

# The Theory of Multiple Intelligences and Its Application in EFL Classrooms

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## Abstract

*Howard Gardner claims that every human possesses eight intelligences whereas the IQ test mainly focuses on two: linguistic and logical-mathematical intelligences. Because of this, in many classrooms, teachers who tend to focus on those two intelligences limit other possible ways that students learn. This paper examines the theory of MI (multiple intelligences) and how we can apply its principles in school and EFL classrooms. The author concludes that understanding MI theory and its principles is extremely important, since using MI-based activities opens up a wide range of possibilities for helping students learn more effectively and successfully in EFL classrooms.*

## Introduction

The theory of multiple intelligences (MI) is not well known in Japan. Many Japanese people still tend to believe intelligence is closely related to IQ, and they think that a person with a high IQ must be smart. Such a notion was challenged by an educational psychologist, Howard Gardner, who published a book entitled *Frames of Mind* in 1983. In this book Gardner claims that every human possesses at least seven intelligences and that IQ measures mainly linguistic and logical-mathematical intelligence. Therefore, we cannot measure human intelligences by merely looking at IQ scores. He says that there are more things we need to consider in order to discover each person's intellectual abilities.

The purpose of this paper is to examine Gardner's theory of multiple intelligences in depth and consider how we can apply his theory. By understanding his theory and its principles well, we may be able to understand how to apply them in education, particularly EFL in Japan, and help students learn more effectively in classrooms.

### Theory of Multiple Intelligences

Originally Gardner claimed that every human possessed seven intelligences, but later he added one more intelligence. Gardner (1999) refers to the first kind of intelligence as linguistic intelligence. People with high linguistic intelligence have sensitivity in spoken as well as written words. They also have an ability to learn language and use language proficiently to accomplish their goals. Lawyers, authors and poets are considered to have high linguistic intelligence.

Lazear (2004) specifically describes linguistic intelligence as follows:

Verbal-linguistic intelligence involves all forms of working with language, including reading the newspaper, a novel, or the labels on various products we buy; writing essays, poetry, reports, or letters; formal speaking before an audience and informal conversation with a friend; and listening to someone's words and understanding both what they are saying and what they are intending to communicate. This is probably the most familiar intelligence to people in the Western world. Most of us spend the majority of our waking hours using the verbal-linguistic intelligence. It is also strongly emphasized in all our systems of public education. (p. 60)

The second kind of intelligence is logical-mathematical. This intelligence deals with numbers and logic, and is the kind that scientists, accountants and computer programmers often use in their profession

(Armstrong, 1993). According to Armstrong (1993), this logical-mathematical type of intelligence “includes the ability to reason, sequence, think in terms of cause-and-effect, create hypotheses, look for conceptual regularities or numerical patterns, and enjoy a generally rational outlook on life” (p. 10).

The third kind of intelligence is musical intelligence, which is related to musical skills such as composing, performing, and appreciating music (Gardner, 1999). Nicholson-Nelson (1998) says that people who remember melodies or are well aware of pitch and rhythm show musical intelligence. They like to listen to music and recognize surrounding sounds. Singers, songwriters, rock musicians, dancers, composers, and music teachers possess this intelligence.

Spatial intelligence is the fourth kind and this intelligence involves thinking in pictures and images. Tele (2000) states that people with high degree of spatial intelligence enjoy doing artwork, can read maps, charts and diagrams, and do jigsaw puzzles well. Graphic artists, cartographers, draftspersons, architects, painters, and sculptors often use this intelligence (Nicholson-Nelson, 1998).

Gardner (1999) refers to the fifth kind as bodily-kinesthetic intelligence, and this intelligence involves the ability to use one’s whole body or parts of one’s body to solve problems or create something. Dancers, actors, professional athletes, surgeons, and engineers use this intelligence.

Interpersonal intelligence is the sixth kind of intelligence, which includes the ability to understand other people’s motivations, intentions, and desires, and to work well with others. People who use this intelligence are salespeople, teachers, actors, and religious and political leaders (Gardner, 1999). Armstrong (1993) says, “An interpersonally intelligent individual may be very compassionate and socially responsible like Mahatma Gandhi, or manipulative and cunning like

Machiavelli” (p. 10).

The seventh kind of intelligence is intrapersonal, or the intelligence of understanding oneself (Gardner 1999). A person with high intrapersonal intelligence “can easily access her own feelings, discriminate between many different kinds of inner emotional states, and use her self-understanding to enrich and guide her life” (Armstrong, 1993, p. 11). Armstrong (1993) says that counselors, theologians, and self-employed business people are the ones that require this intelligence. They are the type of people who like to meditate and contemplate, but they tend to prefer working alone rather than working with other people.

The eighth intelligence, which Gardner introduced afterwards, is called naturalist intelligence. According to Gardner (1999), a naturalist is a person who can distinguish and classify many species of his or her environment. Hunters, fishermen, farmers and gardeners have this intelligence. Armstrong (1993) states, “the naturalist reveals the intelligence of the “green thumb”—that knack that some people have to garden, to nurture household plants, create wonderful landscapes, or in other ways show a natural care for flora” (p. 225).

### The Theoretical Basis for MI Theory

Gardner’s theory did not merely come from his own personal opinions, but he identified eight theoretical bases for MI theory as follows:

1. **Brain damage.** Gardner worked with individuals who had accidents and sicknesses and as a result had suffered brain damage. He found out that a specific part of the brain was affected, but the rest of the brain functioned normally. For example, a person who had damage in the left frontal lobe might have his or linguistic intelligence affected, such as reading, writing, and speaking. Yet this individual could sing, dance,

and work on math problems. Thus Gardner asserts the existence of autonomous brain systems—more complex version of popular “right-brain/left brain” model of learning in 1970s (Armstrong, 2000).

2. Exceptional individuals. Gardner suggests that there are certain individuals who can excel in a particular intelligence. Savants are individuals who are supreme in one area of intelligence yet lack other intelligences. For example, in the movie *Rain Man*, the character Raymond, portrayed by Dustin Hoffman, was a logical-mathematical savant. He calculates a large number of figures in his head and demonstrates other incredible mathematical skills. However, he is not good at communicating with other people, or dealing with his own personal life (Armstrong, 2000).

3. Developmental history. According to Gardner, each intelligence has its own developmental history. In short, each intelligence-based activity has its own time-frame, arising in childhood, peaking during one’s lifetime and declining when one gets older. For example, activities in music composition develop in relatively early age. Mozart started to compose when he was five years old. Many composers and performers have been active until their eighties and nineties. Therefore, skills in music composition and performance stay sharp for a long period of time. Meanwhile, one can be a successful novelist starting in one’s forties or fifties or even later in life (Armstrong, 2000).

4. Evolutional history. MI theory has its own historical background. Some intelligences were more important than others in early history. For example, hundreds of years ago many Americans who lived in rural areas needed naturalistic and bodily-kinesthetic intelligences since they needed abilities to hunt, farm, and build silos. Similarly, particular intelligences may become more important in the future. As many people receive information through advanced technology such as television and computers, the value of spatial intelligence may increase

(Armstrong, 2000).

5. Psychometric findings. Gardner suggests that there are many standardized tests that support the theory of multiple intelligences (Armstrong, 2000). For example, Christison (2005) says, “The Weschsler Intelligence Scale for Children includes sub-tests that focus on several of the different intelligences” (p. 5).

6. Experimental psychological tasks. Psychological studies seem to suggest that each intelligence works separately. For example, in studies some subjects work well with reading skills, but they fail to transfer those skills to another area of intelligence such as mathematical. In similar studies, some subjects can memorize words well, but not faces whereas others can perceive music sounds strongly but not verbal sounds. This seems to suggest that “people can demonstrate different levels of proficiency across the eight intelligences in each cognitive area” (Armstrong, 2000, p. 8).

7. Set of operations. Gardner suggests that just as computer programs need a set of operations, such as DOS, each intelligence has a set of operations that stimulate different activities. For example, the components of musical intelligence include the ability to distinguish among different musical rhythm structures. For bodily-kinesthetic intelligence, people need to imitate the physical movements of others (Armstrong, 2000).

8. Encoding in a symbol system. According to Gardner, the best indicator of humans’ capacity for intelligent behavior is an ability to use symbols. In addition, this capacity to symbolize distinguishes humans from other species. There are different symbols for each intelligence. In linguistic intelligence, there are spoken and written languages, for example, Spanish, English, and French. Meanwhile, graphic languages are used by designers, architects, and engineers (Armstrong, 2000).

## IQ vs. MI

The IQ test was first devised by Binet and Simon, who were commissioned by the French Ministry of Education to identify students who had problems with learning. Based on the measurement, the government tried to help students to enhance their learning (Poole, 2001). Christison (2005) states, “The idea is that intelligence is a single, static construct, an innate attribute that doesn’t change with age, training, or experience. We are born with a certain amount of intelligence that will not change as a result of life experiences” (p. 2).

Howard Gardner challenges the whole idea of IQ. He says that the IQ test mainly measures linguistic and logical-mathematical abilities. However, this intelligent test does not measure other intelligences; “it also doesn’t look at other virtues like creativity or civic mindedness, or whether a person is moral or ethical” (Checkley, 1997, p. 12).

Furthermore, Nicolson-Nelson (1998) states that the school system has depended on the IQ test over the years and as a consequence, schools emphasize linguistic and logical-mathematical intelligences. Students who can read, write, speak, and do basic mathematical skills are considered more successful in school.

Armstrong (1993) indicates that the IQ test predicts how students can be successful in school, but it fails to perceive how students will do after they get out of school. According to one study, one third of successful professionals have IQ scores that are below average. This seems to suggest that real success requires a wider range of skills and intelligences. Gardner (1993) further questions what happens after school is finished. Take two individuals as an example. One “average” student has become a very successful engineer and has attained a prominent position both in his career and in his civic community. He is

considered a talented individual by everyone. Meanwhile the “superior” student hasn’t become a successful writer, having been constantly rejected by publishers. She has ended up taking a middle-management position at a bank. Although she is not entirely unsuccessful, she is considered “ordinary” in her accomplishments. Gardner states that the IQ test is a poor predictor of performance in professional life after school.

Furthermore, the IQ test seems to imply that our intelligence is fixed and that we cannot do anything about it. According to the theory of multiple intelligences, each person possesses eight intelligences and he or she has unique strengths among these intelligences, just as each individual has a unique mind and personality (Checley, 1997).

Contrary to the traditional view of the IQ score, Gardner suggests that everyone can develop his intelligences to a reasonable high level of achievement. He says that through the Suzuki Talent Educational Program many ordinary individuals can learn to play the piano or violin at a high degree of proficiency. The program’s rich educational environment and the learners’ relatively early age of exposure to this method help accomplish their goals. (Armstrong, 2000).

Gardner points out that each intelligence does not work by itself in real life situations. Intelligences always interact with one another. For example, Armstrong (2000) indicates the following examples:

To cook a meal, one must read the recipe (linguistic), possibly divide the recipe in half (logical-mathematical), develop a menu that satisfies all members of a family (interpersonal), and placate one’s own appetite as well (intrapersonal). Similarly, when a child plays a game of kickball, he needs bodily-kinesthetic intelligence (to run, kick, and catch), spatial intelligence (to orient himself to the playing field and to anticipate the trajectories of flying balls), and linguistic and interpersonal



intelligences (to successfully argue a point during a dispute in the game). (p. 9)

Another significant point of MI theory is that there are many ways to be smart in each category. For instance, a person who cannot read but can tell a great story or possesses a large vocabulary is considered highly linguistic. Similarly, a person who is not good at sports on a playing field may show a high bodily-kinesthetic intelligence when he or she weaves a carpet (Armstrong, 2000). Thus, compared with the IQ, MI theory looks at more versatile intelligences of human beings.

#### Using MI in the Classroom

Because the IQ is easy to quantify and compare, we tend to focus on linguistic and logical-mathematical intelligences in our schools. However, Tele (2000) points out that this is a dangerous approach, since we only look at one or two ways that students learn. She says that students have different ways of learning. Therefore, you cannot assess students' performance only by looking at standardized tests.

Armstrong (2003) says that our culture places more value on linguistic intelligence than on any of the other seven intelligences, but we should not continue to do so. The theory of multiple intelligences suggests such value system needs to be reconsidered. We need to pay more attention to those neglected intelligences in our schools, especially spatial, bodily-kinesthetic, musical, and naturalist intelligences, which become great strengths to those students who have not been successful in linguistic-bound schools.

Concerning the application of MI in education, Gardner (1993) describes the purpose of school as follows:

In my view, the purpose of school should be to develop intelligences and to help people reach vocational and avocational

goals that are appropriate to their particular spectrum of intelligences. People who are helped to do so, I believe, feel more engaged and competent, and therefore more inclined to serve the society in a constructive way. (p. 9)

Furthermore, Gardner (1993) says that because people have different interests and abilities, the school should be aware of individual differences and maximize each person's intellectual potential. This means that the school does not merely focus on an individual strengths and interests, but also identifies weaknesses, in order to help each person overcome his or her difficulties in learning. Armstrong (2000) says that a person's "weak" intelligence may turn out to be a "strong intelligence" if he or she is given a chance to develop it. Gardner's idea also implies that teaching in a variety of ways is effective with various kinds of learners. Sensitivity to individual differences is a key to being a competent teacher who can optimize students' learning.

Tele (2000) points out that people use different combinations of intelligences when they perform daily tasks. For example, driving a car requires a combination of bodily-kinesthetic, spatial, intrapersonal, logical-mathematical, and interpersonal intelligences. Therefore, it is important to develop both dominant and less dominant, because people are required to use a variety of combinations of intelligences in their every-day activities.

Tele (2000) also states that all of our intelligences can be developed if we get exposed to positive educational and environmental circumstances. She further points out that "biological potential or determination for learning and cognition remains only that until the environmental experiences permit that potential to function, develop, and flourish" (p. 46). For instance, people who have great bodily-kinesthetic intelligence may not become successful athletes

unless they practice hard and receive supportive assistance from coaches who understand their abilities.

Tele (2000) suggests that in addition to having positive educational and environmental circumstances, educators should first concentrate on students' strong areas and then focus on those areas that are less strong. Tele says that this approach build students' self-esteem and helps them to become aware of their abilities and talents. Afterwards students could "be taught how to translate from their dominant intelligences to their less dominant intelligences" (p. 60). If students find out that they can succeed in learning, then they will try much harder. Because of this, Campbell (1997) says, a school is responsible for helping students find and enhance their talents and strengths. By doing this, the school not only helps students discover joy in learning but also motivates them to put forth an effort to acquire knowledge and master skills.

Regarding the application of MI in classrooms, Brualdi (1996) says that teachers must consider all the intelligences equally significant. This is very different from traditional education systems, where development and learning have been strongly focused on linguistic and logical-mathematical intelligences. Consequently, the theory of multiple intelligences suggests that educators become aware of and teach to a wide range of students' skills and talents.

Another application is that teachers need to structure a class which engages most of or all of the intelligences. For instance, when you need to teach about the Revolutionary War, "a teacher can show students battle maps, play revolutionary war songs, organize a role play of the signing of the Declaration of Independence, and have the students read a novel about life during that period" (Brualdi, p. 4). This teaching approach creates excitement in learning and reinforces the same material in various ways. In addition, MI-based activities meet

the needs of various students (Burman and Evans, 2003).

Poole (2001), however, points out that teachers in MI classrooms do not need to teach eight different ways to match students' intelligences. However, they must take care that students are given opportunities "to choose more than one way of developing the concepts and skills related to the topic being taught, thus allowing the learner to truly maximize his/her learning capabilities by representing knowledge in other ways" (p. 540).

### Applying MI in ESL/EFL Classrooms

Christison (2005) and Putschta and Rinvoluceri (2005) published MI resource books for ESL/EFL students. Both books contain various activities that deal with specific applications of MI theory. For example, in Christison's resource book, one of the activities, called "Personal Galleries," asks students to create a class art gallery. Each student selects his/her favorite artist's work and brings copies to class. Then students prepare a short report on the artist and his or her work. The report includes the artist's name, the medium used, the artist's most significant works, biographical information about the artist, the reasons the student likes the artist, etc. Following an oral report with a presentation of the art works, there is a group discussion about what the students learned, liked best and were most surprised by. This activity's objectives are "to learn about art and artists, to develop a better understanding of personal taste in art, to develop an awareness of and value for individual differences and to give students an opportunity to work together" (p. 230).

In Putschta and Rinvoluceri's resource book, there is an activity called "How many questions a minute?" The focus of MI principle is interpersonal and intrapersonal. Students work in pairs and student A asks student B as many questions as he/she can for one minute. Student

B just listens and never answers the questions. Then after one minute, student B answers as many of student A's questions as he/she remembers. Among his/her answers, Student B includes one lie on purpose. Student A watches and listens to student B's answers carefully and tries to spot the lie. Then they switch roles. Afterwards both talk for a few minutes to identify their lies and how they noticed them.

These resource books introduce very useful applications of MI theory for ESL/EFL classrooms. However, often teachers do not have enough time to implement them in class, since they need to cover their material and they may think that application of those activities is irrelevant to what they are teaching.

In my own experience, I have observed many EFL classes and found that many teachers are text-bound and use texts with similar teaching procedures all the time. In other words most of their activities are heavily linguistically based, and some students seem to be bored with the similarity of these linguistic activities in class. For example, in one freshman reading class I observed, the teacher asked students individually some reading comprehension questions. Then she asks students' opinions individually. It seems that the main classroom dynamic was teacher-students, and there was no pair work or group work. While the teacher was asking one student, the rest of the students were sitting quietly and waiting their turn.

In another class I observed, the teacher worked on one exercise in a textbook. She assigned different pairs to come up front and write answers on the board. Then she went over each answer in the class. When she went on to another exercise, she used exactly the same technique to assign different pairs to come in front and write answers on the board. Students who were not assigned seemed to relax and did not focus on what was happening in class. Moreover, they even looked bored since they had "nothing to do."

In both classrooms, teachers did not seem to have time to explore different approaches to teaching English. Rather they stuck to their focus on linguistic intelligence to enhance learning. Those students who are not linguistically oriented may have difficulty learning English this way. Concerning this issue, Putschta and Rinvoluceri (2005) said the following:

Your students' motivation depends partly on how "addressed" they feel in your class and on how meaningful they think the activities in your class are to them. If your teaching focus is on the linguistic domain only, you will get excellent results with the minority of students who are strong in this area. If, however, you regularly use exercises like the ones suggested in this book, you will notice that students whose strengths lie in areas other than the linguistic one will activate themselves more and will develop an interest in your subject and want to find out more about it. (p. 16)

With this in mind, I have used some MI based activities in class, and they seem to work very well. Questionnaires reveal that students enjoyed studying English using a variety of approaches and that their motivation increased. The following are some examples of MI-based activities I have used in classrooms.

#### 1. Using authentic materials:

In my reading class, I focus on various reading skills such as scanning. I give out a copy of Disney World's MGM Studio Guide map and a handout with questions such as "List three places that you'd like to visit" "Where can you eat pizza? Find two places." "How long does Disney MGM Studio's Backlot Tour last?" First, students use their own intrapersonal intelligence to look at the map and answer the questions (linguistic and spatial intelligences). Then they work in pairs and compare their answers (interpersonal intelligence). They also need their

own spatial intelligence to locate the right information on the map. After eliciting answers from students, I show a video I took at the MGM studio. Students can confirm various locations (spatial intelligence) and listen to authentic English (linguistic intelligence). By the end of the activity, students have gotten hands-on experience using their scanning skills. This is quite different from using the textbook, where students read only a written English text and finish with no idea of whether they can apply their learning in their own life.

## 2. Using videos:

Most students tend to think reading means reading from a textbook. In this way people who are not linguistically inclined find it difficult studying English. In my reading class, I occasionally use an American animation called *Arthur*, a well-known PBS TV program. Since the program is intended for American elementary school pupils, the vocabulary is relatively easy and suitable for Japanese EFL learners. I usually prepare a handout with brief character descriptions and vocabulary definitions. Then I tell my students to come up with some comprehension questions in English while they are watching the show. In most EFL classes questions are usually prepared by teachers and students simply answer them. However, in order to become better speakers/readers or improve their linguistic and logical intelligences, students need to practice creating their own questions. One of the biggest advantages of doing this activity is that while students are watching a video, they see animation as a visual aid and English subtitles as a language aid. Therefore even those students who are not strong in linguistic intelligence can get the main idea by watching a video. Then, after an episode that usually lasts less than 15 minutes, they work in pairs and ask and answer questions. This activity deals with linguistic, logical-mathematical, intrapersonal, interpersonal and spatial intelligences.

### 3. Using music:

Using music is popular in EFL classrooms. However, my approach is a little different. In my TOEIC (Test of English for International Communication) class, I hand out lyrics with parts of words or phrases missing. Instead of a regular cloze exercise where students listen to the CD and fill in blanks, I ask students to work in pairs and guess grammatical functions for each blank before they listen to the music—whether the missing words are adjectives, nouns, adverbs, verbs, etc. This activity helps students focus more on grammatical forms and logically figure out answers. In the sentence-completion section of the TOEIC, students need to figure out the correct words or phrases to complete sentences. Therefore this activity is closely connected with the TOEIC test. After figuring out grammatical forms, students listen to the CD and fill in words or phrases. Then they work in pairs and check their answers. Many times their knowledge of grammar helps them answer questions. For example, if the word preceding a blank is “have,” that often indicates that the missing word is a verb in the present perfect tense. In addition, I usually do not give away answers immediately after listening to the CD. Instead I elicit all the answers from students. When their response is wrong, I start writing a few letters as a hint. Then they seem to come up with the correct answer. This music activity helps students develop their linguistic, musical, logical-mathematical, intrapersonal and interpersonal intelligences.

### Conclusion

Richards and Rodgers (2001) say that using MI in classrooms help students become more well-rounded persons and more effective language learners. As I indicated previously, focusing on one intelligence, such as linguistic, in language classrooms does not seem



to help students improve their foreign language competence, since some students do not possess high linguistic intelligence. If that happens, some students with low linguistic intelligence may lose their motivation for studying English and end up having a negative attitude toward learning a foreign language.

Putchta and Rinvoluceri (2005) said,

Generally speaking, we tend to regard as intelligent those students who show a high degree of linguistic ability and who therefore share the intelligence that language teachers are strong in. If the focus of your teaching is mainly on the activation of the language intelligence, students whose strong areas are elsewhere may easily be seen by you as inactive, stupid and demotivated. Using activities that draw on a variety of intelligences will help you to better appreciate the strengths, otherwise hidden, of these students. Consequently they will feel more appreciated by you and will feel better about what they achieve in the foreign language-class. (p.16)

In conclusion, understanding MI theory and its principles is extremely important, since using MI based activities opens up a wide range of possibilities for helping students learn more effectively and successfully in EFL classrooms.

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