

Dominant Intelligences in ESP Textbooks: Multiple or Single?

Reza Rezvani

Tayebe Amiri

Yasouj University

Abstract

Diversity in learners' intelligence profiles was heralded by the advent of Multiple Intelligences (MI) theory. Teachers, however, do not always recognize the interests, talents, and potentials of the students. Textbooks as the main curriculum plans and guides in Iran's educational system are expected to recognize and cater to the diverse students as individuals and hence their intelligences. This study was motivated by a query as to whether ESP textbooks published by the Organization for Researching and Composing University Textbooks in the Humanities (known as SAMT) accommodate intelligence diversity or they are an exclusive province of linguistic intelligence. In an attempt to see to the extent to which the ESP textbook activities address and engage different intelligences, a sample of them were analyzed in the light of MI theory. More specifically, eight ESP textbooks were selected randomly some among 34 ESP textbooks published by SAMT according to Biglan's (1973) eight academic task areas, that is each textbook was randomly selected from and belonged to one area. Activities in each textbook were extracted and evaluated using a detailed checklist developed by the current researchers drawing on the relevant literature and theoretical description of each intelligence and possible activities. The evaluation indicated that textbook activities generally involved four intelligences: verbal/linguistic, intrapersonal, logical/Mathematical and Spatial/Visual. Thus, as regards intelligence diversity, it seems that Samt ESP textbooks are not responsive to this diversity and verbal/linguistic, intrapersonal, logical/Mathematical intelligences prevail dominantly in the textbooks regardless of the academic area of study. Spatial/Visual presented only 1 % of the activities and other activities uniformly involved 99% of verbal/linguistic, intrapersonal, logical/ Mathematical intelligences. Although the textbooks were developed for students of different academic areas, there was not any difference in these textbooks based on the implication of the intelligences. Pedagogically, the findings carry the implication that policy makers, material developers in general, and Samt in particular consider the necessity of the application of all intelligences in textbooks. What's more, due to the fact that MI theory considers learners' potentials, styles and differences in intelligence profiles, teachers can contribute MI theory greatly to teaching both in EFL and ESL contexts.

Keywords: *ESP textbooks, Multiple Intelligences Theory, Textbook Evaluation*

1. Introduction

One of the important components of English language instruction and the essential constituent to many ESL/EFL classrooms and programs is a textbook, as Hutchinson and Torres (1994) point out:

the textbook is an almost universal element of teaching. Millions of copies are sold every year, and numerous aid projects have been set up to produce them in countries...No teaching-learning situation, it seems, is complete until it has its relevant textbook. (p.315)

Along the same line, Sheldon (1988) posits that textbooks not only "represent the visible heart of any ELT program" (p.237), but also when they are being used in the ESL/EFL classroom they have significant advantages for both the student and the teacher. As an illustration, Haycroft (1998) argues that one of the primary advantages of using textbooks is that they are psychologically essential for students since their progress and achievement can be measured concretely when they are used.

Since the 1970's learners have been considered as the center of language instruction and thus it is probably best to view textbooks as resources in achieving aims and objectives that have already been set in terms of learner needs. Furthermore, textbooks should always be at the service of the teachers and learners (Brown, 1995). In other words, they should not necessarily ascertain the aims themselves (components of teaching and learning) or become the aims but they should always be at the service of the teachers and learners (Brown, 1995). Thus, we should be sure "that careful selection is made, and that the materials selected closely reflect the aims, methods, and values of the teaching program" (Cunningsworth, 1995, p.7). Teachers, supervisors, administrators and materials developers can "make judgments about the effect of the materials on the people using them" through textbook evaluation (Tomlinson, 2001, p. 15). Sheldon (1988) states that the evaluation will help the teacher or program developer in making decisions on selecting the appropriate textbook. On the other hand, evaluation of the merits and demerits of a textbook will familiarize the teachers with its probable weaknesses and strengths. As a result, teachers will be able to make suitable adaptations to the material in their future instruction.

By the same token, textbooks have pivotal role in English for specific purpose (ESP) courses. They are the first source a teacher can use when there is no time to organize materials. Teachers also may not have the expertise to develop teaching materials. Therefore, ESP teachers most often use materials available. ESP materials, particularly textbooks, are to be evaluated one way or another.

While different criteria and approaches have been introduced to evaluate textbooks (e.g. Cunningsworth, 1995; Harmer, 1996; Williams, 1983), a theory like the theory of Multiple Intelligences (MI) also is useful in textbook evaluation. Snider (2001) claims that "MI theory-related materials have the strong potential to improve foreign language instruction because they engage learners' innate abilities" (p. 6). Teachers can "address the great diversity in learners; develop learners' intelligences and "create an individualized learning environment" (Christison, 1996, p.10) by applying MI Theory.

The theory of Multiple Intelligence was introduced by a psychologist named Howard Gardner and has challenged the traditional notion of intelligence defined in terms of Intelligent Quotient (IQ). The theory hypothesized that each individual has the capacity for several intellectual competences. Gardner (1983) indicates that "there exist some intelligences, that these are relatively independent of one another, and that they can be fashioned and combined in a multiplicity of adaptive ways by individuals and cultures" (p. 9). He postulates (1983) that these intelligences are:

Verbal/Linguistic: Verbal/Linguistic intelligence involves skills in written and

oral language. Shearer (2004) argues that, “the core features of linguistic intelligence include the ability to use words effectively for reading, writing, and speaking. Linguistic skills are important for providing explanations, descriptions, and expressiveness” (p. 4). This intelligence is also involved in using the language to remember information, tell stories, jokes, write letters or poetry. Lazear (1993) states that “this intelligence is involved in any use of metaphors, similes, and analogies, and, of course, in learning proper grammar and syntax in speaking and writing” (p.15). The verbal linguistic intelligence is dominant in poets, writers, lawyers, teachers, politicians, and storytellers.

Logical/Mathematical: Logical mathematical intelligence includes skill in calculations, logical reasoning, and problem solving. This intelligence is strength in any individual whom is able to calculate rapidly, estimate, complete arithmetic problems, understand or reason the relationships among numbers, solve patterns or complete orderings, and read calendars or other notational systems (Gardner, 1983). This intelligence is involved in recognizing abstract patterns, making predictions, sequencing, problem solving and scientific investigation. Some professionals who are strong in this intelligence are mathematicians, engineers, accountants, logicians, computer programmers and scientists.

Musical: Musical Intelligence is the first intelligence emerges in an individual and "includes sensitivity to pitch (melody), rhythm, and timbre (tone quality) and the emotional aspects of sound as pertaining to the functional areas of musical appreciation, singing, and playing an instrument” (Shearer; 2004, p. 4).

Spatial: Spatial Intelligence is sometimes known as visual-spatial intelligence. This intelligence embraces the abilities to represent the world through mental images and artistic expression (Shearer, 2004). Sailors, architects, and quarterbacks need strength in this intelligence (Checkley, 1997).

Bodily-kinesthetic: Bodily-kinesthetic intelligence includes skills in body movements and gestures. This intelligence enables individuals to express thoughts, ideas, and emotions using the body. Some individuals strong in bodily-kinesthetic intelligence are athletes, dancers, acrobats, and actors.

Interpersonal: Interpersonal intelligence is the ability to communicate with people effectively. It includes the ability to understand others, be sensitive to other people’s feelings, moods, motivations, and behavior (Christison, 1996). People such as religious leaders, teachers, salespeople, politicians, counselors, and all kinds of team leaders (coaches, coordinators, supervisors, directors) “need acute interpersonal intelligence” (Gardner, 1999, p. 43).

Intrapersonal: This intelligence “involves the capacity to understand oneself, to have an effective working model of oneself – including one’s own desires, fears, and capacities and to use such information effectively in regulating one’s own life” (Gardner, 1999, p.43).

and *Naturalist:* Shearer (2004) explains, “A person strong in the naturalist intelligence displays empathy, recognition, and understanding for living and natural things (plants, animals, geology)” (p. 6). Farmers, scientists, and geologists are strong in naturalist skills (Shearer, 2004). In addition to these eight intelligences, Smith (2002) adds spiritual and existential intelligences.

Upon review of the literature available in the area of textbook evaluation, some studies have attempted to evaluate textbooks in the light of MI Theory. In doing so, Palmberg (2001), for example, reports a textbook evaluation study conducted at Abo Akademi University in Finland by a group of student teachers, who participated in an EFL methodology course. The analysis of the course book

(Bricks1) shows that 97% of the 300 exercises were catered for verbal/linguistic, 76% intrapersonal, 25% interpersonal, 8% logical/mathematical, 5% bodily/kinesthetic, 5% [spatial/visual], 3% naturalist, 2% musical and 0% existentialist. The second major finding of this study is that the textbook intelligence profile reflects the writer's personal profile and teachers' learning styles as well as teachers' own preferences. Palmberg (2001) states that once teachers choose a course book to base their courses, "they must be able to assess how well the intelligence profile of the selected course book coincides with the majority of intelligence profiles found for that learner group" (Palmberg, 2001, p. 3). He furthermore adds that in order to encourage students and to make the learning environment better for everyone, teacher should bear in mind that learners are different and learn differently.

In a similar vein, Snider (2001) evaluates ten first-year college German textbooks. His aim was to determine the types of activities that were presented and to find out how the activities engaged multiple intelligences in learners. Snider finds forty-one types of activities. He further indicates that, "only eleven engage intelligences other than verbal/linguistic" (p.133). The study provides suggestions to adapt activities which enhance all the intelligences in learners. Snider (2001) draws our attention to the predominant activity types, which primarily enhance the verbal/linguistic intelligence, to demonstrate how changes can be made to enhance more intelligences.

Lima Botelho (2003) also, evaluates six books (*American Headway 2*, *Explorations 1*, *Gateways 1*, *Go for it! 4*, *New Interchange 1*, and *Passages 1*) in order to find the dominant intelligences in the activities. The study reveals that verbal/linguistic, intrapersonal, spatial/visual and interpersonal are the main intelligences in the six books. According to the analysis in this study, verbal/linguistic and intrapersonal are presented in 100% of the activities; spatial/visual was presented in 90.08%; and interpersonal are presented 76.07% of all the activities in the six books. The less common intelligences are: logical/mathematical, bodily/kinesthetic, musical, naturalist and existential. The results show that activities that enhance more intelligences are usually games, extra activities and a combination of two skills such as listening/speaking.

To, although, a considerable number of studies focused on the evaluation of ESP textbooks, no investigation has yet evaluated ESP textbooks in the light of MI theory. Therefore, this study is an attempt to evaluate five ESP textbooks from the perspective of MI theory. Hence, the following research questions were addressed in this study:

1. What are the dominant intelligences in ESP textbooks?
2. Are the ESP textbooks different from each other in terms of the implication of intelligences?

2. Method

2.1. Materials

The materials of this study compromised ESP textbooks. These textbooks were published by the Organization for Researching and Composing University Textbooks in the Humanities (known as Samt). Eight majors were selected randomly according to Biglan (1973) table of academic areas presented in the following table.

Accordingly, 8 textbooks were selected, that is, each textbook was randomly

selected from and belonged to one area. The textbooks included in this study were:

1. English for the Students of Engineering
2. English for the Students of Chemistry
3. English for the Students of Economics
4. English for the Students of Sociology
5. English for the Students of Educational Administration and Supervision
6. English for the Students of Agricultural Economics
7. English for the Students of History
8. English for the Students of Plant Science (Botany)

Table 1. Academic task areas

Task Areas	Hard		Soft	
	Nonlife system	Life system	Nonlife system	Life system
Pure	Astronomy Chemistry Geology Math Physics	Botany Entomology Microbiology Physiology Zoology	English German History Philosophy Russian	Anthropology Political science Psychology Sociology
Applied	Ceramic engineering Civil engineering Computer science Mechanical engineering	Agronomy Dairy science Horticulture Agricultural economics	Accounting Finance Economics	Educational administration and supervision Secondary and continuing Education Special education Vocational and technical education

2.2. Instrument

To conduct the evaluation, based on literature review, a checklist was developed with the description of each intelligence and with possible activities. Descriptions were collected from Gardner's MI theory (See Appendix).

3. Analysis & Discussion

The textbooks were evaluated by the current researchers. In doing so, the intelligences included in each activity were recognized. The lessons in the eight textbooks evaluated are divided into sections which are all clearly labeled. These sections are the same in all textbooks evaluated. The sections are divided into

several exercises (activities). Each lesson in these textbooks has the following format:

I. Reading Comprehension

II. Further Reading

III. Translation Activity

The activities in each lesson include True & False Questions, Multiple Choice Questions, Descriptive Questions, Fill in the Blanks, Matching Words, Reading for Comprehension, English/ Persian Translation, and Terminology Equivalents.

In order to identify the intelligences a checklist was developed with possible activities used in language teaching as well as a description of each intelligence. Intelligences were labeled in this research as VL for Verbal/ Linguistics, LM for logical/ Mathematical, SV for Spatial/Visual, BK for Bodily/Kinesthetic, M for musical, IR for Interpersonal, E for Existential, N for Naturalist, and IN for Intrapersonal.

The evaluation procedure in this study was restricted to only the recognition of the intelligences involved in the activities. The type and description of the activity, the elements such as pictures, graphs, and realia that were part of the activity, the techniques and materials necessary for doing the activity, and the skills being practiced were taken into account while recognizing the intelligences in the activities. The number of the occurrences of each intelligence in an activity was counted. Consequently, the percentage of the occurrence of each intelligence in all the books was estimated.

The dominant intelligences were verbal/linguistic, intrapersonal and logical/ Mathematical. These textbooks totally entailed only VL, IN and LM. 99% of the activities catered for VL and IN. Since activities like reading and writing are always present in language textbooks, the result was somewhat expected. LM was also present in 99% of the activities. SV presented only 1% of the activities. These textbooks present only one picture in reading comprehension. Other intelligences were not employed in these textbooks, though, they were written for different students of diverse academic majors. Interestingly, as the textbooks follow the same requisite patterns of presentation, there was no difference among these books in terms of the type and degree of the involvement of the intelligences. All in all, hence, it is revealed that the official ESP textbooks might not be adequate and helpful in catering for the diverse intelligences of students from different academic disciplines.

Gardner (1983) believed that each person has different aptitudes and abilities in several subjects, and that each individual has several types of intelligences that are combined differently. Moreover, during the last decades, in language teaching the shift from teacher-centered to learner-centered approach considers modifications in learners' needs and potentials as well as in textbooks (Sinder, 2001). Contrary to the expectations, the findings of the present study reveal that the writers of the evaluated textbooks viewed learners to be homogenous in terms of their intelligences and abilities. Therefore, it might be argued that current ESP textbooks fall short of catering for intelligence diversity of the heterogeneous targeted population of learners.

4. Conclusion

This study was an attempt to find out the dominant intelligences in ESP textbooks and to find out if the books are different in terms of the application of

intelligences. To this end, the current researchers developed a checklist according to Multiple Intelligences (MI) Theory. Eight ESP textbooks were selected randomly from different academic majors and were analyzed.

The result of this study showed that the dominant intelligences in ESP textbooks were VL, LM, and IN. Furthermore, the most striking result emerging from the evaluation was that there was not any difference in these books based on the implication of the intelligences although they were developed for learners of different academic majors.

Pedagogically, the findings carry the implication that policy makers, material developers in general, and Samt in particular should take into consideration the expected profile of learner intelligences of different academic fields when setting goals for or developing the textbooks.

References

- Biglan, A. (1973). The characteristics of subject matter in different academic areas. *Journal of Applied Psychology*, 58 (19), 203.
- Brown, J. (1995). *The elements of language curriculum*. Heinle and Heinle Publishers.
- Cunningsworth, A. (1995). *Choosing your coursebook*. Heinemann.
- Checkley, K. (1997). The first seven and the eighth: A conversation with Howard Gardner. *Educational Leadership*, 55(1), 8-13.
- Christison, M.A. (1996). Teaching and learning languages through multiple intelligences. *TESOL Journal*, 6(1), 10-14.
- Cunningsworth, A. (1995). *Choosing your coursebook*. Oxford, UK: Heinemann.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. New York: Basic Books.
- Garinger, D. (2001). Textbook evaluation. *TEFL Web Journal*. Retrieved April 16, 2012, from <http://www.teflweb-j.org/garinger.html>.
- Harmer, J. (1996). *The practice of English language teaching*. London: Longman.
- Haycroft, J. (1998). *An introduction to English language teaching*. Longman.
- Hutchinson, T. & Torres, E. (1994). The textbook as agent of change. *ELT Journal*, 4(48).
- Lima Botelho, M.R. (2003). *Multiple intelligences theory in English language teaching: An analysis of current textbooks, materials, and teachers' perceptions*. M.A. Thesis. Ohio.
- Palmberg, R. (2001). Catering for multiple intelligences in EFL coursebooks. *HLT Magazine, January 2002*. Retrieved January 09, 2012, from <http://www.hltmag.co.uk/jano2/sart6.htm>
- Smith, M.K. (2002). *Howard Gardner and multiple intelligences: The encyclopedia of informal education*. Retrieved May 02, 2012, from <http://www.infed.org/thinker/gardner.htm>
- Shearer, B. (2004). Multiple intelligences theory after 20 years. *Teachers College Record*, 106 (1), 2-16.

- Sheldon, L. (1988). Evaluating ELT textbooks and materials. *ELT Journal*, (42)2.
- Snider, D. P. (2001). *Multiple intelligences theory and foreign language teaching*. Unpublished doctoral dissertation, University of Utah.
- Teele, T. (2004). *Overcoming barricades to reading: A multiple intelligences approach*. California: Corwin Press.
- Tomlinson, B. (2001). ELT courses for adults. *ELT Journal*, 55(1), 80-101.
- Williams, D. (1983). Developing criteria for textbook evaluation. *ELT Journal*, 37(3), 251-261.

Appendix

List of Activities and Descriptions of Each Intelligence

Verbal/Linguistic

1. Note taking
2. Choral Speaking
3. Retelling
4. Listening to lectures
5. Word playing games
6. Presenting
7. Reading books
8. Discussing
9. Story telling
10. Researching
11. Debating
12. Memorizing
13. Writing
14. Reading aloud

Verbal/Linguistic intelligence involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals. This intelligence includes the ability to effectively use language to express oneself rhetorically or poetically; and language as a means to remember information. Writers, poets, lawyers and speakers are among those that Howard Gardner sees as having high linguistic intelligence.

Logical/Mathematical

1. Making outlines
2. Logic puzzling
3. Collecting data
4. Logical/sequential presenting of subject matter
5. Using logical argument
6. Problem solving
7. Classifying
8. Critical thinking

9. Predicting
10. Inductive/Deductive reasoning

Logical-mathematical intelligence consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically. In Howard Gardner's words, it entails the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking, ability to predict, principles of cause and effect, recognizing abstract patterns, and creating codes.

Spatial/Visual

1. Using visual awareness activities
2. Using Graphs and tables
3. Using Videos, slides and movies
4. Using charts and grids
5. Using art
6. Using maps and photos
7. Using graphic organizers
9. Student drawings
10. Imaginative story telling
11. Painting/picture/collage
12. Mind mapping
13. Using telescopes/microscopes

Spatial intelligence involves the potential to recognize and use the patterns of wide space and more confined areas. Sensitivity to form, space, color, line, and shape. Ability to graphically represent visual or spatial ideas.

Bodily/Kinesthetic

1. Using hands-on activities
2. Going on field trips
3. Role-playing
4. Using creative movements
5. Miming
6. Using body language
7. Dramatizing
8. Cooperating in group rotation
9. Cooking and other “mess” activities

Bodily-kinesthetic intelligence entails the potential of using one's whole body or parts of the body to solve problems. It is the ability to use mental abilities to coordinate bodily movements. Coordination, flexibility, speed, and balance are among the skills included in this intelligence.

Musical

1. Singing
2. Playing live music

3. Playing background music patterns
4. Tapping out poetic rhythms
5. Using background music
6. Using Student made instruments

Musical intelligence involves skill in the performance, composition, and appreciation of musical patterns. It encompasses the capacity to recognize and compose musical pitches, tones, and rhythms.

Interpersonal

1. Pair working
2. Peer teaching
3. Participating in classroom parties
4. Group brainstorming
5. Group problem solving
6. Project working
7. Cooperative working
8. Peer editing
9. Sharing
10. Group Studying

Interpersonal intelligence is concerned with the capacity to understand the intentions, motivations and desires of other people. It allows people to work effectively with others. Educators, salespeople, religious and political leaders and counselors all need a well-developed interpersonal intelligence. Responding effectively to other people, problem solving, and resolving conflict are among the skills included in this intelligence.

Intrapersonal

1. Doing activities with a self-evaluation component
2. Using meta-cognitive technique
3. Doing homework
4. Personal journal keeping
5. Creating checklist
6. Creating inventory
7. Doing individualized projects
8. Doing things by yourself
9. Independent reading
10. Silent reflecting

Intrapersonal intelligence entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations. In Howard Gardner's view it involves having an effective working model of ourselves, and to be able to use such information to regulate our lives. Some skills are understanding how one is similar to or different from others, reminding oneself to do something, knowing how to handle one's feelings, knowing about oneself as a language learner.

Naturalist

1. Reading outside
2. Using a microscope
3. Studying the stars
4. Collecting rocks
5. Bird watching
6. Identifying plants
7. Identifying insects
8. Building habitats
9. Going to the zoo
10. Going on a nature walk

Naturalist intelligence enables human beings to recognize, categorize and draw upon certain features of the environment. It combines a description of the core ability with a characterization of the role that many cultures value. The ability to recognize and classify plants, minerals, and animals, including rocks, grass, and all variety of flora and fauna are consisted in naturalist intelligence.

Existential intelligence concerns with ultimate issues. Being concerned with philosophical issues such as the status of mankind in relation to universal existence.

Multiple Intelligences Theory recognizes that each student comes to a classroom as an individual who has developed a different type of intelligence. Howard Gardner proposed this model in his 1983 book *Frames of Mind: The Theory of Multiple Intelligences*. According to Gardner, an intelligence must fulfill eight criteria: potential for brain isolation by brain damage, place in evolutionary history, presence of core operations, susceptibility to encoding (symbolic expression), a distinct developmental progression, the existence of savants, prodigies and other exceptional people, and support from experimental psychology and psychometric findings. *Multiple intelligences in the classroom* / Thomas Armstrong. 3rd ed. p. cm. Includes bibliographical references and index. Gardner suggests that in some people we can see single intelligences operating at high levels, much like huge mountains rising up against the backdrop of a flat horizon. Savants are individuals who demonstrate superior abilities in part of one intelligence while one or more of their other intelligences function at a low level. They seem to exist for each of the eight intelligences. For instance, in the movie *Rain Man* (which is based on a true story), Dustin Hoffman plays the role of Raymond, a logical-mathematical autistic savant.