

## **An Overview of Case Studies About the Influence of Multiple Intelligences on Teaching Language**

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**Abstract:** There are more intelligences than g-factor and those intelligences learn in different ways. Teaching language to those different intelligences needs different methods and activities. Howard Gardner introduced eight different intelligences and each of the intelligences has different characteristics. This study provides a brief overview of the case studies which have been done through different ages and grades. Also this article suggests some new specific ways to the educators to incorporate the multiple intelligences into their daily lesson planning. Finally it allows each learner to recognize their strengths and limits, solving the age of dilemmas.

**Key words:** Multiple intelligence, language teaching

### **Introduction**

The concept of general intelligence which had been emerged into different aspects was replaced by multiple intelligences theory founded by Howard Gardner (1983). Gardner defines the intelligence as "the ability to solve problems or to create fashion products that are valued within one or more cultural settings" (Gardner, 81). His view of intelligence shifted the conventional view of intelligence which is a single capacity to logical and mathematical thought. Within the same purpose, Gardner (1993) described intelligence as a bio-psychological potential that could be influenced by experience, culture, and motivational factors. Gardner's theory (1993) suggests different and independent intelligence capacities that result in many different ways of knowing, understanding, and learning about the world to have a better understanding of it.

Gardner argues that we have at a minimum eight different forms of intelligence, each relatively independent of the others: musical, bodily kinesthetic, logical-mathematical, verbal-linguistic, spatial, interpersonal, intrapersonal and naturalist. According to Gardner, each of these multiple intelligences is linked to an independent system in the brain (Gardner, 1999). According to Gardner (1999), all human beings possess all different intelligences in varying degrees and each individual manifests varying levels of these different intelligences and thus each person has a unique "cognitive profile"; that is, a) all human possess all different intelligences in varying amounts; b) Each individual has a different composition; c) Different intelligences are located in different areas of the brain and can either work ; d) By applying Multiple Intelligences we can improve education; and e) These intelligences may define human species. Moreover, although the eight basic types of intelligence are presented individually, Gardner suggests that these separate intelligences do not operate in isolation. Normally, any activity encompasses several kinds of intelligence together, independently or together.

A summary of Gardner's eight intelligences is given as follow:

**Linguistic/ verbal Intelligence:** Gardner has described Linguistic intelligence as sensitivity to spoken and written language and the ability to use language to accomplish goals, as well as the ability to learn new languages. According to Gardner (1993), lawyers, public speakers, writers, and poets all possess high levels of linguistic intelligence.

Verbal comprehension involves the ability to understand the meanings both of individual words and of passages of written or spoken texts. Word fluency, in contrast, involves the ability to generate rapidly many examples of words that meet some specification (e.g., words beginning with a given letter, words rhyming with a target word, words naming objects that have some property, etc.).

**Logical/Mathematical Intelligence:** Gardner (1995) described logical/mathematical intelligence as the ability to study problems, to carry out mathematical operations logically and analytically, and to conduct scientific investigations. Gardner identified mathematicians, logicians, and scientists as persons who would possess high levels of this hypothesized intelligence.

**Spatial/Visual Intelligence:** Gardner defined spatial intelligence as the ability to recognize both large and small visual patterns. He suggested that navigators and pilots would possess high levels of spatial intelligence, as would sculptors, surgeons, chess players, and architects.

**Musical Intelligence:** Gardner (1999) suggests that musical intelligence is parallel in structure to linguistic intelligence, and that it is reflected in the performance, composition, and appreciation of musical patterns. With regard to the underlying abilities involved in his musical intelligence, Gardner has claimed that the two most central constituent elements of music are rhythm and pitch (or melody), followed in importance by timbre (which Gardner, 1983, p.105, describes as the characteristic qualities of a tone).

**Bodily-Kinesthetic Intelligence:** Gardner (1999) described this intelligence as the potential of using the whole body or parts of the body in problem-solving or the creation of products. Gardner identified not only dancers, actors, and athletes as those who excel in bodily-kinesthetic intelligence, but also craftspeople, surgeons, mechanics, and other technicians. Thus, Gardner does not appear to differentiate between gross motor skills (i.e., involving the whole body or the larger muscle groups) and fine motor skills (i.e., involving smaller muscle groups, especially those controlling the hands and fingers) in describing bodily-kinesthetic intelligence.

**Interpersonal Intelligence:** According to Gardner (1983), an individual who is high in interpersonal intelligence understands the intentions, motivations, needs, and desires of others, and is capable of working effectively with them. Gardner stated that teachers, clinicians, salespeople, politicians, and religious leaders all use interpersonal intelligence.

**Intrapersonal Intelligence:** Gardner (1999) described intrapersonal intelligence as the ability to understand and to have an effective working model of oneself. Intrapersonal intelligence, as conceptualized by Gardner, includes the awareness of one's own desires, fears, and abilities, and also using this information to make sound life decisions.

**Naturalistic Intelligence:** Gardner (1999) described a naturalist as one who is able to recognize and classify objects. According to Gardner, hunters, farmers, and gardeners would have high levels of naturalistic intelligence, as would artists, poets, and social scientists, who are also adept at pattern-recognition. He stated that a marketing professional who promotes the small differences between competing products is applying naturalistic intelligence, as is the individual who can recognize cars from the sounds of their engines.

Undoubtedly this new perception of notion of intelligence has shifted the traditional, authoritative teacher-centered instruction methods to the learner-centered mode of instruction in ELT classes. Educators started paying attention to the impact of learners' diversity in their learning style at their classrooms(Larsen-Freeman, 2000).

The multiple intelligence theory opens the doors to a variety of teaching strategies which can easily be applied in the language classroom. It gives teachers opportunities to widen modern teaching strategies by using various assignments and activities (Armstrong, 2009, 51).

The theory can be used in many different ways and works well in the entire school system. It offers opportunities for students to use and develop all the different intelligences, not just the ones that they excel in. It also offers different learning styles and methods as well as various activities. Each of the intelligence is prospective in every learner and it is part of the teacher's job to look after and help children to develop their own intelligences( Bakic-Miric, 2010).

It is interesting to see that acknowledgement of the theory exist within many different language teaching methods. For example, The Silent Way emphasize the development of student's inner thinking (Interpersonal Intelligence). Total physical response emphasizes language learning through physical action( bodily-kinesthetic Intelligence) while Suggestopedia emphasizes the use of music (Musical Intelligence) to deepen understanding of learning.

The Communicative Approach as well as cooperative learning stress the importance of interpersonal relationships (Interpersonal Intelligence) (Christison, 1996; Arnold & Fonseca, 2004).

The primary objective of this study is to indicate, by overviewing two case studies, the students' performance and improvement in learning English after the MI theory has been implemented in the English Language courses.

### **Method of the Study**

The study was conducted in qualitative research approach in which the action research review technique has been used. The purpose of this study was to investigate the implementation of Multiple Intelligences Theory in an educational setting by overviewing an action research which has been done in a third-grade classroom in Washington.

### **Data Analysis Processes**

With the aim of gathering the data first relevant literature reviewed. Books, dissertations and articles which are related to topic has been gathered and all those items have been examined carefully. Also it was asked to experts' ideas. In the process of gathering the data generally electronic database of the university has been used. Case studies which had been done to implement the MI theory in educational settings have been searched and also interviewed with a few of the teachers who had implement the MI theory in their classrooms.

### **Findings and Discussion**

To implement Gardner's theory in an educational setting, the teacher organized his third-grade classroom into seven learning centers, each dedicated to one of the seven intelligences. The students spend approximately two thirds of each school day moving through the centers—15 to 20 minutes at each center. Curriculum is thematic, and the centers provide seven different ways for the students to learn the subject matter.

Each day begins with a brief lecture and discussion explaining one aspect of the current theme. For example, during a unit on outer space, the morning's lecture might focus on spiral galaxies. In a unit about the arts of Africa, one lecture might describe the Adinkra textile patterns of Ghana. After the morning lecture, a timer is set and students in groups of three or four start work at their centers, eventually rotating through all seven.

### **What Kinds of Learning Activities Take Place at Each Center?**

All students learn each day's lesson in seven ways. They build models, dance, make collaborative decisions, create songs, solve deductive reasoning problems, read, write, and illustrate all in one school day. Some more specific examples of activities at each center follow:

In the *Personal Work Center* (Intrapersonal Intelligence), students explore the present area of study through research, reflection, or individual projects.

In the *Working Together Center* (Interpersonal Intelligence), they develop cooperative learning skills as they solve problems, answer questions, create learning games, brainstorm ideas, and discuss that day's topic collaboratively.

In the *Music Center* (Musical Intelligence), students compose and sing songs about the subject matter, make their own instruments, and learn in rhythmical ways.

In the *Art Center* (Spatial Intelligence), they explore a subject area using diverse art media, manipulative, puzzles, charts, and pictures.

In the *Building Center* (Kinesthetic Intelligence), they build models, dramatize events, and dance, all in ways that relate to the content of that day's subject matter.

In the *Reading Center* (Verbal/Linguistic Intelligence), students read, write, and learn in many traditional modes. They analyze and organize information in written form.

In the *Math & Science Center* (Logical/Mathematical Intelligence), they work with math games, manipulative, mathematical concepts, science experiments, deductive reasoning, and problem solving.

Following their work at the centers, a few minutes are set aside for groups and individual students to share their work from the centers. Much of the remainder of the day is spent with students working on independent projects, either individually or in small groups where they apply the diverse skills developed at the centers. The daily work at the seven centers profoundly influences their ability to make informative, entertaining, multimodal presentations of their studies. Additionally, it is common for parents to comment on how much more expressive their children have become at home (Borich, 2011).

### **The Results of the case study**

An action research project was conducted in his classroom to assess the effects of this multimodal learning format. The research data revealed the following:

*The students develop increased responsibility, self-direction, and independence over the course of the year.* Although no attempt was made to compare this group of students with those in other third-

grade classes, the self-direction and motivation of these students was apparent to numerous classroom visitors. The students became skilled at developing their own projects, gathering the necessary resources and materials, and making well-planned presentations of all kinds.

*Discipline problems were significantly reduced.* Students previously identified as having serious behavior problems showed rapid improvement during the first six weeks of school. By mid-year, they were making important contributions to their groups. And by year's end, they had assumed positive leadership roles that had not formerly been evident.

*All students developed and applied new skills.* In the fall, most students described only one center as their "favorite" and as the one where they felt confident. (The distribution among the seven centers was relatively even.) By mid-year, most identified three to four favorite centers. By year's end, every student identified at least six centers that were favorites and at which they felt skilled. Moreover, they were all making multimodal presentations of independent projects including songs, skits, visuals, poems, games, surveys, puzzles, and group participation activities.

*Cooperative learning skills improved in all students.* Since so much of the center work was collaborative, students became highly skilled at listening, helping each other, sharing leadership in different activities, accommodating group changes, and introducing new classmates to the program. They learned not only to respect each other, but also to appreciate and call upon the unique gifts and abilities of their classmates.

*Academic achievement improved.* Standardized test scores were above state and national averages in all areas. Retention was high on a classroom year-end test of all areas studied during the year. Methods for recalling information were predominantly musical, visual and kinesthetic, indicating the influence of working through the different intelligences. Students who had previously been unsuccessful in school became high achievers in new areas.

The results of the case study project indicates that students who were taught by the use of Multiple Intelligence Theory developed more than it used to be. This is due to the fact that the Multiple Intelligence Based Teaching of English is more effective than the conventional method of teaching English (Christison, 1996). Multiple Intelligence based teaching helps the students not only to improve the academic achievement in English but also provides opportunity to develop their multiple capabilities of learning. Implementing the Multiple Intelligence Theory in the classroom develops the readiness of the students to gain the knowledge of English. Besides it motivates the students to understand the concept easier than the traditional way (Christison, 1998).

On the other hand, by the awareness of their learners' diversity in the classroom, teachers develop new ways and activities related to the MIT in the process of their courses. Using innovated ways of teaching helps the teachers to solve the teaching difficulties. Here are some activities which can be done by the teachers who implement the MIT in the classroom;

### ***Verbal/Linguistic Intelligence***

*Vocabulary & Grammar Learning* -- learning new words and grammatical points and practicing using them accurately in regular communication

*Listening* -- listening to tapes of stories, dialogues, and lectures, etc.

*Formal and Informal Speaking* -- making verbal presentation to others, making conversations, having discussions and debates, etc.

*Humor or Jokes* -- creating puns, limericks, and telling jokes on topics of study

*Impromptu Speaking* -- instantly speaking on a randomly drawn topic

*Storytelling* -- telling stories about any topic one is studying

*Reading* -- silent reading, oral reading, and group/choral/chain reading for comprehension

*Writing* -- doing written exercises, note-taking, summary/report writing, and journal/log/diary keeping to keep track of one's own thoughts and ideas

*Creative Writing* -- writing original pieces (e.g., stories, essays, poems, novels, etc.)(Christison, 1998)

### ***Logical/Mathematical Intelligence***

*Logic Pattern Games* -- creating riddles or puzzles that challenge students to find a hidden rationale or pattern

*Logical/Sequential Presentation* -- inventing point-by-point logical explanations for items or making systematic presentation of subject matter

*Number Sequences/Patterns* -- investigating numerical facts or gathering and analyzing statistics on a topic

*Problem Solving* -- listing appropriate procedures for problem solving situations

*Forming Relationships* -- creating meaningful connections between different ideas

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*Syllogisms* -- making "if..., then..." logical deductions about a topic (Lazear, 1999).

***Visual/Spatial Intelligence***

*Visual Aids Using/Making* -- using flash cards, pictures, paintings, charts, collages, graphs, grids, diagrams, flowcharts, slides, sculptures and video/film-viewing, etc. to facilitate learning and encouraging students to make the visual aids by themselves

*Active Imagination* -- finding connection between visual designs (or pattern) and prior experiences (or knowledge)

*Mind Mapping* -- creating or arranging visual mapping activities (e.g. word maze, visual webs of written information)

*Environment Arranging/Decorating* -- encouraging students to decorate bulletin boards, and arranging learning corner (e.g. English reading corner) to achieve the effect of peripheral learning (Po-Ying, 2010).

***Bodily/Kinesthetic Intelligence***

*Physical Actions* -- arranging and doing TPR and hands-on activities

*Body Language* -- "embodying" meaning, interpretation, or understanding of an idea in physical movement

*Role Playing/Mime* -- performing skits or characters to show understanding of topics of study

*Dramatic Enactment* -- creating a mini-drama that shows the dynamic interplay of various topics of study

*Sports Games* -- creating a contest or game based on specific knowledge about a topic of study

*Field Trips* -- arranging trips to gain firsthand knowledge away from the classroom (Po-Ying, 2010).

***Musical/Rhythmic Intelligence***

*Music/Song Listening* -- listening to rhythmic patterns, recorded music, or songs

*Singing/Humming* -- creating songs for a class, a team, a topic of study or finding existing songs that complement a topic

*Musical Instruments Playing* -- employing musical instruments to produce sounds for a lesson (e.g., background accompaniment, enhancement for the teaching)

*Music Composition/Creation* -- composing and creating music for the sound effect of a play performance or for the enhancement of teaching

*Jazz Chants/Rapping* -- producing or using rhythmic patterns, such as jazz chants, or raps to help communicate, or to remember certain words, sentence structures, concepts, ideas, or processes

*Vocal Sounds/Tones* -- producing sounds with one's vocal cords to illustrate the meaning of a word, or a concept (e.g., hiccup, gasp, etc.) (Po-Ying, 2010).

***Interpersonal Intelligence***

*Person to Person Communication* -- focusing on how teachers and students relate to each other and how to improve their relating

*Giving and Receiving Feedback* -- offering input on one's performance or about one's opinions; and accepting another's input or reaction to one's performance/ opinions

*Cooperative Learning Strategies* -- using structured teamworks for topic learning and/or practicing peer learning

*Pair Works and Group Projects* -- investigating and discussing a topic problem with a partner or with others in teams

*Jigsaw Puzzle/Strip Story* -- dividing a picture or a story into distinct segments so that students can learn from each other on the process of putting it back to its original form (Po-Ying, 2010).

***Intrapersonal Intelligence***

*Independent Studies/Projects* -- encouraging students to work independently for goal-setting, process-planning, self-assessing, and homework choosing

*Journals/Logs/Diaries keeping* -- working with reflection tools, such as reflective journals, thinking logs, learning diaries, etc.

*Focusing/Concentration Skills* -- learning the ability to focus one's mind on a single idea or task

*Thinking strategies* -- learning what thinking patterns to use for what task (Po-Ying, 2010).

***Naturalist Intelligence***

*Nature Encounters/Field Trips* -- going outside for firsthand experiences in nature and/or bringing nature in the classroom via videos, objects, animals, plants, etc.

*Species Classification* -- working with classification matrices to understand characteristics of natural objects

*Sensory Stimulation Exercises* -- exposing the senses to nature's sounds, smells, tastes, touches, and sights

*Hands-On Labs* -- performing experiments or activities that use objects from the natural world

*Nature World Simulations* -- re-creating or representing nature in some form (e.g. photographs, drawings, etc.)(Singh, 2009).

**Conclusions and Recommendations**

The MI theory offers a richly diversified way of understanding and categorizing human cognitive abilities, and combinations of abilities, heightening awareness of what makes learning possible and effective for individual students. Moreover, teaching strategies grounded by the MI theory offers students choices in the ways they will learn and demonstrate their learning (Arnold & Fonseca, 2004). 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. To this end, the implementation of the MI theory in the English language teaching offers a better understanding of students' learning preferences and a greater appreciation of their strengths. Students likely become more engaged in learning as they use learning modules that match their intelligence strengths that, in addition, increase students' engagement and success in learning. Generally speaking, implementation of the MI theory into the English language course provides numerous opportunities for students to use and develop all eight intelligences not just the few they excel in prior to matriculation.

English language teachers should be aware of that there are different learners with different intelligence and each of their learning way is unique. the Multiple intelligence Theory offers the language teachers different ways of teaching to different learners and also it inspires the teachers new innovative teaching techniques.

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