading classes.

### **Instrumentation**

To determine the reading ability of students a validated IELTS test(2002) was used and to identify the intelligence profile of the participants, McKenzie's (2006) questionnaire was used too. The questionnaire presents 90 statements related to each of the nine Intelligences proposed by Gardner (1999) . Each student was required to complete the questionnaire by placing a number from 0 to 1 next to each statement as they felt accurately described them. 1 shows that it corresponds to student and 0 shows that it is not. To give the reader the feeling of the questionnaire, a validated sample of nine statements corresponding to the nine is available at <http://surfaquarium.com/MI/MIInvent.htm>.

### **Procedures**

To collect the data required in this study, the following steps were taken. In the first step, 122 students of Islamic Azad University, Roudehen Branch were selected. Then a validated IELTS test (2002) was used as a main instrument for testing students reading ability. Then McKenzie's (2006) questionnaire was used to identify students' intelligence profiles.

### Discussions and Results

According to the number of statements ticked in each category, it is possible to produce an initial intelligence profile for each student and of course an overall view of the differences between the students. The maximum score in each section amount to 100 and the minimum is 0. Table 1 summarizes the descriptive statistics for the reading score as well as the different intelligences for the students.

**Table1. Descriptive Statistics for Reading Score and Different Intelligences**

	Mean	Std. Deviation	N
IELTS	24.3443	5.22038	122
Naturalistic	51.9672	17.93650	122
Musical	60.3279	17.57790	122
Logical	58.9344	16.70391	122
Existential	70.9016	21.43621	122
Interpersonal	66.6393	16.44478	122
Kinesthetic	72.4590	19.34085	122
Verbal	59.5902	18.99968	122
Intrapersonal	65.0820	18.86209	122
Visual	63.5246	17.38823	122

Based on the results, we can conclude that the group was strong based on the kinesthetic intelligence (72.45) and was weak in naturalistic intelligence Currie (2003) reports a higher mean for interpersonal than intrapersonal intelligence. The two other intelligences which seem to be most highly developed by the class as a whole are existential (70.90) and intrapersonal (65.08) intelligences. A correlation coefficient was run to see the degree of the relationship between reading test and different intelligences which is shown in table 2.

As it is shown the reading ability has high correlation with existential intelligence and it has low correlation with logical intelligence. As the above table illustrate the correlation coefficient between intelligence and reading ability is significant with an  $r$  value of 0.20 at the  $p < 0.05$ . In the light of this finding, the null hypothesis is rejected. In this case, the low value of correlation makes us be exact regarding the interpretation of this result.

At this phase of the data analyses procedure, a multiple regression was run to see which multiple intelligence subscales (as independent variables), if any, can predict the reading ability (as the dependent variable) table 3.



**Table. 2 Correlations**

Pearson Correlation	IELTS	Natur	Musical	Logical	Existel	Interp	Kines	Verbal	Intrape r
IELTS									
Sig. (2-tailed)									
Naturalistic	.115								
Sig. (2-tailed)	.209								
Musical	.164	.425(**)							
Sig. (2-tailed)	.072	.000							
Logical	.047	.355(**)	.530(**)						
Sig. (2-tailed)	.608	.000	.000						
Existential	.203(* )	.313(**)	.374(**)	.420(**)					
Sig. (2-tailed)	.025	.000	.000	.000					
Interpersonal		-.014	.047	.098	.152				
Sig. (2-tailed)	.106	.880	.609	.282	.095				
Kinesthetic		.417(**)	.408(**)	.579(**)	.521(**)	.154			
Sig. (2-tailed)	.111	.000	.000	.000	.000	.091			
Verbal		.279(**)	.342(**)	.376(**)	.425(**)	.083	.459(**)		
Sig. (2-tailed)	-.077	.002	.000	.000	.000	.364	.000		
Intrapersonal		.483(**)	.406(**)	.539(**)	.430(**)	.162	.509(**)	.303(**)	
Sig. (2-tailed)	.159	.000	.000	.000	.000	.074	.000	.001	
Visual		.433(**)	.494(**)	.579(**)	.439(**)	.065	.517(**)	.372(**)	.572(* )
Sig. (2-tailed)	.110	.000	.000	.000	.000	.478	.000	.000	.000

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

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

**Table. 3 Regressions Coefficients(a)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	19.390	2.789		6.951	.000
Naturalistic	.007	.032	.026	.223	.815
Musical	.048	.034	.162	1.428	.156
Logical	-.044	.040	-.141	-1.109	.270
Existential	.051	.027	.211	1.893	.061
Interpersonal	.024	.029	.077	.838	.404
Kinestheics	.013	.034	.049	.391	.697
Verbal	-.065	.029	-.238	-2.268	.025
Interpersonal	.026	.034	.094	.764	.447
Visual	.004	.037	.013	.104	.917

a Dependent Variable: IELTS

As the above table shows, only one intelligence from the 9 intelligences, namely, the verbal linguistic intelligence is found to be a predictor of reading ability. Verbal intelligence turned out to be making statistically significant contributions to this prediction. Scanning the significance column

of Table 3 shows us that .025 is less than .05 and thus makes a significant contribution to predicting reading ability. Verbal intelligence makes the strongest contribution to the dependent variable of reading score (Campbell, 1986).

### Conclusions, Implications, and Future Directions

Although the MI theory has been criticized on theoretical, conceptual, empirical, and pedagogical grounds by several scholars (Plucker, Callahan, & Tomchin, 1996), one of its greatest strengths is its capacity to serve as a framework allowing teachers to explore their teaching styles and to assist them in making decisions about ways to structure teaching and learning experiences for students. Students need to experience learning that allows them to engage all of their intelligences, to explore their own intelligences and how they can impact their learning, and they need to be offered choice in how they learn and are assessed. Students are then more likely to experience curriculum that is meaningful, personalized, and relevant. The theory suggests that two of human intelligences, verbal-linguistic and logical-mathematical intelligence, have dominated in traditional schooling. The five non-traditional intelligences – spatial, musical, bodily-kinesthetic, interpersonal and intrapersonal – have generally been overlooked. Haggarty (1995: 49) stated, “MI theory offers a richly diversified way of understanding and categorizing human cognitive abilities, and combinations of abilities, heightening our awareness of what makes learning possible for individual students”. Kagan and Kagan (1998 : 23) described MI theory as a powerful ‘catalyst’ in education: “It is revitalizing the search for more authentic, student-centered approaches to curriculum, instruction and assessment.” From his perspective, MI theory can be used to meet three visions: (a) to match teaching to the ways students learn (b) to encourage students to stretch their abilities and develop all their intelligences as fully as possible (c) to honor and celebrate diversity. Gardner’s theory of multiple intelligences has met with a strongly positive response from many educators. It has been embraced by a range of educational theorists and, significantly, applied by teachers to the problems of schooling. It has helped a significant number of educators to question their work and to encourage them to look beyond the narrow confines of the dominant discourses of skilling, curriculum, and testing and assessment. As there are only a few studies on the application of multiple intelligence theory, there is a need to conduct more studies on this issue. This present study may give insights for teachers and educators about integrating multiple intelligences into the curriculum. Future research will also provide technological tools to administer, score,

and interpret test results so that teachers can spend less time testing students and more time providing individualized instruction.

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