Implications of MI Theory For Designing ELT Materials

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Introduction

According to Howard Gardner (1983, 1993), intelligence refers to the human ability to solve problems or to make something that is valued in one or more cultures. He has identified eight intelligences so far and our intelligence profiles consist of combinations of different types: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist.

The multiple intelligences (MI) theory challenges the notion of IQ, leading to discussion of different abilities that make learning possible. For example, we can talk about a logical-mathematical ability or intelligence, or a linguistic ability or intelligence. This theory acknowledges that genetic factors may set some sort of upper limit on the extent to which an intelligence may be realized or the degree to which it may be modified in a given individual. Nonetheless, it maintains that given enough exposure to the materials of an intelligence, almost every individual can achieve significant results in that domain (Haggerty, 1995).

One of the questions commonly asked is whether we can strengthen our intelligences. Howard Gardner's response to this question is that "we can all get better at each of the intelligences, although some people will improve in an intelligence area more readily than others, either because biology gave them a better brain for that intelligence or their culture gave them a better teacher" (Checkly, 1997, p.10). Therefore, the role of the teacher is to help learners use their combination of intelligences to be successful, to help them learn whatever it is they want to learn as well as what the teacher and the society believe they have to learn. What Gardner opposes is the notion that there is only one way to learn how to read, one way to learn how to compute, etc. However, he also opposes the belief that everything should be taught in seven or eight ways. The point, therefore, is that any topic of importance, from any discipline, can be taught in more than one way.

What are the implications of this theory for English language teaching? More specifically, how can this theory contribute to materials production in English language teaching? Christison (1996) proposes that MI theory offers ESL/EFL

teachers a way to examine their best teaching practices and techniques in light of human differences and suggests two steps to be followed in understanding how MI theory applies to TESL/TEFL. The first step is to identify the activities that we, teachers, frequently use in our lessons and to categorize them. The second step is to track what we are doing in our lessons with multiple intelligences:

1. Awaken the intelligence: The lesson begins with a riddle or a teaser. The teacher divides students into groups and gives each one a series of riddles. The students then work collaboratively to solve the riddles.

2. Amplify the intelligence: Practice with the awakened intelligence and it will improve. Students practice describing commonly known objects.

3. Teach for/with the intelligence: Students describe objects in a large group discussion.

4. Transfer the intelligence: Help students to reflect on their learning in the previous stages and help them make the lesson content relevant to their lives outside the classroom. (p. 13)

Another implication of MI theory is creating a learner-centered classroom. Haley (2001) reports that teachers who used real-world applications of MI theory in their ESL/EFL classroom experienced a more learner-centered classroom, were energized and enthusiastic about their pedagogy, and felt they were able to reach more students. The teachers attributed this positive affective outcome to the greater degree of flexibility, variety, and choice that MI strategies allowed students in their classrooms. Their students, moreover, demonstrated keen interest in multiple intelligence concepts and showed positive responses to the increased variety of instructional strategies used in their EFL/ESL classrooms.

As the MI theory proposes, unless we, English language teachers, teach multi-modally and cater for all the intelligence types in each of our lessons, we can fail to reach all the learners in the group, whichever approach to teaching we adopt. It is also apparent that if we impose learning styles on our learners, they will prove to be ineffective. Learners with highly developed spatial intelligence, for example, will respond to the use of diagrams to record new vocabulary whereas this technique may have little or no impact on others who are more developed in other intelligences. As a result, in each lesson, we can reach the maximum number of learners if we employ activities that cater for many intelligences simultaneously. Christison (1995) believes that "success in helping our language learners develop their intelligences is a combination of the right environmental influences and quality instruction" (p. 10). Both environmental influences and quality instruction in the classroom can be managed through the teaching materials.

Does the fact that we have a unique profile of learners in each of our classes mean that we should plan individual lessons for everyone in the class to take this into account? Clearly, this would be impractical so the solution lies in including materials designed to appeal to each of the intelligences in every lesson we teach.

Principles for the Materials Designer

The following principles can guide the materials design process:

1. Appeal to more than one intelligence simultaneously, using the most appropriate instructional method for the teaching point. If an inappropriate instructional method is used, the effort to activate students' intelligences may lead to creating an artificial learning environment which may hinder learning rather than stimulating it. In addition to giving learners opportunities to benefit from the intelligences they are already strong in, materials that appeal to more than one intelligence at a time will give them the opportunity to strengthen their weak intelligences.

2. Use variety in content and text types. A multi-disciplinary approach to the same topic can provide the learner with different perspectives and different ways of thinking, leading to a critical analysis of the issue. For example, if World War II is the topic chosen for the English language lesson, reading passages from the disciplines of history, sociology, and economics provide the learners with different perspectives on the issue. Such variety in the perspectives materials provide will enable the learners to gain expertise in different areas, a desirable learning outcome which Garner defines as "multiple windows leading into the same room" (Gardner, 1995, p.204).

3. Give the students options about how they would like to learn both in class and outside class. This way, students confront their weaknesses and engage their strengths. Besides, since they are empowered to make choices, their ownership of their own learning improves. As Beckman (1998) puts it, "MI theory is a way of thinking, it is an attitude about people which allows for similarities and differences. It allows for inclusion and enrichment, for self-esteem building and the development of respect for each individual and the gifts they bring to the classroom." As learners make choices in the learning process they will become autonomous learners who respect the different ways in which different individuals learn.

4. Assess students' learning through activities that require more than just demonstration of what they have learned. Asking the students to generalize what they have learned, provide examples, connect the language learning to

their personal experiences, and apply their knowledge to new situations will make the learning more memorable and, therefore, long-lasting.

Having established the general guiding principles for the materials designer, the next question is how can the English language teaching materials cater for the different intelligences.

How to Cater for Linguistics Intelligence

Language learners who are fascinated with words and their manipulation, who enjoy expressing themselves orally and in writing as well as listening to stories are likely to have well-developed linguistic intelligence. Usually books are very important for these learners and they are good at games like Scrabble or password, both in the native language and in English. Group discussions, completing worksheets, giving and listening to presentations, word puzzles, word building games, story-telling, choral reading, and journal writing are among the activities that stimulate the linguistic intelligence in the English language classroom.

How to Cater for Logical-Mathematical Intelligence

Students who enjoy science subjects and working with computers are likely to have a high degree of logical-mathematical intelligence. These people are problem-solvers, capable of both deductive and inductive reasoning. They appreciate precision and like organizing information by sequencing and prioritizing it. Brainteasers or games that require logical thinking stimulate learners who are strong in logical-mathematical intelligence. Since they believe that almost everything has a logical explanation they want to learn the rules of the language. Materials that involve logic puzzles, logical-sequential presentations, problem-solving, guided discovery, and critical thinking stimulate learners' logical-mathematical intelligence.

How to Cater for Spatial Intelligence

Students with a high degree of spatial intelligence tend to think in pictures, are comfortable with maps, charts and diagrams, enjoy drawing, and are likely to make use of colored markers. When they close their eyes, they often see visual images and reading materials with lots of illustrations attract them. Visual problem-solving devices such as spider diagrams, memory maps, diagrams, movies, and imagination games are appropriate language teaching materials for such learners. Guided visualization (guided fantasy) can also be used to cater for spatial intelligence in the classroom. Mind-maps are effective tools in vocabulary presentation and recording.

How to Cater for Bodily-Kinesthetic Intelligence

Learners who are high in bodily-kinesthetic intelligence prefer to learn by doing. They enjoy working with their hands on concrete activities such as model-building, sewing, weaving, etc. Rather than just reading or seeing a movie about a new concept, they learn best when they practice it. They participate in a sport or a physical activity on a regular basis and enjoy spending time outdoors. This intelligence is activated through activities and games that involve physical movement, role-playing, dancing, miming, manipulating materials, and simulations.

How to Cater for Musical Intelligence

Learners who have a strong musical intelligence are sensitive to rhythm and patterns. They can easily identify and imitate musical and naturally occurring sound patterns. The language teaching materials usually serve two quite different roles: provide the learners with situations that lead to authentic communication and opportunities for the learners to practice the language. From the teacher's perspective, both of these roles are equally important but when analyzed from the learner's perspective, there is no need to be consciously aware of what new target language is being practiced. The need to communicate overtakes. As Berman emphasizes, "learning is more likely to take place when conscious attention is deflected from the goal, which is how incidental learning occurs" (Berman, 1998,: p. 25). For example, a certain task may have the goal of providing controlled practice of the target structure but the authentic reason of doing the task may be different for the students—that is, the communicative purpose of the task. The distinction between these two purposes of language teaching materials is significant when stimulating the learners' musical intelligence in the language classroom is concerned. Songs, jazz chants, and background music can be employed with the purpose of creating a need for authentic communication as well as providing practice.

How to Cater for Interpersonal Intelligence

Interpersonal intelligence refers to the ability to communicate and work with others. Learners strong in interpersonal intelligence usually enjoy the challenge of teaching others how to do something and, therefore, are good at peer teaching. They can freely express their opinions. They consider themselves leaders and enjoy holding a leading role in classroom activities. Cooperative learning, group activities, peer coaching, and pair work stimulate this type of intelligence.

How to Cater for Intrapersonal Intelligence

Intrapersonal intelligence indicates the ability to look with oneself to identify causes and to find solutions to problems. Learners strong in intrapersonal intelligence prefer to spend time alone, reflecting or thinking about important questions. They usually consider themselves to be independent minded or strong willed. Therefore, relaxation is the key to activating intrapersonal intelligence. Since they enjoy keeping a personal diary or journal to write down their thoughts or feelings about life, learner diaries are powerful tools for such students. Self-instruction, either learner-centered or materials-centered, prove to be effective in activating intrapersonal intelligence. Personal goal setting and learner contracts are useful in creating learner empowerment and autonomy.

How to Cater for Naturalist Intelligence

Naturalist intelligence is the ability to recognize plants, animals, and other parts of the natural environment such as clouds or rocks. This ability can also be used to deal with the world of man-made objects. When students look for patterns in the world around them, they see order in stead of chaos, which builds confidence in their understanding of how the world or the language works and gives them greater control over it. Naturalist intelligence can be catered for in the language classroom by noticing relationships, categorizing, and classifying. Observing plants and animals or collecting rocks would not appear to be immediately relevant neither would listening to the sounds of the natural world. However, natural sounds could be used in the background to help create an atmosphere conducive to students' feeling relaxed and able to produce their best work.

Table 1

Activities that Develop the Eight Intelligences

Intelligence	Teaching Activity	Instructional Strategies
LINGUISTIC INTELLIGENCE	-Group discussions -Completing work sheets -Giving presentations -Listening to Lecturers -Reading -Word-building games -Storytelling -Choral reading -Journal writing	Read about it, write about it, talk about it, listen to it
LOGICAL MATHEMATICAL INTELLIGENCE	-Logic puzzles -Logical-sequential presentations -Problem-solving -Guided discovery -Science experiements -Critical thinking	Quantify it, think critically about it, conceptualize it
SPATIAL INTELLIGENCE	-Charts -Mind-maps -Guided visualizations -Diagrams -Movies -Imagination games	See it, draw it, visualize it, color it, mind-map it

Table 1 Cont'd

Intelligence	Teaching Activity	Instructional Strategies
BODILY KINESTHETIC INTELLIGENCE	-Circle dancing -Brain gym -Role-play/drama -Relaxation exercises -Craft work -Simulation activities -Dance	Build it, act it out, touch it, get a feeling of it, dance it
MUSICAL INTELLIGENCE	-Songs -Jazz chants -Background music	Sing it, rap it, listen to it
INTERPERSONAL INTELLIGENCE	-Group work -Brainstorming -Games -Pair work -Peer teaching -Information gap activities	Teach it, collaborate on it, interact with respect to it
INTRAPERSONAL INTELLIGENCE	-Project work -Learner diaries -Relective learning acitivies -Self-study -Personal goal-setting -Individual instruction	Connect it to your personal life, make choices with regard to it
NATURALIST INTELLIGENCE	-Classifying and categorizing activities -Background music-in the form of sounds created in the natural world	

Adapted from Armstrong, 1994 & Berman, 1998.

Guiding Questions for the Materials Designer

During the process of materials writing, the writer should be constantly questioning oneself to ensure that the work in progress adheres to the materials design principles mentioned earlier. To ensure that more than one intelligence is activated simultaneously, the following questions below can be kept in mind.

Table 2

Questions for the Materials Designer

Intelligence	Questions to be asked by the materials designer
Linguistic Intelligence	How much written or spoken language will the learners produce/manipulate?
Logical-mathematical Intelligence	To what extent will the learner deal with numbers, calculations, classifications or critical thinking?
Spatial Intelligence	How will the learner use visual aids, visualization, or visual organizers?
Bodily-kinesthetic Intelligence	How will the learner involve his/her whole body or live hands-on experiences?
Musical Intelligence	How will the learner use musical sounds, rhythm, or melody?
Inter-personal Intelligence	How will the learners learn from and with each other?
Intra-personal Intelligence	To what extent will the learner communicate with oneself, utilize his personal feelings and memories, and make personal decisions?
Naturalist Intelligence	How will the learner use natural sounds or natural classifications?

Conclusions

When designing materials that aim to activate the multiple intelligences of the learners, the materials designer should be constantly questioning him or herself, trying to answer the above questions. While doing so, another point to bear in mind is whether the teaching/learning materials appeal to more than one intelligence simultaneously, using the most appropriate instructional method for the teaching point. Through the activation of more than one intelligence, learners will benefit from the intelligences they are already strong in and have opportunities to strengthen their weaker ones.

Using variety in content and text types is another principle materials writers that aim to activate learners' multiple intelligences should keep in mind. A multi-disciplinary approach to the same topic can provide the student with different perspectives and different ways of thinking, leading to a critical analysis of the issue. For example, exploring the same content area through different disciplines encourages activation of different intelligences.

Materials that give learners options about how they would like to learn both in class and outside class encourage development of learners' intelligences. If students can choose how they will learn, they can confront their weaknesses and engage their strengths. Besides, since they are empowered to make choices, their ownership of their own learning improves, as does their independence as learners.

Students' learning needs to be assessed through tasks and activities that require more than demonstration of what they have learned. If the materials require the learners to generalize what they have learned, provide examples, connect the language learning to their personal experiences, and apply their knowledge to new situations, their learning becomes more memorable. This personal dimension of learning makes it long-lasting.

As a final word, one concept of MI theory is that we rely on and use strategies that match our strongest intelligences (Hine, 1998). When we identify our less developed intelligences, we realize that we are untrained in or have avoided using the strategies that aim to develop those intelligences in our learners. Therefore, it is our responsibility to identify the strong and the weak intelligences both in ourselves and in our learners and to design activities that promote further development of the strong ones together with providing opportunities for the growth of the weaker ones.

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