CHAPTER 3

Intelligence, Multiple Intelligences and EFL Pedagogy

"If we are to achieve a richer culture, rich in contrasting values, we must recognize the whole gamut of human potentials, and so weave a less arbitrary social fabric, one in which each diverse human gift will find a fitting place."

Margaret Mead\(^1\)

Introduction

As a matter of fact, English language teaching and learning is one of the most demanding courses all over the world. Not only because of this fact, but also because of the interdisciplinary role of the English language in the other fields of study it is an area which is directly shaped by the new findings and achievements in human sciences like psychology and sociology and also it is indirectly influenced by economic and political affairs or technological developments. As we can see, the recently evolved approaches namely Whole Language Learning, Cooperative Learning, Personalized Learning and Learner-Center Instruction originate from new paradigms in the spheres of psychology and sociology.

Today, teachers and educationists are expected to train people who can be productive as well as be able to survive in the competitive real world and not only in the school world. In line with this goal, they need to keep updating their teaching methodologies with the most recent and suitable theories about human beings. The theory of multiple intelligences is one of those inspiring and influential theories. Apparently, lot of work and practice are needed to learn how to apply a new theory in the educational setting in order to make the best and appropriate advantage of it. As it can be true about any other theory, misunderstanding or superficial understanding of multiple intelligences theory might not only keep us away from the ideal goals but can also lead to harmful results.

\(^1\) qtd. in Keen & Cummings 2008: 126
The present chapter provides a comprehensive introduction to the theory of multiple intelligences (hereafter MIT). It discusses for and against standpoints, alternative views on intelligence, the impact of the theory in education and its implication in EFL and relevant topics.

3.1 Varying Opinions on Intelligence

Mankind has always been interested in having a figure showing the strength of their mental capacity and to predict their future achievement based on it. This mental or intellectual capacity was named intelligence in the early works of psychologists who worked to define and measure this ability.

Among the earliest views of intelligence was the influential Two-Factor theory of the British educational psychologist Charles Spearman. He believed in an underlying single intelligence, a general factor of intelligence, known as ‘g’ factor. He argued that all mental abilities develop from a grounding which is general intelligence, “Spearman saw intelligence as comprising a central pool of energy that was required for all cognitive tasks” (Fogarty, 1999, p.5).

In contrast with Spearman’s theory, the American Psychometrician Thurstone proposed the existence of different types of intelligences. He believed that human intelligence consists of seven primary mental abilities which are independent of one another and are measured by different intellectual tasks. These abilities include: verbal comprehension, verbal fluency, numerical fluency, spatial visualization, memory, perceptual speed and reasoning.

The Swiss psychologist Jean Piaget took a somewhat different perspective towards intelligence, he looked at human learning as a developmental process. Gardner et al (1996) write in Intelligence: Multiple Perspectives:

He was interested in the principles of mental development that obtained across all normal human beings. For him, intelligence was a property of the species - just like language or depth perception or for that matter puberty. One should study intelligence in a way analogous to the way that one would study any universal property of humankind. (p.101)
As Gardner (1993) says, “He came to believe that when tackling items in an intelligence test, it is not the accuracy of the child’s response that is important rather the lines of reasoning the child invokes” (p.18). Piaget outlines four stages of intellectual development including, sensorimotor stage, preoperational stage, operational stage, concrete operational stage and formal operational stage.

A set of theories of intelligence which propose a broader definition of intelligence than the conventional ones take into account the absent element in the previous theories, i.e., the role of environment, social and cultural context. The other psychologists look from different lenses at the concept of intelligence. This body of psychologists like Robert Sternberg and Daniel Goleman call for the element which was missing in the traditional theories of intelligence, which is adaptability to one’s environment. Goleman puts forth the theory of Emotional Intelligence, he opines that intelligence is about how we communicate with one another, and how this allows us to be successful in our life. He claims that:

…intelligence can come to nothing when the emotions hold sway….in a very real sense we have two minds. One that thinks and one that feels…These two minds, the emotional and the rational operate in tight harmony for the most part, intertwining their very different ways of knowing to guide us through the word. (Goleman, 1995, p.4, 8 & 9).

According to Goleman, Emotional Intelligence refers to how we manage ourselves and how we manage our relationships, how self-aware we are, how can we handle distressing feelings effectively, how empathic we are, how socially-skilled and able we are. He opines that emotional intelligence is not necessarily more important than IQ, but it is certainly as important as it is. He specifies five components of Emotional Intelligence, such as self-awareness, management of emotions, motivation, empathy, and social skill. He argues that, unlike IQ which is stable through life, emotional intelligence continues to be learned. It tends to increase on average over every decade of life.

Sternberg (2005) proposes the theory of successful intelligence and defines intelligence as:

1) the ability to achieve one’s goals in life, given one’s socio-cultural context; 2) by capitalizing on strengths and correcting or compensating for weaknesses; 3) in order to adapt to, shape, and select environments;
intelligence, and 4) through a combination of analytical, creative, and practical abilities. (p.1)

He distinguishes the following three types of intelligence:

1. **Analytical Intelligence**: It deals with the ability to compare and contrast things, to reason, to do mathematical computations. It is concerned with logical and critical thinking skills. This is that set of abilities which is measured in school and academic settings and is labelled as the index of one’s intelligence.

2. **Creative Intelligence**: It has to do with the ability to cope with relative novelty, to use existing information or experiences to approach a new task in current situations, the way one forms new ideas to tackle a problem.

3. **Practical Intelligence**: It has a bearing on one’s ability to tackle the problems facing in daily life, how one is able to apply his ideas to thrive in the world. This intelligence involves the ability to adapt to the environment or change it so that one can survive.

### 3.2 The Theory of Multiple Intelligences (MIT)

The theory of multiple intelligences was propounded by cognitive psychologist Howard Gardner. In his famous book *Frames of Mind* (1993) Gardner defines intelligence in a broader sense than the conventional definitions. He believes that “intelligence cannot be simply conceptualized as a single general capacity; rather human beings possess a set of intelligences which work more or less autonomously” (Gardner, 1993, p. xii). According to this new definition, intelligence is an ability which is truly defined considering the context within which humans live and develop. In this definition, a good deal of significance is placed on the element of culture. Intelligence here is considered as “the ability to solve problems or to create products that are valued within one or more cultural settings” (Gardner, 1993, p.xxviii). Intelligence is considered as a culture-bound ability, which means that it cannot be defined or assessed independent of its context. Gardner gives the example of a twelve-year-old male Puluwat in the Caroline Islands, who is taught to get a mastery of knowledge of sailing, stars, and geography so as to find his way around hundreds of Islands, or a fifteen-year-old Iranian youth who has committed to heart the entire
Quran and mastered the Arabic language to become a religious leader (Gardner, 1993). Through these examples, he highlights that some performances can be highly valued in a certain cultural setting while they might be of no worth in another. These performances or abilities can be developed or nurtured based on the environment in which one grows or being educated. Therefore, aside from confirming biological basis of multiple intelligences, the role of context and environment cannot be ignored in developing intelligences in individuals.


...building upon the findings from neurobiology, studied in molar as well as molecular terms, we receive a powerful hint about the possible “natural kinds” of human intelligence. We cannot (even should we wish to) neatly factor culture out of this equation, because culture influences every individual (except possibly some freaks) and will, therefore, necessarily color the way that intellectual potentials evolve from the first. But the universal intrusion of culture also confers an advantage upon our analysis. Culture makes it possible for us to examine the development and implementation of intellectual competences from a variety of perspectives: the roles the society values; the pursuits in which individuals achieve expertise; the specification of domains in which individual prodigiousness, retardation, or learning disabilities may be found; and the kinds of transfer of skills that we may expect in educational settings. (p. 60)

In the words of Armstrong, whether an intelligence can develop, depends upon three main factors:

1. Biological Endowment: This includes heredity or genetic factors and insults or injuries to the brain before, during, and after birth.

2. Personal Life History: This second factor includes experiences with parents, teachers, peers, friends, and others who awaken intelligences, keep them from developing, or actively repress them.
3. Cultural and Historical Background: This factor includes the time and place in which you were born and raised and the nature and state of cultural or historical developments in different domains. (Armstrong, 2009, p.27)

Multiple intelligences theory suggests that humans can be intelligent in many ways rather than in only one or two ways. Gardner (1993) challenges the traditional IQ test and states that:

It is simply based on tests with predictive power about success in school and, only marginally, on a theory of how the mind works ... the tasks rely heavily upon language and upon a person’s skill in defining words, in knowing facts about the world, and in finding connections and differences among verbal concepts. (p. 19)

Gardner (1999) maintains that:

Each of his intelligence domains has unique processing resources, and that there are no horizontal capacities, such as memory or creativity, that cut across all hypothesized intelligences. Instead, he views creativity as an operation performed within a domain, rather than as a general, cross-cutting ability. (Cited in Visser et al, 2006, p.488)

Positing a prerequisite for his theory of multiple intelligences, Gardner contends that:

…a human intellectual competence must entail a set of skills of problem solving – enabling the individual to resolve genuine problems or difficulties that he encounters and, when appropriate, to create an effective product – and must also entail the potential for finding or creating problems – thereby laying the groundwork for the acquisition of new knowledge. (Gardner, 1993, pp. 64-65)

In his first attempt to introduce his theory of multiple intelligences, Gardner came up with seven intelligences, though later on, he added one more intelligence to the list. He believes that there might still be other potential intelligences. About the number of intelligences he exclaims:
I have always conceded that in the end, the decision about what counts as intelligence is a judgment call—not an unambiguous determination following the rigorous application of an algorithm. So far, I am sticking to my 8½ intelligences, but I can readily foresee a time when the list could grow, or when the boundaries among the intelligences might be reconfigured (Gardner, 1993).

Given below is the list of Gardner’s multiple intelligences with their brief definitions:

1 Linguistic Intelligence: This intelligence refers to persons possessing command over language and it's uses and functions. While on one hand persons with this intelligence have sensitivity to and command over such aspects of language like semantics, phonology, syntax and pragmatics, for instance like poets, on the other hand, linguistic intelligence involves the ability to put language in its major uses, including rhetorical aspect of language (an ability to convince others like leaders), or using mnemonic potential of language, that is, to remember information, or to use language for explanation, or the ability to use language to explain its own activities or metalinguistics.

2 Musical Intelligence: It means a sensitivity to the constituent elements of music, consisting of pitch (or melody), rhythm and tone or to the larger musical patterns. This sensitivity can manifest in composing a musical pattern which happens in the wake of transferring an aural imagination into musical patterns as composers. It might also happen through expressing the perceived pattern in performance as an instrument player or a singer.

3 Logical-Mathematical Intelligence: It has to do with the mathematical and scientific patterns and relationships, “an imageless form of thinking” (Armstrong, 1999, p.95). It includes the ability to solve logical-mathematical problems, to think by numbers (e.g., as a mathematician) as well as the ability to discern cause and effect relationships and to reason and categorize (e.g., as scientists and logicians). This intelligence begins to develop from the early ages. Once we get a grasp of the logical-mathematical intelligence and the spatial intelligence we will find an
interplay between these two intelligences to some extent. Gardner (1993) says “to be sure, there have been, and will continue to be, productive interactions between logical-mathematical and spatial intelligences in areas like chess, engineering, and architecture” (p. 177).

4 Spatial Intelligence: According to Gardner, the central to spatial intelligence are the capacities to perceive the visual world accurately, to perform transformations and modifications upon one’s initial perceptions, and to be able to re-create aspects of one’s visual experience, even in the absence of relevant physical stimuli. This intelligence is manifested in people like decorators, architects and land surveyors.

5 Bodily-Kinesthetic Intelligence: It refers to having mastery over one’s body motions, that is, the ability to use the body skillfully. The ability to express oneself through one’s body movements and postures (like dancers, swimmers and actors). It also entails manipulating the objects proficiently and to create things (e.g., artisans, mechanics and surgeons).

6 Interpersonal Intelligence: A person with this intelligence has the ability to appreciate the feelings, intentions, desires, moods and temperaments of people and make distinctions in them. In an advanced form, it also means bearing the capacity to act upon this knowledge, that is, to manipulate this knowledge to influence people and to get help from them to attain one’s goals. Political and religious leaders, skilled teachers, business executives are examples of people who demonstrate this intelligence. Accentuating the importance of interpersonal intelligence in individuals’ life, Falk (2010) argues:

   Success is measured in many ways in school and in life. Real success, though, comes with a sense of happiness and satisfaction. Human beings need human interaction and relationships. The goal in all schools should be to recognize the value of the interpersonal intelligence and to teach and encourage its development in every student. (p.11)

7 Intrapersonal Intelligence: It provides “the core capacity at work here is access to one’s own feeling life” (Gardner, 1993, p.253). Awareness of inner
moods, feelings, emotions and desires. To know oneself and act upon it. According to Sternberg (1986), “this skill involves knowledge about how to manage oneself on a daily basis so as to maximize one’s productivity” (p. 55, 56). The ability to set goals and plan for one’s own life. To know one’s strengths and limitations. People like therapists, writers, wise elders of society have developed this intelligence in them. “The ability to focus one’s attention and learn how to hold it for a longer span of time is an important skill that intrapersonally strong people usually have. It is also a cognitive skill that, psychologists claim, forms an important basis for the development of a number of so-called higher-order skills, like categorizing and critical thinking”. (Puchta and Rinvoluceri, 2005, p.128) Concerning the personal intelligences (interpersonal and intrapersonal intelligences), Gardner states that “The varieties of personal intelligences prove much more distinctive, less comparable, and perhaps even unknowable to someone from an alien society” (Gardner, 1993, p.254).

8 Naturalist Intelligence: This reflects upon the expertise in knowing and classifying the living things – the flora and fauna – in the natural world. It has to do with the ability to understand and recognize the patterns in the environment. People like Zookeepers, gardeners, and veterinarians are among people who have high naturalist intelligence. However, due to drastic changes in today’s life styles this intelligence can be manifested in some other way as Gardner says, like if a child grows up in an urban environment, and has no exposure to the natural world of living things, then he or she may transfer the components of the naturalist to objects of the city. For example, a child may use this capacity to discriminate among certain types of CD album covers, sneakers, or automobiles. (Cited in Armstrong 1999, p.228)

3.3 Criticism of the Theory of Multiple Intelligences (MIT)

The theory of multiple intelligences has been criticized from various standpoints, running the gamut from its terminology to its incapability to be put to test. Many have alleged what Gardner calls musical or spatial intelligence could have simply been called talent, aptitude, domain or discipline. However, Gardner (1993) believes that:
In delineating a narrow definition of intelligence, however, one usually devalues those capacities that are not within that definition’s purview. Thus, dancers or chess players may be talented but they are not smart. It is fine to call music or spatial ability a talent, so long as one calls language or logic a talent as well. (p. xxxviii)

Drawing a distinction between intelligence and other concepts like domain or discipline, Baum et al (2005) explicate that:

An intelligence is the ability of the brain to deal with particular types of information, the biopsychological potential we bring to bear on any given task or activity. A domain or discipline is an organized set of activities within a culture in which individuals participate on more than a casual basis and in which certain levels of expertise exist and others can be developed. Gardening, musical performance, chess, and dance are all examples of domains. (Baum et al, 2005. P.26)

Some writers, for example, Morgan (1992) and Visser et al (2006) have accused MIT of bearing striking resemblance to other concepts and theories such as hierarchical models of intelligence, cognitive style constructs and learning styles and relabeling them as intelligence. In other words, they believe that nothing is new in this theory.

McKenzie believes that,

Talents, gifts and aptitudes connote abilities that are above and beyond the realm of simple human understanding, such as the ability to play a musical instrument well or set new records in athletic competitions. Learning styles, meanwhile are fixed modes of understanding that a learner uses regardless of the instructional context. Intelligences are more than either of these. They are legitimate conduits of cognition that can be flexibly applied across the curriculum in varied context by all learners. (McKenzie, 2005. p.1)

As founder of the MIT, Gardner admits that this theory may be similar to the theories which put forth various faculties of mind; he even admits that there may be an overlap between his list of intelligences and other lists like learning styles.
However, he believes that his sets of intelligences meet certain biological and psychological specifications. He explains that:

I arrived at the seven intelligences by a method I believe to be unique: the synthesis of significant bodies of scientific evidence about development, breakdown, brain organization, evolution, and other kindred concepts. Most other lists are a consequence either of the correlations among test scores or of empirical observations, for example of students in school. (Gardner, 1993, p.xxxix, xl)

Gardner clarifies that:

The concept of style designates a general approach that an individual can apply equally to every conceivable content. In contrast, an intelligence is a capacity, with its component processes, that is geared to a specific content in the world (such as musical sounds or spatial patterns)... an intelligence is a biological and psychological potential; that potential is capable of being realized to a greater or lesser extent as a consequence of the experiential, cultural, and motivational factors that affect a person. (Gardner, 1995. p.202)

Moreover, he stresses that it must be eschewed linking any of the intelligences to any particular sensory modality, like using the prefix auditory or oral in front of musical and visual in front of spatial intelligence because even a blind person and a deaf person can develop spatial intelligence and musical intelligence, respectively. They are merely modes of communication and should not be confused with the intellectual capabilities.

Intelligences are not equivalent to sensory systems. In no case is an intelligence completely dependent upon a single sensory system, nor has any sensory system been immortalized as an intelligence (at least, in part) through more than one sensory system. (Gardner, 1993, p.72)

Kezar writes, “MI builds on the research on learning styles, focusing on a more profound differences than style - an individual’s biopsychological potential” (Kezar, 2001, p.146). According to Gardner (1993), “It captures a reasonably complete gamut of the kinds of abilities valued by human cultures. We must account for the skills of a shaman and a psychoanalyst as well as of a yogi and a saint” (p.66).
To precisely delineate the definition of intelligence and distinguish it from any other kind of ability, talent or skill, Gardner sets up eight signs or criteria which have to be met by any intelligence to be considered intelligence, the criteria are briefly discussed as follows:

- **Potential Isolation by Brain Damage:** The operation of each intelligence is rooted in a specific area of the brain. So, as a result of injury of a particular part of the brain only certain faculties in the person would be destroyed. For example, a lesion to the left hemisphere of the brain (Broca’s area) will lead to impairment of linguistic intelligence. That is the injured person could have trouble reading, writing or speaking, though he can play a musical instrument, dance or do math.

- **The Existence of Idiots, Savants, Prodigies, and other Exceptional Individuals:** The absence of some intellectual skills and existence of some others to the highest degrees, like the uneven profile of intelligences in prodigies and savants, confirms the existence of distinct intelligences. For example, those savants who have an amazing ability in doing mathematical calculations still they lack abilities in making relationships with other people or language functioning.

- **An Identifiable Core Operations or Set of Operations:** There are a set of basic information-processing operations at the centre of each intelligence which gives rise to various intellectual performances. For example, sensitivity to pitch as one core of musical intelligences or the ability, or the ability to imitate movement by others as one core of bodily intelligence.

- **A Distinctive Developmental History, along with a Definable set of Expert End-State Performances:** Each intelligence has its own developmental history. It means that in normal as well as gifted individuals each intelligence arises, reach its zenith and then declines at a certain age. For example, musical intelligence develops from the early ages while mathematical intelligence doesn’t emerge as early as musical intelligence. Gardner believes that the identification of the development history of the intelligence and analysis of its susceptibility to modification and training is of the highest importance for educational practices.
• An Evolutionary History and Evolutionary Plausibility: Each intelligence roots in the evolutionary history of human beings. For example, archeological evidence of early musical instruments and the cave drawings of early human beings support the existence of musical and spatial intelligence, respectively.

• Support from Experimental Psychological Tasks: Intelligences work separately. Psychological experimental tests can be used to confirm the relative autonomy of each intelligence. For example, one who has mastery in reading or writing skills may fail to perform well in mathematical tasks. Gardner (1993) asserts that “experimental psychology can help demonstrate the ways in which modular or domain specific abilities may interact in the execution of complex tasks” (p.70).

• Support from Psychometric Findings: Many existing standard tests can verify the existence of intelligences. However, Gardner was an opponent of using standardized tests for measuring intelligence as a general factor. He declares that, “outcomes of psychological experiments provide one source of information relevant to intelligences; the outcomes of standard tests (like IQ tests) provide another clue” (Gardner, 1993, p.70).

• Susceptibility to Encoding in a Symbol System: Each intelligence has the capacity to be encoded or symbolized. According to Gardner, this is one of the important factors which distinguishes human from other species. He says that a primary characteristic of human intelligence may well be its ‘natural’ gravitation toward embodiment in a symbolic system.

The impossibility of testing the multiple intelligences objectively by the standard measurement instruments like the pencil and paper tests which are used for measuring traditional quotient of intelligence (IQ), is another ground giving rise to the criticisms against the MIT. Some claim that this theory is not strongly founded because there is no test or set of tests which give a single score indicative of each intelligence in a candidate. As Visser et al (2006) state, “In 2006, there still does not appear to be any standardized testing instrument for the multiple intelligences” (p.489). On the other hand, while accepting the increasing widespread application of MIT in educational setting, White slams the theory and accuses it of lacking a solid foundation and an empirical support. He is of the opinion that, “MIT was not based on
empirical studies of how people behave, but on a subjective value-judgment of his own (Gardner’s) claims” (White, 2006, p.82).

Concerning this issue, Gardner (1993) believes that “it is not possible to assess intelligences in pure form” (p.xli). He further writes:

…the kinds of assessment I favor are entirely different from those associated with IQ testing. I discourage efforts to characterize individuals or groups as exhibiting one or another profile of intelligences. While at any moment a person or a group might exhibit certain intelligences, this picture is fluid and changing. (Gardner, 1993, p.xli)

Gardner stresses that:

…MI theory was never one that could be subjected to an ‘up and down’ kind of test, or even series of tests. Rather, it is and has always been fundamentally a work of synthesis; and its overall fate will be determined by the comprehensiveness of the synthesis, on the one hand, and its utility to both scholars and practitioners, on the other. (Gardner, 1993, pp. xix- xx)

In one of his articles dedicated to responding to the critics against MIT, Gardner explains that “My concept of intelligences is an outgrowth of accumulating knowledge about the human brain and about human cultures, not the result of a priori definitions or of factory analyses of test scores” (Gardner, 1995, p.202).

However, Gardner believes that tests and tasks are simply one and not the only way to assess the empirical support for MIT. The theory of multiple intelligences is essentially a work of scientific synthesis. “In my own view, findings from brain science and genetics will make crucial contribution to our understanding of intelligence and of intelligences in the years ahead” (Gardner 2006, p.505). However, Gardner admits that his theory may fail to be proved or measured by the available tasks or tests but they cannot be considered the only means to assess the empiricality of the theory. He claims that, “the MIT is based on neurological, evolutionary, and cross-cultural evidence” (Gardner,1993, p.xxxi). He has also dedicated a major part in his book *Frames of mind* in explaining the biological and neurological basis supporting the existence of multiple intelligences.
Gardner notes that:

Intelligence tests do not always test what they are claimed to test. Thus many tasks actually involve the use of more than their targeted ability, while many other tasks can be solved using a variety of means. Also, the stress on paper-and-pencil methods often precludes the proper test of certain abilities, especially those involving active manipulation of the environment or interaction with other individuals. Hence, interpretation of psychometric findings is not always a straightforward matter. (Gardner, 1993, p.70)

According to Gardner:

A crucial point is that there is a universal human temptation to give credence to a word to which we have become attached, perhaps because it has helped us to understand a situation better. Intelligence is such a word; we use it so often that we have come to believe in its existence, as a genuine tangible, measurable entity, rather than as a convenient way of labeling some phenomena that may (but may well not) exist. (Gardner 1993, p.74)

3.4 The Impact of MIT in Education

The main objective of developing and applying IQ test was to be used in educational setting. It was supposed to predict which students would succeed and which would fail in their course of study. In the other words it was meant to label some students as weak or slow learners – in worst conditions even as disabled – and some others as bright, strong and intelligent.

Once the MIT emerged, it was keenly welcomed by many teachers and educationists, especially those who didn’t find the IQ test comprehensive enough to be used as a predictive instrument among their students. In modern education system considering each student as a different individual has become a widely accepted and proved notion. According to Lin:

With the advent of humanism in the 60s of the 20th century, the conventional, authoritative teacher-centered instruction has given way to the learner-centered mode of instruction. Educators started paying attention to the impact
that learners’ affective factors (e.g., their feelings, emotions, tension, anxiety, frustration, needs, interests, motivation and confidence. Etc.) may bring in the process of learning. (Lin, 2006, p.1)

Gardner’s psychological perspective is in accordance with the recent trend in education, i.e., placing the learner at the center of attention. He believes that by using IQ tests to assess our students’ cognitive abilities we would ignore a wide variety of their abilities. He proposes that:

We should spend less time ranking children and more time helping them to identify their natural competencies and gifts and cultivate those. There are hundreds and hundreds of ways to succeed and many different abilities that will help you get there. (Cited in Fleetham, 2006, p.6)

The idea of implementing MIT in education is actually supported indirectly by scientific brain studies. According to Dr. Boyd (2015), the brain researcher from the University of British Colombia, every time you learn a new factor skill you change your brain, this is called neuroplasticity. The neuroplastic brain is constantly shaped by the word around you. Everything you do and everything you encounter and everything you experience is changing your brain and that can be for better but it can also be for worse. So, you can build the brain you want. The uniqueness of your brain will affect you both as a learner and as a teacher. This idea helps to understand why some children can thrive in traditional educational settings and others don’t. There is no one size fits all approach to learning. There is no recipe for learning. (Boyd, 2015)

Pritchard writes, “If the ideas set out by Gardner are to be taken seriously, then there are ramifications for the ways in which teachers teach and for the types of activities in which children in school are expected to take part” (Pritchard, 2009, p.35).

Christison (2005) posits that “MI theory has helped educators by providing a useful framework for talking about the differences we see among the students we teach” (p.3). This theory holds that no student is disabled; rather he or she has to be presented with suitable conditions to demonstrate his or her intellectual strength(s). “It provided a language for talking about the inner gifts of children, especially those students who have been given labels as “LD” and “ADHD” during their school careers” (Armstrong, 2009, p.1). By implementing MIT in a classroom, the boundaries of traditional classes would be overcome. With a wide spectrum of tasks
and techniques, the learners have the opportunity to maneuver their abilities and dig out their potentials. Gardner (1993) believes that MI theory overcomes three biases: ‘Westist’, ‘Bestists’ and ‘Testist’. Kezar briefly explains:

Westist refers to the tendency of Western societies to herald one or a few qualities or characteristics over others. Bestist refers to the belief that the answer to any solution is in one approach, such as linguistic thinking. Testist refers to focusing on the human abilities or intelligences that are most easily testable. (Kezar, 2001, p.143)

3.5 The Implementation of MIT in EFL

Gradually MIT gained popularity among teachers in various fields and subjects including in English language teaching area. However, many believe that it is not a new theory and they have already been taking into consideration the differences among their students through expanding their teaching methods beyond the verbal pedagogy, that is to say, by practicing a multimodal teaching. These teachers do not confine their teaching to the blackboard and textbooks but they rely on various ways to spark the minds of their students. This point is nicely displayed in such movies like Dead Poets Society (1989), Stand and Deliver (1987), Taare Zameen Pe (2007), Beautiful Mind (2001), The Chorus (2004), and To Sir, with Love (1967).

Armstrong believes that:

Many recent alternative educational models essentially are multiple intelligence systems using different terminologies (and with varying levels of emphasis upon the different intelligences). Cooperative learning, for example, seems to place its greatest emphasis upon interpersonal intelligence; yet specific activities can involve students in each of the other intelligences as well. Similarly, whole language instruction has at its core the cultivation of linguistic intelligence, yet it uses music, hands on activities, introspection (through journal keeping), and group work to carry out its fundamental goals. (Armstrong, 2009, p.56)

Likewise, Lin claims that:

Ever since the arising of the learner-centered instruction, every ELT method/technique with its specific emphasis has been developed to meet students’ different needs, or interests, somewhat as Gardner’s
intention of developing and/or using different kinds of intelligences. The Silent way, for example, emphasizes the development of students’ inner thinking (intrapersonal intelligence). The Total physical response, however, emphasizes language learning through physical action (bodily-kinesthetic intelligence). The Suggestopedia uses drama and visual aids as keys to unlock a student’s learning potential; in this approach music plays the greatest role in facilitating learning (musical intelligence). Both the Communicative Approach and Cooperative Learning seem to place its greatest emphasis on the importance of interpersonal relationship (interpersonal intelligence) to language learning. (Lin, 2006, p.2)

It must be kept in mind that MIT is not a fixed instruction to be followed strictly by teachers in every classroom. Rather, it is a psychological trend which could be used aptly in education. There is not and there will not be any text or document to tell you how to infuse MIT into your classroom since it would be against the nature of the theory. This theory is more like a guiding map than a prescription. A map that shows the various ways to teachers to reach the more or less same goals. Then, it is up to the teachers to utilize this map to find the way which suits best their classrooms, learners and objectives.

Fleetham (2006) maintains that:

MI is not an educational bolt-on or quick fix. It is not a curriculum, strategy or a catch up program. Nor it is a trendy educational gadget—here today, gone tomorrow. MI is a scientifically validated philosophy that has been steadily absorbed into classrooms worldwide over the last 20 years…MI is not a panacea but it can bring life and success to every classroom. (p. 5, 7)

Furthermore, MIT is not that sort of theory to be restricted to any particular teaching context. As Armstrong (2009) states:

The theory can be implemented in a wide range of instructional contexts, from highly traditional settings where the teachers spend much of their time
directly teaching students to open environments where students regulate most of their own learning...teachers can implement the theory in ways suited to their own unique teaching style and congruent with their educational philosophy (as long as that philosophy does not declare that all children learn in the exact same way). (Armstrong, 2009, p. 57, 64)

The mode of presentation is the most vital point which must be taken into account in MI-based instruction. An MI-based class is not a place in which teacher relies on merely one or two modes of presentation, say, oral or written. Rather, as Armstrong (2009) states, “In the MI classroom, the teacher continually shifts her method of presentation from linguistic to spatial to musical and so on, often combining intelligences in creative ways” (p. 56).

There are many examples of teachers claiming that they have implemented the MIT in their classes, however, not all of them have been successful in fact since they have merely practiced the MI ideas based on a superficial, one-dimensional understanding of MIT. On the other hand, there are few centers and institutions around the world which are famous for being founded and run based on MIT principles. For example, New City School in Missouri. “New City School was founded in 1969 on a commitment to diversity, equity, and justice. Valuing diversity is a core tenet of New City School and often a reason that people choose to send their children to New City School” (Diversity, n.d).

Key Learning Community, located in Indianapolis, Indiana, is another world famous school built on MIT-inspired curriculum. It opened in 1987. Edutopia writes on their webpage about their school:

Cultivating multiple intelligences at the Key Learning Community with a curriculum based upon Howard Gardner's theory of multiple intelligences. This K-12 Indianapolis school emphasizes exploration and deep understanding over rote memorization. Students are highly engaged and present portfolios of their work every year. (Cultivating Multiple Intelligences, 2002)

Here, a number of general steps are presented which are considered necessary to be remembered and followed carefully by teachers to take the most advantage of MIT in their classrooms. They include, gaining a comprehensive understanding of the MIT and teaching learners about the theory, recognizing your own intellectual
strengths, as a teacher, as well as your students’, matching the teaching strategies with the principles of the MIT, designing MI-based curriculums and lesson plans and finally adapting the assessment methods with the postulates of MIT. These steps are discussed in detail as follows:

3.5.1 To Gain a Comprehensive Understanding of MIT and Convey it to the Learners

Having a thorough and correct understanding of the theory of MI is the first and foremost step for bringing MIT into our classroom. As is already mentioned, MIT is not by nature a pedagogical discipline, however, since it is in accordance with the new trends in educational settings it has been adapted by teachers and educationists to meet the needs of their students and goals of their teaching. It is up to the teachers to gain a full knowledge of this theory and convey it to their students as well. They should make a clear image of this theory in the minds of their students and clarify any misconception about this theory. McClaskey (1995) writes:

…students' strengths can be used to develop other intelligences in which they may show less promise….. It is not enough that teachers learn to recognize the types of intelligences of their students; rather we must find ways to share that knowledge with the students themselves so that they will be able to use their skills in situations outside of our classroom. (p.59)

In implementing this theory there are instances of inappropriate usage. Teachers sometimes use it as a labeling device. They call their students, say, linguistic intelligent or bodily intelligent. However, labeling or ranking of individuals is against the very nature of the theory of multiple intelligences. As Gardner intended the MIT is supposed to be used as a powering device by helping individuals discover their different abilities and seeing themselves intelligent in many ways.

There are a couple of essential points regarding the MIT that having a clear idea about them and considering them in our classes will help us as teachers implement this theory in the proper way and make a promising MI-based class. These points are listed and discussed as follows:

Each Person Possesses All Eight Intelligences: one of the tenets of MIT is that all human beings possess all eight intelligences though in varying degrees. Every person has his own special capabilities in each intelligence. Some people seem to perform excellent in one intelligence but underdeveloped in some other. However, it does not
mean that they this intelligence does not exist in them. In fact, depending on different environmental influences the intelligences are encouraged or suppressed in individuals. It is incumbent upon the teachers to provide their students with the encouraging environment as much as they can. They have to be careful not to overlook, underestimate or repress any sign of intelligence in learners. Armstrong explains activators and deactivators of intelligences while using new terms, ‘crystallizing’ and ‘paralyzing’. He writes:

Crystallizing experiences and paralyzing experiences are two key processes in the development of intelligences. Crystallizing experiences, a concept originating with David Feldman (1980) at Tufts University and further developed by Howard Gardner and his colleagues (Walters & Gardner, 1986), are the “turning points” in the development of a person’s talents and abilities. Often these events occur in early childhood, although they can occur anytime during the life span. Conversely, I use the term paralyzing experiences to refer to experiences that shut down intelligences. Perhaps a teacher humiliated you in front of your classmates when you showed your drawing during art period, and that even marked the end of a good part of your artistic development. (Armstrong, 2009, p.28, 29)

Pritchard (2009) also talks about the impact of learning situations on intellectual development:

An individual’s particular strengths in intelligences have a direct bearing upon the way in which their learning takes place. For example, someone with interpersonal strengths would be most likely to learn effectively in a social situation where relating ideas and knowledge to others can be encouraged. The opposite might be true for an individual with low interpersonal intelligence but a strength in intrapersonal intelligence. (p.35)

Most People can Develop each Intelligence to an Adequate Level of Competency: As it was discussed above, depending on situational factors the intelligences can progress or be suppressed. All eight intelligences have the potential of a reasonably high level of functioning if they are furnished with the appropriate encouragement, available resources and proper instruction. As Gardner (1993) says:
Far from believing that intelligences are set in stone, I believe that they are subject to being considerably modified by changes in available resources and, for that matter, in one’s perceptions of one’s own abilities and potentials (Dweck and Licht 1980). The more one believes in the contextual and distributed views of intelligence, the less sense it makes to posit inherent limits on intellectual achievement. (p. xli)

Intelligences Usually Work in Complex Ways: Intelligences do not work in isolation but they interact with each other. “What makes a multiple intelligences approach so powerful is the focus on patterns of interactions among the intelligences” (Moran & Gardner, 2006). According to Moran and Gardner (2006), intelligences can interact in three main ways: interfere with each other, compensate for each other, and catalyze each other. Tirri and Nokelainen (2011) also explain:

Interference means that one intelligence may get in the way of another intelligence expressing itself to its fullest ability. A student with good social skills may have trouble making friends because she cannot speak well. A linguistic intelligence weakness interferes with an interpersonal strength. Or a student who can’t regulate his moods or thoughts can’t seem to finish his problem sets even though he knows the material. An intrapersonal intelligence weakness interferes with a logical-mathematical strength. (p. 123)

There are Many Ways to be Intelligent within each Category: It is possible that the core elements of each intelligence exist separately. It means that each intelligence can manifest in a different way in every person. For example, one who has a good command over the aspects of language and he writes plays or poems may not necessarily be a good orator or a politician while in both cases the linguistic intelligence has developed to a good extent. “MI theory emphasizes the rich diversity ways in which people show their gifts within intelligences as well as between intelligences” (Armstrong, 2009, p.16)
3.5.2 To Recognize your Own Intellectual Strength, as a Teacher, and to Introduce a Theory to Students

Multiple intelligences theory is an almost new theory in education. So, before applying it in their classrooms, teachers need to have a command over the theory and also apply it to themselves to determine their own intellectual strengths. According to Armstrong (2009):

Before applying any model of learning in a classroom environment, we should first apply it to ourselves as educators and adult learners, for unless we have an experiential understanding of the theory and have personalized its content; we are unlikely to be committed to using it with students. (p.20)

The intellectual preferences of teachers influence their teaching styles. For example, if one is bodily inclined he/she may stick to activities which mainly draw on bodily intelligence in the students and the other intelligences are not attended enough. There are some MI scales and inventories designed for children and adults (e.g. by Armstrong, Christison, McKenzie, Tirri and Nokelainen, etc). Teachers can use such inventories to get a general overview of their own as well as their students’ MI profile. However, it must be remembered that the scores which are obtained from these inventories must not be considered as the intelligent score of individuals. As Gardner stresses there is no test or questionnaire which can give an exact scale of one’s MI-profile. In this regard, Fleetham (2014) argues:

An MI questionnaire provides the opening credits to a dynamic film that tells the unique story of a learner’s skills, talents, potentials and achievements. It’s a film that doesn’t end. You never reach that definitive profile because learners continue to grow and change all their lives (p.34).

In fact, the most suitable and practical assessment of one’s multiple intelligences can be done through the practical evaluation of one’s proficiency in performing various sorts of activities, involvements and practices.

The other important step is to introduce the multiple intelligences theory to the students. A teacher you can give a lecture about the underpinnings of this theory or can make them familiar with different intelligences while practicing various activities which involve all intelligences. Teachers need to remind the students that they are all
intelligent. Nobody is supposed to think of himself or his classmates as dumb or a slow learner. It is upon the teacher to explain that they are different learners who learn in different ways and no way is superior to the other and they are all equally valued. It must be emphasized that all individuals have all intelligences though in different combinations. Students must be informed that they are going to learn in various ways using their all intelligences. Teachers must avoid students to label themselves or each other with one intelligent.

3.5.3 To Match your Teaching Strategies With the Principles of MIT

In an MI classroom keeping in mind the educational aims and objectives, teacher matches her strategies, methods and techniques with MIT principles. Applying MIT is neither about making the intelligences the end goal of teaching nor is it about teaching everything in eight different ways. Rather, it is a means to an end. “There’s no need to completely rewrite your planning to take account of multiple intelligences. Whether your planning is subject–based, short, medium or long term, or the whole curriculum, you can easily enrich it” (Fleetham, 2014, p.56).

Therefore, the starting block is to determine the set of goals towards which the theory will be applied and then picking up the appropriate strategies. In an EFL classroom, the primary goal of teachers and students is gaining proficiency in any or all four skills of reading, writing, speaking and listening. In an MI-based EFL class, these goals are to be met in eight ways. Here, teachers need to know how to teach and transfer the linguistic data (English language) through eight different channels. According to Armstrong (2009):

We should know how can we take a linguistic symbol system, such as the English language, and translate it not into other linguistic languages, such as Spanish or French, but into the languages of other intelligences, namely pictures, physical or musical expressions, logical symbols or concepts, social interactions, intrapersonal connections, and naturalistic associations. (p.64)

Teachers must arrange the strategies which they use in terms of the intelligences and skills that are counted on in them. Table 3.1 indicates the classified sample strategies and activities drawing on each intelligence which can be used in EFL classes. The skills at which each strategy targets is indicated in the figure as well. (The table is adopted from Rostami, 2016, p.340)
### Table 3.1

**Summary of MI-Based Teaching Strategies**

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Strategies</th>
<th>Activities</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistic</td>
<td>Brainstorming, tape recording, storytelling, reading, journal writing, talking</td>
<td>Writing a cinquain,</td>
<td>Creative writing</td>
</tr>
<tr>
<td>Logical-mathematical</td>
<td>Quantifying, categorizing, classifying, Socratic questioning</td>
<td>Sequencing paragraphs of a story</td>
<td>Paragraph writing</td>
</tr>
<tr>
<td>Spatial</td>
<td>Visualizing, drawing, idea sketching, creating graphic symbols, mind-mapping, coloring</td>
<td>Dreaming, imaginative activities, e.g. listening with your mind’s eye</td>
<td>Listening and speaking</td>
</tr>
<tr>
<td>Bodily-kinesthetic</td>
<td>Acting out, dancing, touching, building, hands-on thinking, body maps</td>
<td>Mime, classroom theatre, using bodily language, e.g. making a dialogue physical</td>
<td>Intensive listening and reading</td>
</tr>
<tr>
<td>Musical</td>
<td>using rhythms, songs, raps, chants, singing, listening</td>
<td>Making a dialogue musical</td>
<td>Intensive listening and reading</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Peer sharing, cooperative groups, board games, simulations,</td>
<td>Writing autobiography, sharing and discussing memories</td>
<td>Intensive writing, and speaking</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>Reflection periods, personal connections, goal-setting sessions</td>
<td>Reflection, dreaming and imaginative activities, e.g. fifteen minutes of yesterday.</td>
<td>Creative writing,</td>
</tr>
<tr>
<td>Naturalist</td>
<td>Nature walks, pet in the classroom, eco-study, connecting to living things and natural phenomena</td>
<td>Giving presentations on natural resources, wildlife, climate, etc. talking on behalf of an animal or plant</td>
<td>Listening, speaking</td>
</tr>
</tbody>
</table>
3.5.4 To Design MI-Based Curriculums and Lesson Plans

The first step which teachers have to take in designing MI lesson plans is to expand and diversify the scope of strategies, methods and materials in their classrooms. In an MI lesson plan different ways of learning, by means of engaging different combinations of intelligences are involved. MI lesson plan does not mean that each and every lesson has to be taught eight times employing eight types of intelligences. However, in an MI lesson plan, miscellaneous MI-based strategies and activities (as described in figure 1) span through the given course. As it already said, MIT is not about a set of rules or prescription which following them literally leads to an idealistic MI classroom. Rather, it offers a set of guidelines based on which the educators can design curricula. In an MI curriculum the instructional objectives, various themes, skills and content areas can be approached in the wake of employing at least eight different ways of teaching and addressing multiple intelligences in students. The thematic instruction provides a suitable bedrock for the multiple intelligences to be practiced since the themes imitate and mirror life more significantly than the isolated chunks of knowledge. “Themes cut through traditional curricular boundaries, weave together subjects and skills that are found naturally in life, and provide students with opportunities to use their multiple intelligences in practical ways” (Armstrong, 2009, p.67). It is up to the curriculum designers and policy makers to make a broad spectrum of resources and materials available for both teachers and educationists to count on various intellectual potentials of learners.

3.5.5 To Adapt the Assessment Methods with the Postulates of MIT

In an MI-based education, an assessment is considered valid and valuable which is built upon the evaluation of students’ competences in an intelligence-fair context. A context within which students have the opportunity to express their competencies in various ways, by their multiple intelligences, and not only through one or two just as they have been taught through different channels, so too they are given chances to demonstrate their competences in different ways. Otherwise, as it is said by Armstrong:

It would certainly be the height of hypocrisy to ask students to participate in a wide range of multispectrum experiences in all eight intelligences and then require them to show what they have learned through standardized tests that focus narrowly on linguistic or logical-mathematical intelligences. (Armstrong, 2009, p. 130)
In the other words, so long as the instruction is performed availing various contexts and domains, it would be unlikely that the output can be accurately measured in an intelligence specific context. Baum et al (2005) believe that:

Assessment should be multifocal, tapping not only one context but several. For example to assess linguistic abilities teachers may use a variety of real performances such as a story, report, or play, rather than a short-answer test. Likewise, assessment of spatial abilities may include domain-based activities such as reading and creating maps, designing bridges, doing a photography project or creating a mural. Using domains to think about integrating MI into assessment helps to keep the assessment authentic as well as ‘intelligence fair’; in other words, it assesses what it is claiming to assess. (p.24)

Gardner refers to the context, in his word ‘surrounding field’, as one of the significant elements which determines the acceptability of a performance. He notes that:

It makes sense to think of human cognition as an emerging capacity, one likely to be manifest at the intersection of three different constituents: the individual with his or her skills, knowledge and aims, the structure of a “domain of knowledge”, within which these skills can be aroused; and a set of institutions and roles – a surrounding field – which judge when a particular performance is acceptable and when it fails to meet the specifications. (Gardner, 1992, p. 88)

In another place, he maintains that:

The ability to perform on decontextualized measures is worth ascertaining; after all, in at least some vocational positions, it is important to be able to “bone up” quickly and work effectively with novel materials in unfamiliar surroundings. It could be maintained that the purpose of tests is to predict future performances in school, rather than outside of school; of course, such prediction is helpful mostly for those cases where a person actually remains in school—as do professors. (Gardner, 2011, p.145)
With an MI assessment approach, by providing the learners with varying scope of contexts these three constituents can be taken into consideration. By the same token, there are many advantages over standardized testing instruments. The aim of standardized testing instruments is by and large comparing the students’ performances and ranking them accordingly. While the results of MI assessments can be put into more practical uses, “they can be used to build on student strengths in subsequent instruction and curriculum, to bridge to student weaknesses, to assign or group children in enrichment groups or for projects, and to celebrate student talent (Baum et al, 2005, p.24).

In many cases, standardized tests are designed in a cultural setting which is quite different with the one in which the tests are administered. However, based on the MIT the cultural element occupies an important role in identifying and assessing one’s intellectual strengths. By overlooking this element, the standardized tests may devalue the capabilities or potentials which an individual can manifest in his/her real life events.

The application of only one or two intelligences, that is, linguistic and to lesser degrees, logical-mathematical intelligences are grossly weighted in the formal tests. While according to an MI assessment approach, every intelligence is equally important in gaining information about one’s competences. In this regard, Gardner (2011) argues that:

A contrasting set of assumptions is more likely to be educationally effective. Students learn in ways that are identifiably distinctive. The broad spectrum of students—and perhaps the society as a whole—would be better served if disciplines could be presented in a number of ways and learning could be assessed through a variety of means. (p. 13)

He adds that:

One consequence of the current situation is that many people unjustifiably deemed successes, as well as many needless casualties, emerge from contemporary educational systems. Those students who exhibit the canonical (in our terms “scholastic”) mind are credited with understanding, even when real understanding is limited or absent; many people can pass the test but fail other, perhaps more appropriate and more probing measures of understanding.
Less happily, many who are capable of exhibiting significant understanding appear deficient, simply because they cannot readily traffic in the commonly accepted coin of the educational realm. (Gardner, 2011, p.13)

3.6 Summing Up

The present chapter starts with defining the concept of intelligence from varying stances, then it gives a comprehensive introduction to the theory of multiple intelligences. The chapter then narrows down to the educational implications of MIT while it concentrates on the integration of this theory in EFL classes. It provides a detailed discussion on the various aspects of EFL wearing the MI glasses. The theoretical arguments in this chapter make the way for the empirical survey, which is conducted to inspect the status of multiple intelligences of foreign students at AMU. Data presentation and analysis of the survey will be discussed in the following chapter.
REFERENCES


