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THE RELATIONSHIPS BETWEEEN SECONDARY LANGUAGE TEACHERS' MULTIPLE INTELLIGENCE PREFERENCES AND THEIR CHOICE OF MI-INSPIRED TEACHING STRATEGIES IN THE CLASSROOM

A Thesis

Presented to the

Teacher Education Department

and the

Faculty of the Graduate College

University of Nebraska

in Partial Fulfillment

of the Requirements for the Degree

Master of Arts

University of Nebraska at Omaha

by

Wenmin (Mindy) Huang

May, 2005

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THESIS ACCEPTANCE

Acceptance for the faculty of the Graduate College,
University of Nebraska, in partial fulfillment of the
requirements for the degree
Master of Arts in Secondary Education,
University of Nebraska at Omaha.

Committee

Chairperson

Date May 13, 2005

THE RELATIONSHIPS BETWEEEN SECONDARY LANGUAGE TEACHERS' MULTIPLE INTELLIGENCE PREFERENCES AND THEIR CHOICE OF MI-INSPIRED TEACHING STRATEGIES IN THE CLASSROOM

Wenmin (Mindy) Huang, MA

University of Nebraska, 2005

Advisor: Dr. Yvonne Tixier y Vigil

The purpose of the study was to examine ESL teachers' perceived multiple intelligences (MI), their choice of MI-inspired teaching strategies in the classroom, and the relationship between teachers' perceived MI preferences and their selection of strategies or activities that reflect or do not reflect their MI preference in the classroom. Two survey instruments were used to collect data for this study: the Intelligence Survey (IS), and the MI-Inspired Teaching Strategy Index (MITSI). This study was delimited to ESL teachers who had been enrolled in the ESL endorsement program at the University of Nebraska at Omaha (UNO).

Results indicated that the ESL teachers perceived the naturalistic and interpersonal intelligence to be their dominate intelligence while spatial, linguistic, and bodily-kinesthetic intelligences were considered relatively weak. Logical-mathematical, intrapersonal, and musical intelligences were in the middle level. ESL teachers reported using linguistic, interpersonal, and intrapersonal teaching strategies in their classrooms most frequently. Musical, logic-mathematical, spatial, and bodily-kinesthetic intelligence teaching strategies were on next list of activities they use in the classroom and naturalistic intelligence teaching strategies were rarely used. Results also revealed that the correlation between what ESL teachers perceive and do in the classroom though

significant in some domains but only a low relationship. Further research might employ larger sample, interviews and other authentic measures to study the possibly complex differential relationships between the two variables. It is also needed to find out if teachers did teach from their MI preferences, would it affect second language learning.

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Chapter 1

Introduction

Intelligence as a biopsychological potential isn't a singular phenomenon, but rather a plurality of capacities (Gardner, 1993). Multiple intelligences (MI) offers ways people can exercise or demonstrate the intellectual capacities they possess. According to Gardner, there are eight types of intelligences that everyone seems to possess to a greater or lesser degree. These include linguistic, bodily-kinesthetic, spatial, musical, logical-mathematical, intrapersonal, interpersonal, and naturalistic. Each intelligence is thought to have its own semiautonomous memory system with cerebral structures dedicated to processing its specific contents.

MI theory broadens the traditional view of intelligence as solely composed of linguistic and logical/mathematical abilities. In the spirit of John Dewey's (1938) ideas on progressive education, MI theory has evolved through a complex series of investigations of human behavior, and it is perhaps more accurately described as a philosophy of education or an attitude toward learning (Armstrong, 1994). As such, it offers educators a broad opportunity to creatively adapt its fundamental principles to any number of educational settings. Similar to learning style theory and brain-based education, MI theory focuses on the unique use of each individual, recognizing that each person learns and demonstrates his / her learning in ways that fit the individual and the teacher playing the role as reflective practitioner and facilitator, the student acting as a reflective partner in the learning process (Guild, 1997).

There is a large body of research relevant to the use of MI theory in education. These studies have focused on the application of MI in student learning such as

identifying students' multiple intelligence, describing students' learning styles, expanding teaching strategies, redesigning curriculum, and adjusting student assessment (e.g., Armstrong, 2000, 2003). The value of MI theory has been established by its many successful applications. It is found to increase learning objectives and other holistic outcomes and is lauded to be one of the most positive and influential theories in education today (Campbell & Campbell, 1999; Chen, 2004; Christison & Kennedy 1999; Kallenbach & Viens, 2002). Without question, MI theory has demonstrated its practicality (Kornhaber et al., 2004). In the past two decades, MI theory has received much attention (Campbell, 1997; Silver, Strong, & Perini, 1997) and has been impressively applied to learning and teaching all over the world (Kornhaber, Fierros, & Veenema, 2004).

Problem Statement

MI theory has also been applied to literacy education (e.g., Armstrong, 2003; Geimer, Getz, Pochert, & Pullam, 2000; Kallenbach & Viens, 2004) and to the programs of teaching English as a Second Language (ESL) in shaping and informing instructional strategies, curriculum development, and alternative forms of assessment (Berman, 1998; Christison, 1998, 2001; Christison & Kennedy, 2000; Ghosn, 1996; Haley, 2001, 2004; Herrell & Jordan, 2004; Shore, 2001). Rather than functioning as a prescribed teaching method, curriculum, or technique, MI theory provides a way of understanding intelligence which teachers can use as a guide for developing classroom activities that address multiple ways of learning and knowing (Christison, 1999b). Christison and Kennedy (2000) identified four ways of using MI theory in ESL classrooms: (a) helping students develop a better understanding and appreciation

of their own strengths and learning preferences, (b) better understanding of learners' intelligences, (c) providing a greater variety of ways for students to learn and to demonstrate their learning, and (d) developing lesson plans that address the full range of learner needs (Christison & Kennedy, 2000).

The application of MI theory is suggested as the ideal way to reach diverse populations such as K-12 students and adults (Christison, 1999). It also has significant implications for instruction in foreign and second language classrooms (Eddy, 1999; Haley, 2001, 2004; Herrell & Jordan, 2004; Shore, 2001). By providing multiple ways for students to demonstrate their understanding, students' confidence in their own abilities is fostered and their anxiety is reduced. MI-inspired teaching approaches increase the authenticity of the learning experiences and makes learning meaningful or relevant to students. The use of MI-inspired teaching strategies supports students' learning in second language and they achieve greater success rates (Kallenbach & Viens, 2004).

While there is research on MI theory and student learning, there is a paucity of research on teachers' own type of intelligences and the types of strategies and activities they use with students. If MI theory is to work effectively with ESL students who favor one or two multiple intelligences, then we must examine the types of activities teachers select to use in the classrooms. Furthermore, we must examine whether the teachers' preferred models of intelligence affect the types of strategies and activities they use, which might provide insight into the question of whether ESL teachers are teacher-centered or student-centered in teaching strategies they use with ESL students. Therefore, the knowledge about which intelligence(s) ESL teachers

favor is of vital importance for ESL instructors, educational policy makers, and practitioners.

Purpose of the study

The purpose of this study was to examine ESL teachers' perceived multiple intelligences (MI), their MI-inspired teaching strategies, and the relationship between teachers' perceived MI preferences and their selection of strategies or activities that reflect or do not reflect their MI preference in the classroom. The framework for this study was based on Gardner's (1983, 1993) theory that there are eight intelligences individuals use to gain and demonstrate knowledge: linguistic, bodily-kinesthetic, spatial, musical, logical-mathematical, intrapersonal, interpersonal, and naturalistic.

Research Questions

This study was guided by the following three research questions:

1. What MI categories do ESL teachers perceive as their preferred domains?
2. What MI-inspired teaching strategies are perceived to be frequently used in the classroom by ESL teachers?
3. Is there a significant relationship between the preferred MI domains chosen by teachers and the types of MI-inspired teaching strategies they use in their classroom?

Significance of the Study

There is little literature available on teachers' MI profiles and their relationship to their MI-inspired teaching strategies. There is no empirical research on ESL teachers' multiple intelligences, their MI-inspired teaching strategies and how

they relate to each other. This study attempts to fill this void and contribute to the research literature on the application of MI theory in ESL education.

The findings of the relationship between teachers' multiple intelligences and their relevant MI-inspired teaching strategies will provide insights into the question of whether ESL teachers are teacher-centered or student-centered in teaching strategies they use with ESL students. The results of this study should also help educators gain a more complete picture of the profile of ESL teachers' intelligences as identified by Gardner (1993) and the realities of their MI-inspired teaching strategies. These results will provide important information and knowledge for adjusting teaching practices of ESL teacher education programs. ESL teachers should find these results important for integrating their intelligences into their teaching, and better engaging their own as well as their students' full spectrum of multiple intelligences and learning strengths.

Delimitations and Limitations of the Study

1. The participants in this study were limited to ESL teachers who had been enrolled in the ESL endorsement program at University of Nebraska at Omaha;
2. Their participation in the study was voluntary;
3. This study only examined teachers working with ESL students;
4. This study did not measure actual intelligences or IQ as noted on Binet;
5. All participants taught in a midwestern metropolitan area.

Definition of Terms

ESL teacher is defined as a licensed teacher who provides English instruction to nonnative speakers in a public school district.

Intelligence is defined as a biopsychological potential to process information in certain ways, in order to solve problems or fashion products that are valued in a culture or community (Gardner, 1983, 1993).

Teaching strategy is defined as approaches and/or classroom activities that can be used across curriculum areas in order to support that learning of students (Herrell and Jordan, 2000).

MI-inspired teaching strategies is defined as the teaching approaches that are sensitive and relevant to each of the multiple intelligences of students. This includes eight types of strategies related to the eight intelligences which are defined below.

Linguistic intelligence is the ability to use words effectively both orally and in writing. This intelligence includes such skills as the abilities to remember information, to convince others to help you, and to talk about language itself. This intelligence can be seen in such people as poets, playwrights, storytellers, novelists, public speakers, and comedians (Gardner, 1993).

Musical intelligence is the ability to sense rhythm, pitch, and melody. This includes such skills as the ability to recognize simple songs and to vary speed, tempo, and rhythm in simple melodies. This intelligence can be seen in advertising professionals (those who write catchy jungles to sell a product), performance musicians, rock musicians, dance bands and composers (Gardner, 1993).

Logical-mathematical intelligence is the ability to use numbers effectively and be able to reason well. This includes such skills as understanding the basic properties of numbers, understanding the principles of cause and effect as well as the ability to predict, and use simple machines. This intelligence can be seen in such people as scientists, computer programmers, accountant, lawyers, bankers, and, of course, mathematicians (Gardner, 1993).

Spatial intelligence is the ability to sense form, space, color, line, and shape. It includes the ability to graphically represent visual or spatial ideas. This intelligence can be seen in such people as architects, graphic artists, cartographers, industrial design draftspersons, and, of course, visual artists (painters and sculptors) (Gardner, 1993).

Bodily-kinesthetic intelligence is the ability to use the body to express ideas and feelings and to solve problems. This includes such physical skills as coordination, flexibility, speed, and balance. This intelligence can be seen in such people as actors, athletes, mimes, dancers, and inventors (Gardner, 1993).

Interpersonal intelligence is the ability to understand another person's moods, feelings, motivations, and intentions. This includes such skills as responding effectively to other people in some pragmatic way, such as getting students or colleagues to participate in a project. This form of intelligence is usually highly developed in such people as counselors, teachers, therapists, politicians, and religious leaders (Gardner, 1993).

Intrapersonal intelligence is the ability to understand yourself - your strengths, weaknesses, moods, desires, and intentions. This includes such skills as

understanding how you are similar to or different from others, reminding yourself to do something, knowing about yourself as a language learner, and knowing how to handle your feelings such as what to do and how to behave when you are angry or sad. This intelligence can be seen in such people as philosophers, psychiatrists, spiritual counselors, and cognitive pattern researchers (Gardner, 1993).

Naturalistic intelligence is the ability to recognize and classify plants, minerals, and animals, including rocks and grass, and all variety of flora and fauna. It is also the ability to recognize cultural artifacts like cars or sneakers. This intelligence can be seen in such people as farmers, hunters, zookeepers, gardeners, cooks, veterinarians, nature guide, and forest rangers (Gardner, 1993).

Outline of the Study

The literature review relevant to this study is presented in Chapter 2. This chapter reviews literature regarding the aspects of multiple intelligence related to ESL teachers and their teaching strategies. Chapter 3 describes the research design, methodology, and procedures that were used to gather and analyze the data for the study. Chapter 4 reports the research findings and analysis that emerged from the study. Chapter 5 presents the researcher's analysis of the findings including the conclusions drawn from the findings and discussions of their implications.

Chapter 2

Literature Review

This literature review is anchored in three specific areas of research: (1) the application of MI theory in assessing teachers' MI profiles, (2) the MI-inspired activities ESL teachers use in their ESL classroom, and (3) the effects of teachers' intelligence characteristics on their use and selection of MI-inspired teaching strategies.

Application of MI theory in Assessing Adults' MI Profiles

One of the valuable contributions of MI theory is to assess and identify individuals' intelligences, which is useful for more effective education. This section begins with a brief review of MI theory, presents the practices of MI assessments for adult learners, and summarizes the research on teacher multiple intelligences.

MI theory in Brief

Intelligence is a biological and psychological potential, capable of being realized to a greater or lesser extent as a consequence of the experiential, cultural, and motivational factors that affect a person. According to Gardner (1993), "An intelligence entails the ability to solve problems or fashion products that are of consequence in a particular cultural setting or community" (p. 15). Armstrong (1994) synthesizes the ideas of MI theory into four key points that can be applied to all human beings. First, each human being possesses all eight intelligences, and these intelligences function together in unique ways. Some people have high levels of functioning in all or most of the eight intelligences; however, a few people lack most of the rudimentary aspects of intelligence. Most people are somewhere in the middle,

with a few intelligences highly developed, most modestly developed, and one or two underdeveloped. Second, intelligences can be developed. Everyone has the capacity to develop all eight intelligences to a reasonably high level of performance with appropriate encouragement, enrichment, training, and practice. Third, intelligences work together in complex ways. No intelligence really exists separately in solving problems in life. All or some intelligences are always interacting with each other. Finally, there are many different ways to be intelligent. There is no standard set of attributes that one must have in order to be considered intelligent.

Use of MI Assessment for Teachers as Adult Learners

MI theory has been put forth as a theory to define human intellect (Shore, 2004). "The focus of MI theory has been on identification and description of the faculties' intelligence." (Gardner, 1993, p. 41). The MI theory offers a number of educational implications that are worthy of consideration. In assessing the profiles of intelligences, MI theory does not just confine its application to students. It has been applied to teachers as well.

Shearer's (2004) mixed-method research over a period of seven years investigated the use of a MI assessment to promote teacher development and student achievement. Both teachers and their students assessed their intelligences using the instrument of the MIDAS (Multiple Intelligence Development Assessment Scales). Teachers all completed their own MI profiles and were instructed on procedures for profile verification and interpretation. Each teacher selected one or more of their classes to have the students complete the MI assessment. Teachers then engaged students in MI activities including profile verification, MI language, study strategies,

career exploration, family communication, and curriculum development. Throughout the school year teachers made suggestions for the modification of an activity book to meet their classroom needs. Results of this study found that MI profile assessment can be used by both teachers and students to develop MI awareness, promote acceptance of MI theory, and increase the use of strength-based MI-inspired learning activities. The MI assessment is something not merely done to students but is a process that teachers, administrators, and parents can participate in as equal partners in a dialogue of discovery that puts the individual's strengths at the heart of the discussion.

The use of MI assessment has great implications for teacher preparation. Shore's (2004) case study supports the use of MI theory in training teachers. She found that there is a relationship between MI theory and adult learning theory. MI theory supports a learner's self-direction. Descriptions of teachers' intelligences which are influenced by their background, their experiences, their culture and their learning preferences can make teachers well-informed of their intelligent characteristics. It is a quality element to effective learning for teachers to be aware of their own intelligence.

Kallenbach and Viens (2004) discussed how adult literacy educators chose to apply MI theory to create opportunities for adult students to reflect about their strengths, weaknesses, and interests connecting them to the MI framework. These researchers found that the application of MI assessment of the adult learners made them more confident about taking greater control of their own learning. It also

prompted adult learners to see themselves as learners in a more positive light after identifying and reflecting on their own abilities.

Christison (1999a) suggested that MI assessment can be used as a tool to help adult ESL students develop a better understanding and appreciation of their own strengths and learning preferences. She developed an inventory to identify the preferred intelligences of adult English language learners (2001). Based on the results of the adult ESL learners' MI assessment, teachers used MI-inspired activities offer them opportunities to reflect on their own strengths. Christison found that the ideas and information that came from these activities could inform learners' needs assessment and goal-setting processes. She noted that adult students became more engaged in learning as they used a learning mode that matched their intelligence strengths. In addition, students' regular reflection on their learning broadened their definitions of effective and acceptable teaching and learning practices. She also found that adult students' increased engagement and success in learning stimulated teachers to raise their expectations and to initiate a powerful expectation-response cycle that led to greater achievement levels.

Teachers' Multiple Intelligences

Gardner (1993) insisted that successful teachers are "all likely to be individuals with high degrees of interpersonal intelligence" (p. 9) because they need to have the ability to understand what motivates the students, how they learn, and how to work cooperatively with them. Chan (2003) conducted a study that used MI theory to assess teachers' intelligences. Chan surveyed a sample of 96 Chinese secondary school teachers in Hong Kong and explored the consistency between these

teachers' intelligences and their areas of responsibilities. Overall, relative strengths were found in teachers' interpersonal and intrapersonal intelligences while weaknesses were found in their visual-spatial and bodily-kinesthetic intelligences. There were no gender or age group differences in these teachers MI profiles. Arts/music/sports teachers reported greater strengths in musical intelligence when compared with language and social studies teachers. Guidance teachers show greater strengths in both intrapersonal intelligence and interpersonal intelligence than did non-guidance teachers. Within the group of language teachers, Chan found that they generally possessed higher degree in interpersonal, intrapersonal, naturalist, and linguistic intelligences than they processed in logical-mathematical, musical, spatial, and bodily-kinesthetic intelligences.

Armstrong (2003) argued that literacy is a whole-brain activity and the variety of ways in which literacy is practiced and learned indicates that literacy involves all of the eight types of intelligences. ESL teachers who are supposed to be good at language are bringing to bear different intelligences upon the multilayered processes of reading and writing. When ESL teachers read and write, they are doing far more than simply linguistically encoding data. They use their spatial intelligence to look at the visual configuration of the letters. Then they must match these visual images with sounds by drawing upon their wealth of knowledge concerning musical sounds (musical intelligence), nature sounds (naturalist intelligence), and the sounds of words (linguistic intelligence) in order to make the proper letter-sound correspondences. They bring in information from their body (bodily-kinesthetic intelligence) to ground these visual and auditory sensations into a structure of meaning. They organize the

information into grammatical units and draw upon deep intuitive syntactic structures that employ logical-mathematical transformations. They also use intrapersonal intelligence to have emotional reactions to the material, attempt to guess what the author or characters intend or believe by using interpersonal intelligence. They may think critically and logically about what they are reading by using logical-mathematical intelligence. They may decide to take action as a result of their reading and writing, either in a physical way using bodily-kinesthetic intelligence or perhaps within some larger social context using interpersonal intelligence.

Summary

MI theory provides a valuable framework for understanding teachers as adult learners. It is a logical extension to include MI theory in research on teachers' profile of dispositions, knowledge, and skills. Though there are differences in context and across populations in teachers' acceptance of the application of MI theory, this theory of the mind has great implications for teacher professional development. ESL teachers as a group can theoretically have a high degree of both linguistic and interpersonal intelligences. It can also be possible that they possess high levels of functioning in all or most of the eight intelligences. They may be somewhere in the middle, with a few intelligences highly developed, most modestly developed, and one or two underdeveloped. There is no absolute rule for describing the profile of a group of professionals' intelligences. Moreover, it is not reliable and valid to infer the profile of ESL teachers' intelligence simply based on theories, logics, and former research. Empirical research can be a good way to identify intelligences of ESL teachers as a specific group.

MI-Inspired Teaching Strategies in ESL Classrooms

ESL teachers have embraced Gardner's theory of multiple intelligences in the past few years more enthusiastically than any other theory in the classroom (Christison 1997, 1998a; Reid 1998). MI theory offers ESL teachers a way to examine their best teaching techniques and strategies in light of human differences. "MI has great potential for helping to revolutionize our concept of student-learning capacities in the ESL classroom" (Christison 1998a, p. 7). With the application of MI theory, ESL teachers are better equipped to widen their pedagogical repertoire to accommodate linguistically, culturally, and cognitively diverse students. MI theory can be used to shape and inform instructional strategies, curricula development, and alternative forms of assessment for second language learners (Haley, 2004).

The Importance of MI-Inspired Teaching Strategies

Teaching strategies informed by MI theory can transfer some control from teacher to learners by offering students choices in the ways they learn language and demonstrate what they learn. By focusing on problem-solving activities that draw on multiple intelligences, these teaching strategies encourage learners to build on existing strengths and knowledge to learn new content and skills (Kallenbach, 1999).

Haley (2004) interviewed ESL and foreign language teachers in Australia, Germany, and USA. Results of the study indicated that teachers make efforts to include all the multiple intelligences in their daily and/or weekly plans when they develop instructional strategies and assessments.

Haley (2001) conducted a pilot study on teachers' promotion of effective real-world applications of MI theory in their foreign and second language classrooms.

Teachers were profoundly affected by MI teaching approaches. They believed that their MI teaching experiences caused a paradigm shift from teacher-centered classroom to more of a learner-centered classroom. They were reenergized and enthusiastic about their pedagogy and believed they were able to reach more students. Students demonstrated keen interest in MI concepts and showed positive responses to the increased variety of instructional strategies used in their foreign language/ESL classrooms. Rather than functioning as a prescribed teaching method, MI theory provides a way of understanding intelligence, which teachers use as a guide for developing classroom activities that address multiple ways of learning and knowing (Christison, 1999b).

MI-inspired teaching strategies are also applied in university ESL programs. Shore's (2001) dissertation study examined the difference of MI teaching strategies used by teachers in the university ESL classroom. Ten teachers from a public and private university in the Washington, DC area were interviewed for the investigation of their use of MI teaching strategies. The majority of the teachers tend to stress mathematical logical, linguistic and interpersonal intelligences more than others in these university classrooms. According to Campbell (1997), MI makes its greatest contribution to education by suggesting that teachers expand their repertoire of techniques, tools, and strategies beyond the typical linguistic and logical ones predominantly traditionally used in classrooms.

The Process of Applying MI to ESL Teaching

Integrating multiple intelligences into teaching is a way of taking differences among students seriously, sharing that knowledge with students, guiding students in

taking responsibility for their own learning, and presenting worthwhile materials that maximize learning and understanding (Gahala & Lange, 1997). Christison (1998b) suggested a five-step approach in applying multiple intelligences theory: (1) introducing the basic theory, (2) using an MI inventory, (3) categorizing familiar ESL activities, (4) conducting a personal audit of teaching strategies, and (5) developing different assessment techniques that also address the eight intelligences.

Christison (1998a) also suggested that the four-stage developmental sequence by Lazear (1991, as cited in Christison) be used in teaching with multiple intelligences: (1) to awaken the intelligence that activates or triggers a particular intelligence through exercises and activities that make use of sensory bases, intuition or metacognition; (2) to amplify the intelligence that focuses on improving and strengthening the intelligence; (3) to teach for/with the intelligence that structures lessons for multiple intelligences, emphasize and use different intelligences in the teaching/learning process; and (4) to integrate MI into daily living.

Berman (1998) provided brief but motivating language activities that will appeal to learners with each of the intelligences. He proposed the SAFER approach for ESL classroom pedagogy and incorporates techniques such as educational kinesiology and suggestopaedia. Berman's SAFER model for language teaching includes the following steps: Setting the scene, Authenticity, Focusing on main features of each intelligence type, Error correction, and Review.

MI-Inspired Teaching Strategies Within the MI Domains

It is apparent that most models of ESL teaching methods/techniques with their specific emphasis have been developed to meet students' different needs or interests.

The Silent Way (which is an introspective way of learning), for example, emphasizes the development of students' inner thinking which is relevant to intrapersonal intelligence strategies. Total Physical Response, however, focuses on language learning through physical action, which is related to bodily/kinesthetic intelligence strategies. Suggestopedia, on the other hand, uses musical intelligence techniques to facilitate language cognition. Both the Communicative Approach and Cooperative Learning recognize the importance of interpersonal intelligence strategies to language learning. Whole Language Learning not only emphasizes the wholeness and reality of language by using verbal/linguistic intelligence strategies, but it also integrates the bodily/kinesthetic, interpersonal, and intrapersonal intelligence techniques to promote language learning (Lin, 2003). Since the MI-inspired teaching strategy is a key research question in this study, it is necessary and important to present the literature of the detailed MI teaching strategies or activities within the framework of MI theory.

Linguistic Intelligence Strategies. Linguistic intelligence is the easiest intelligence with which to develop teaching strategies. Strategies based on this intelligence serve as excellent channels for effectively imparting certain kinds of information for literacy (Armstrong, 2003). ESL teachers can promote students' language skills by creating a rich print environment; by providing things to look at, listen to, and write about; and by creating many opportunities for interaction among students and between the teacher and the students (Christison, 1998b). Teachers provide supplementary reading for these students and give them opportunities for discussion in small groups, research and presentation (Kottler & Kottler, 2002). ESL teachers provide language instruction in a way that ensures that students are given

language knowledge and skills as comprehensive input. Linguistic intelligence strategies offer students keen sensitivity to language. Teachers should create opportunities to increase verbal interaction in classroom activities and contextualize language as much as possible.

Additionally, Herrell and Jordan (2004) suggested using other teaching strategies such as giving reading/follow-up, encouraging additional reading/writing, using written response activities, doing oral reports, writing dialogue journals, and designing learning logs, to promote linguistic intelligence. Christison (1998a) developed the Taxonomy of Language-Learning Activities for Multiple Intelligences, in which she identified the activities that address linguistic intelligence as follows: lectures, student speeches, small and large group discussions, story-telling, books, debates, worksheets, journal keeping, word games, memorizing, listening to cassettes or talking books, using word processor, and publishing (creating class newspapers or collections of writing) (p. 7).

Bodily-Kinesthetic Intelligence Strategies. Words have deep connections to the human body. Brain research and early childhood education suggest that body movement impacts literacy development (Armstrong, 2004). Bodily-kinesthetic intelligence teaching strategies encourage sensitivity to the physical movement, body language and gut feelings. Using bodily-kinesthetic intelligence strategies by providing opportunities for physical challenges during the second/foreign language lesson can improve students' literacy skills (Christison, 1998). ESL students with bodily-kinesthetic intelligence benefit from using manipulatives and puppets in the

classroom. Teachers can have students act out concepts, building projects with Legos, Popsicle sticks, or clay (Kottler & Kottler, 2002).

Herrell and Jordan (2004) suggested that other activities such as role playing, showing not telling, mime, dance, and physical games should be used to document learning. Using the kinesthetic intelligence strategies, ESL teachers require students to circulate around the classroom to find someone, locate missing information, or engage in a role-play (Berman, 1998). In Christison's (1998a) Taxonomy of Language-Learning Activities for Multiple Intelligences, she identified the following activities relevant to bodily-kinesthetic intelligence: creative movement, hands-on activities, mother-may-I?, field trips, cooking and other "mess" activities, mime, and role play (p.8).

Spatial Intelligence Strategies. The use of spatial visualization strategies helps readers become more adept at understanding text and provides readers with prewriting skills to enhance creativity (Armstrong, 2004). Spatial intelligence teaching strategies create opportunities for students to keenly observe language phenomenon and describe language meanings in an interesting and imaginative way. ESL students' reading and writing skills can be improved by providing many opportunities for visual mapping activities. Students can also create charts and design bulletin boards as a way of using this intelligence to enhance learning (Christison, 1998). ESL teachers provide rich classrooms for ESL learners that include artifacts, pictures of objects, and maps. Teachers can create opportunities for students to develop this intelligence by having them do art projects, build models that

demonstrate what they know, and act out skits and role plays (Kottler & Kottler, 2002).

Herrell and Jordan (2004) further suggested that teachers have students draw visuals charts, make and illustrate posters, and build dioramas. Christison's (1998a) taxonomy categorizes the following activities for building spatial intelligence: charts, maps, diagrams, visualization, videos, slides, moves, photography, art and other pictures, using mind maps, imaginative storytelling, painting or collage, graphic organizers, optical illusions, telescopes, microscopes, student drawings, visual awareness activities (p. 7)

Musical Intelligence Strategies. To help individual achieve literacy, we acknowledge the important connection between words and music. This connection facilitates language acquisition and literacy. Teachers should use it fully to help students read and write more effectively (Armstrong, 2003). Providing tape recorders to enhance listening, singing along and learning new songs (Christison, 1998), along with teachers integrating jingles, raps, and chants into the curriculum also develops language acquisition and literacy. The use of music intelligence teaching strategies in ESL classroom offers a unique approach to enhance students' awareness of English culture, and aid in the practice of communication skills. Music provides an interesting mirror of the history, literature, and culture of a country, which can be seen in song texts and in musical style. In addition, music texts offer a unique means of reinforcing speaking, listening, reading, and writing skills through specially designed activities (Failoni, 1993). Kottler and Kottler (2002) also suggested that teachers can assign students to create musical performances and do projects that

include music. Christison's (1998a) suggested that ESL teachers use the following teaching strategies and activities addressing musical intelligence: playing recorded music, singing, playing live music (piano, guitar), group singing, music appreciation, mood music, student-made instruments, jazz Chants (p. 8)

Logical-Mathematical Intelligence Strategies. Children come into the world biologically equipped with the logical apparatus needed to quickly and easily unravel and solve the linguistic puzzle of learning their native language (Chomsky, 1994 as cited in Armstrong, 2003). As children encounter new words, reads, and writes, they expand their linguistic puzzle (Armstrong, 2003). This procedure is also true for second language learners. Students' language skills can be improved by providing manipulatives for experimentation with numbers and by using simple machines or computer programs to help children think about cause and effect (Christison, 1998). Teachers can foster students logical-mathematical intelligence by using inquiry methods and project-based learning in the classroom (Kottler & Kottler, 2002). Logical-mathematical intelligence teaching strategies help with logical organization and development of the students' learning contents. It also motivates students to solve difficult learning problems and nurture critical thinking.

Herrell and Jordan (2004) supported using the teaching strategies such as quantifying instruction, relating instruction to logical constructs, relating instruction to math/logic puzzles, having students design a math or logic games, and having students design "mind-benders". Christison's (1998a) taxonomy groups the following activities relevant to logical-mathematical intelligence: scientific

demonstrations, creating codes, logic problems or puzzles, story problems, science thinking, calculations, and logical-sequential presentation of subject matter (p. 7).

Intrapersonal Intelligence Strategies. Emotions fuel the desire to communicate with words and color our first experiences with literacy. Brain research proves that part of human being's brain governs the emotional responses to words and texts, which indicates that there is important connection between words and emotions (Armstrong, 2003). ESL students' literacy skills can develop better if they are taught with appropriate intrapersonal intelligence strategies such as letting them express their own preferences and helping them understand their own styles of learning (Christison, 1998). ESL teachers can provide private time for students with intrapersonal intelligence to think and reflect on their interests, concerns, and their solutions to problems. They can assign journal writing as a way for students to reflect on their understanding of what is being taught. By doing this, students also enhance their metacognitive skills (Kottler & Kottler, 2002).

Herrell and Jordan (2004) suggested using teaching strategies such as giving opportunities for self-teaching, using computer tutorials, internet, programmed learning, using self-evaluation rubrics, allowing the person choice in ways to best show the learning, and encouraging the use of self-made reports. As a way to develop this intelligence, Christison (1998a) identified the following activities addressing intrapersonal intelligence: independent study work, reflective learning, individualized projects, journal keeping, options for homework, interest centers, inventories and checklists, self-esteem journals, personal journal keeping, goal setting, self-teaching/programmed instruction (p. 8).

Interpersonal Intelligence Strategies. Language is a social phenomenon. It is impossible to isolate language acquisition and literacy from its social context. Interacting with native speakers is essential for developing second language acquisition skills as well as literacy skills. Communication with others is the key stimulus for ESL students to unravel their new linguistic puzzle and develop their social language. Cooperative learning in school also helps ESL students further develop their ability to develop their cognitive academic language. ESL teachers can use teaching strategies of grouping techniques that reduce the anxiety of the students and provide activities in the classroom that offer opportunities for active involvement of the students (Herrell, 2000). ESL teachers can help students effectively develop language and literacy skills through activities that involve them in solving problems and resolving conflict (Christison, 1998). ESL teachers can develop many different types of cooperative learning activities and learning centers to ensure second language learning. Interpersonal intelligence implies cooperative learning, and applies to outgoing, extroverted students while intrapersonal intelligence suggests self-esteem programs, or applies to students who are introverts or loners (Ghosn, 1997).

Herrell and Jordan (2004) suggested that teachers use the teaching strategies such as encouraging group work, celebrating group skills, teaching pieces, reciprocal teaching, group reports, group evaluation reports, and evaluating the products of the group to facilitate the intelligence. Christison's (1998a) identified the following activities addressing interpersonal intelligence: cooperative groups, conflict mediation, peer teaching, board games, group brainstorming, and pair work (p. 8).

Naturalistic Intelligence Strategies. There is a living link between nature and literacy in the lives of children and adults. The brain itself codes linguistic information according to naturalistic categories. Approaches to literacy acquisition that emphasize nature and natural phenomena are likely to bear much fruit in producing successful readers and writers (Armstrong, 2003). ESL teachers can help your students better develop language skills by focusing their attention on the world outside the classroom (Christison, 1998a). The science and language arts curriculum is a natural for developing activities that integrate naturalistic intelligence with language acquisition and literacy.

Integrative MI-Inspired Strategies

Language learning and literacy across the curriculum provides teachers with many opportunities to engage all eight intelligences in their lessons. When multiple activities are available in the classroom, students can find ways to participate and take advantage of language acquisition opportunities. With integrated MI-inspired teaching strategies, students become aware that different people have different strengths and that each person has a substantive contribution to make (Kallenbach, 1999). Campbell (1997) suggested that teachers identify different activities for each intelligence for the numerous lessons they teach in school. Christison (1998b) often used mix-and-mingle activities such as writing the activities on separate strips of paper, and then taping the intelligence categories on the walls around the room (e.g., linguistic intelligence, logical-mathematical intelligence, spatial intelligence). Teaching strategies informed by MI theory can transfer some control from teacher to learners by giving students choices in the ways they will learn and demonstrate their

learning. By focusing on problem-solving activities that draw on multiple intelligences, these teaching strategies encourage ESL students to build on existing strengths and knowledge to learn new content and skills (Kallenbach).

In a broadened perspective of language teaching, a balance of MI-inspired teaching strategies produces more effective and overall language education because different students have different characteristics of intelligences. These characteristics affect or relate to learning, knowledge, awareness, and appreciation of the variation among cognitive styles and personalities of the learners (Craig, 2001). There are many, not just one, different but autonomous intelligence capacities that result in many different ways of knowing, understanding, and learning about our world. ESL teachers should de-emphasize verbal-linguistic approaches in favor of a more comprehensive approach, which increase in awareness of ESL learning techniques and awareness of varied learning styles in both teachers and students (Anderson, 1998). As Gardner (1993) states: "It is of the utmost importance that we recognize and nurture all of the varied of human intelligences, and all of the combination of intelligence. We are all so different largely because we all have different combinations of intelligences. If we recognize this, I think we will have at least a better chance of dealing appropriately with the many problems that we face in the world" (p. 12).

Herrell and Jordan (2004) described two examples of applying MI theory for ESL teaching strategies in an integrative way. An ESL teacher, Ms. Barry, teaching second-grade reading set up seven centers based on the multiple intelligences. Each center allowed the children to interact in a way unique to one of the intelligences.

The centers she designed are listening (linguistic intelligence), music (musical intelligence), games (bodily-kinesthetic intelligence), tape-recorder (intrapersonal intelligence), story reenactment (interpersonal intelligence), pattern (logical-mathematical intelligence), and art center (visual/ spatial intelligence). After she read the book of *Jouanab, a Hmong Cinderell* aloud to the class, Ms. Barry suggested that the students do some activities focusing on the book in literacy centers. She encouraged the children to use the center for the entire week. They rated their enjoyment and the number of visits on a self-evaluation rubric. At the end of the week Ms Barry reflected on the choices the children had made in their center use. Another study was done with eleventh graders in a literature class where students are encouraged to read and share with the elementary students classic tales they missed read in their childhood. They came out with a list of ways that included reenactment, mine, puppet show, interpretive dance, student involvement, read-aloud with finger puppets, rap, skit, storytelling with costumes, story told in song, and show with children taking parts.

Summary

The review of the literature on MI application primarily focuses on the presentation of the MI-inspired strategies or classroom activities. MI theory has been applied primarily in the K-12 classrooms and adult ESL learning as well. ESL teachers seem to adopt and implement MI-inspired strategies or activities in their classroom. The case studies also show that ESL teachers can apply MI inspired activities in an integrated and comprehensive way. However, very few studies have been conducted empirically on MI application to ESL teaching. Research on ESL

teachers' use of MI-inspired strategies will provide evidence and add its significance to this body of research.

Teachers' Intelligences and Their MI-Inspired Classroom Activities

Gardner (1993) insists that intelligence is a biopsychological potential. Some finite set of mental processes gives rise to a full range of human activities related to the intelligences. On the other hand, intelligences can be better realized in the process of solving problems and fashioning products in real-life situations. The task demonstration or performance of an individual reflects the functioning of his/her degree of intelligences. A good writer can write his/her works by using the perfect language because he/she possesses the high degree of linguistic intelligence. A musician's "musical ability provide one strong line of evidence for the autonomy of musical intelligence" (Gardner, 1983, p. 120).

A good teacher understands his/her students very well for he/she is likely to have a high degree of interpersonal intelligence. People tend to use their strengths based on MI theory in the workplace because it was found to increase creativity and productivity (Gardner, 1999). The psychosocial being or personality of a teacher, which related to his/her knowledge and skills at using teaching strategies or techniques, contributes to the function of teaching behavior (Sandefur, 1972). It is possible that the ESL teachers used MI as a guide to provide greater variety of ways for students to learn and to demonstrate their learning; and as a guide to develop lesson plans that address the full range of learner needs (Christison & Kennedy, 2000). Research indicates that classroom approaches are more successful when they enhance a teacher's knowledge and repertoire rather than try to dramatically alter

them. The dynamic process of second language learning requires a working theory that is eclectic and ever-changing in order to meet the needs of the student and capitalize on the strengths of the teacher and promote language learning success (Craig, 2001).

Given the research conducted so far in MI theory (Gardner 1983, 1993), one can hypothesize that teachers' selection of activities in classrooms may be influenced by the types of intelligence(s) they prefer or they dominate. For instance, a teacher who is musically intelligent may be more sensitive in selecting, using, and encouraging music-related activities in classroom, in which he/she feels more comfortable and accustomed. Although no research on this topic could be found at the present time, there are some related studies that do address and support this hypothesis. Chan's (2000, 2003) studies found that teachers' perceptions of their strengths or intelligences affected their self-efficacy beliefs about their strategies in teaching and helping students. Teachers' interpersonal intelligence was the significant predictor of their self-efficacy in helping others by using the eight intelligences as predictors.

Chapter 3

Methodology

This study used survey instruments to examine (1) ESL teachers' perceived MI preference, (2) their use of MI-inspired teaching strategies, and (3) the relationships between the above two variables. This chapter describes the research design and participants selected for the research. It discusses the instruments used to gather information from the participants and the process of questionnaire administration. This chapter concludes with a description of the statistical analysis techniques that were employed.

Design and Subjects

This study used a cross-sectional survey procedure to collect information from ESL teachers in a midwestern metropolitan area. The Intelligence Survey (IS) and the MI-Inspired Teaching Strategy Index (MITSI) were distributed to 112 ESL teachers who had been enrolled in the ESL endorsement program at the University of Nebraska at Omaha (UNO) in February, 2005. Fifteen mail surveys were returned because of incorrect mail address. Seventy (72% of all the participants) completed the surveys. Of the 70 returned surveys, 67 (96%) contained the necessary information to be used in the study (i.e., valid responses, missing no more than six items). Babbie (2002) suggested that a response rate of 50% is adequate for analysis and reporting.

Of the teacher respondents, 97% were females, and only 3% were males. The mean age of the teacher respondents was 40.52 (SD=10.86). Ninety one percent were teaching ESL in the elementary schools, 2% were in junior high/middle schools, and

7% were in senior high schools. The mean total years teaching was 12.54 (*SD*=8.61). The mean total years teaching ESL specifically was 5.26 (*SD*=2.69). The mean average number of classroom students they taught was 16.66 (*SD*=6.22).

Instruments

Two survey instruments were used to collect data and served to produce statistics leading to quantitative or numerical descriptions of the targeted aspects of the study population. The Intelligence Survey (IS) (Appendix A) developed by Weber (2000) was revised and used to measure ESL teachers' preferred intelligence domain. The MI-Inspired Teaching Strategy Index (MITSI) (Appendix B) developed by the researcher was used to assess the frequency of ESL teachers' use of MI-inspired teaching strategies. The IS was used to collect the data about ESL teachers' self-reported MI preference. It was composed of eight scales respectively measuring the eight intelligences. The MITSI also had eight scales measuring the ESL teachers' teaching strategies inspired by the eight intelligences.

Both the IS and the MITSI used the five-point Likert scale. The IS Likert scales ranged from 1 representing "least descriptive," through 3 representing "somewhat descriptive" to 5 representing "most descriptive." The MITSI Likert scales ranged from 1 representing "rarely or never," through 3 representing "sometimes" to 5 representing "usually or always." The MITSI was also designed with six questions to collect ESL teachers' demographic data, including ESL teachers' age, gender, average class size, years as a teacher, and years teaching ESL.

Content Validity

The IS instrument was designed by Weber (2002) based on Gardner's (1993) MI theory. The IS has been extensively used for assessing adult learners' MI preferences in various training programs in a number of countries. It has been approved as a valid and effective instrument to measure adults' self reported MI preferences.

The MITSI was created in an independent study by this researcher, who had seven years of ESL teaching experience. The content validity is important because research conclusions based on the survey results assume that the measurement is accurately measuring the MI-inspired teaching strategies. The following four steps helped ensure that the MITSI was a comprehensive and valid measure of teachers' teaching strategies. First, the MITSI items are based on Gardner's (1993, 1999) MI theory that people have different levels of intelligence and tend to use their strengths based on MI theory in the workplace. The development of MITSI items was also built upon Armstrong's (2000, 2003) notion that literacy involves all of the eight types of intelligences and practices of using multiple intelligences to improve students' literacy skills in the classroom.

Second, the survey items were derived directly from MI-inspired teaching strategies and activities actually implemented in the inventories of MI teaching strategies that are strongly proposed by various practitioners and researchers (Armstrong, 2000, 2003; Christison, 1998a; Herrell & Jordan, 2004; Kottler & Kottler, 2002). The source of each survey item can be traceable to specific teaching strategies from these teaching strategy pools. Third, several experienced ESL

teachers evaluated the survey items and overall design, and offered their practical suggestions. Based on these evaluations and suggestions, the survey items and structure were improved with an initial version of 76 items.

The fourth step toward measurement validation was to ask four professors who had taught ESL and were teaching ESL and language art courses to ESL teachers to review each of the 76 items. All the professors assessed the extent to which the items in each scale were relevant and representative examples of ESL teachers' use of the teaching strategies measured by the MITSI. Experts' review can make the instrument accurate and easily administered while potential respondents can help to guarantee that the items are meaningful and inclusive of all important ideas (Litwin, 2003). Based on the panel responses, the inappropriate items were removed and several items were modified. Eight scales were created based on the teaching strategies of the eight multiple intelligences. Each scale represented the relevant teaching strategies related to one intelligence domain. Each scale had six items with a total of 48 items in the MITSI.

Pilot Study and Internal Consistency Reliability

A pilot study was conducted in December 2004 to validate the IS and MITSI instruments. It was used to determine if the instruments addressed the information they were intended to obtain. Subjects of the pilot study were 30 ESL and language art teachers who attended a graduate course at the University of Nebraska at Omaha. Twenty-eight teachers completed the surveys. The surveys were coded and basic statistics computed by using SPSS 12. The percent of variance accounted for by a survey question was used as statistical measures of the questions' importance. These

statistics were used to help decide whether a survey question should be retained in the final version of the two survey instruments. Based on the results, the IS was revised and reduced from 40 survey items to 29 items and the MITSI was reduced from 76 items to 40 items.

Internal consistency reliability is the degree of intercorrelation among items in a scale and is an indicator of how well the different items measure the same issue (Litwin, 2003). Scale internal consistency of each construct of the IS and the MITSI, respectively measuring each of the eight intelligences and eight types of MI-inspired teaching strategies was checked by computing Cronbach's alphas (Cronbach, 1951). The purpose of this analysis is to guarantee a group of items that purports to measure each scale should be at least moderately highly intercorrelated and indeed clearly focused on its dimension. According to Cronbach, alpha values of .7 or higher were acceptable, with .6 being acceptable for new scales. For the pilot data, Cronbach's alphas ranged from .63 to .75 in the IS, and from .64 to .82 in the MITSI. Based on the results of the pilot study, the two survey instruments were deemed reliable for measuring ESL teachers' perceived intelligences and their MI-inspired teaching strategies. Table 1 presents the items of the IS measuring each of the eight intelligence domains and their Cronbach's alphas from the pilot study. Table 2 presents the items of the MITSI measuring each of eight types of MI-inspired teaching strategies and corresponding Cronbach's alpha from the pilot study.

Table 1

The IS Scales, Items, and Pilot Study Cronbach's α

Scales and Their Items	*Cronbach's α*
Linguistic	0.71
1. Preparing to debate an issue is a challenge I enjoy.	
2. Telling stories to others is great fun.	
3. I would enjoy writing an essay for a contest.	
4. Choosing the best metaphor in a poem is a joy for me.	
Bodily-kinesthetic	0.75
1. It's often hard for me to sit still. I'd rather be up and active.	
2. I enjoy throwing and catching games.	
3. I love the challenge of participating on sports teams.	
4. Every chance I get, I find I enjoy golf or tennis or softball.	
Spatial	0.63
1. I enjoy taking great photographs.	
2. I enjoy drawing and painting.	
3. For me, sketching a building seems easier than baking a cake.	
Musical	0.63
1. Sometimes I find myself tapping rhythms on the table while waiting.	
2. When dining in a restaurant, I enjoy listening to background music.	
3. After I've been to a concert, I hear melodies in my mind for days.	
4. I often spontaneously sing, hum, or whistle.	
Logical-mathematical	0.65
1. Multiple choice tests are usually easy for me.	
2. I easily identify patterns and derive meanings from data.	
3. Finding solutions for numerical problems is fun.	
Intrapersonal	0.74
1. One favorite activity is keeping a personal journal.	
2. When I read a novel I often compare personal choices I would make.	
3. When I write I tend to base stories on personal experience.	

(Table 1 continued)

Interpersonal	0.66

1. I am sensitive to others' feelings.
2. I enjoy walking alone at times rather than having someone join me. (RK)
3. My best thinking surfaces when I brainstorm with other people.
4. Helping others complete a project brings me a lot of satisfaction.

Naturalistic	0.72

1. As I walk in the woods I often pause quietly to observe habits within wildlife.
2. I am drawn to water outside, such as lakes, creeks, rivers or oceans.
3. I like various kinds of animals and plants.
4. I learn from and enjoy observing nature change in all four seasons.

Table 2

The MITSI Scales, Items, and Pilot Study Cronbach's α

Scales and Their Items	*Cronbach's α*
Linguistic Intelligence Strategies	0.82

1. I have students talk or write about vocabulary words from their reading.
2. I have students retell the text they have just read to improve reading comprehension.
3. I emphasize a balance of students' listening, speaking, reading, and writing in my classroom activities.
4. I have students speak spontaneously about different topics.
5. I use both silent and oral reading to develop comprehension.

Bodily-kinesthetic Intelligence Strategies	0.67

1. I have students use body language to act out letters or words.
2. I have students engage in role-playing to show their understanding of the topic(s).
3. I integrate students' physical movements into classroom activities.
4. I have students physically move to demonstrate some particular meanings of what they learn.
5. I have students act out about the various language-learning topics.

(Table 2 continued)

Spatial Intelligence Strategies	0.64

1. I have students draw or paint pictures to show their understanding of what I teach.
2. I use cards of artwork such as paintings, drawings, and cartoons to present what I teach to students.
3. I have students create charts, diagrams, or graphs to depict the concepts being learned.
4. I have students draw before they write.
5. I have students imagine or mind-map stories.

Musical Intelligence Strategies	0.78

1. I use rhythmic patterns to help students remember certain words.
2. I use songs to help students learn new concepts.
3. I take time out to share the sounds of particularly interesting words when reading aloud to my students.
4. I encourage students to read sentences out loud with rhythmic patterns.
5. I have students listen to recorded music or songs related to what is being taught.

Logical-mathematical Intelligence Strategies	0.65

1. I have students do logic puzzles such as "crossword" to enhance their vocabulary.
2. I have students play math or logic games that shows what has been learned.
3. I have students use their mathematical or logic talents to predict or guess the meanings of what is taught.
4. I have students explore the patterns found in words, for example, set, get and let.
5. I provide opportunities for students to compare or classify what they have learned.

Intrapersonal Intelligence Strategies	0.65

1. I offer students reflective time to express their own feelings.
2. I encourage students to connect what is taught with aspects of their own lives.
3. I encourage independent work based upon students' interests.
4. I consider my students' inner feelings, dreams, or ideas in developing classroom activities.
5. I ask students to share how they think the characters are feeling in the story.

(Table 2 continued)

Interpersonal Intelligence Strategies	0.64
1. I have students work in groups to complete projects.	
2. I encourage peer sharing about what they've learned.	
3. I provide opportunities for students to help each other in learning.	
4. I encourage students to celebrate classmate successes through creating cheers, giving praise, and clapping.	
5. I have students work together on various projects.	
Naturalistic Intelligence Strategies	0.76
1. I design lessons that bring nature in the classroom via videos, objects, animals, plants, etc.	
2. I have students collect their favorite animal or plant drawings, photographs or objects.	
3. I encourage students to perform learning activities by using objects from the natural world.	
4. I have students classify flora, fauna, and natural phenomena.	
5. I integrate natural phenomena into my teaching.	

Administration of the Two Surveys

The survey packet including two cover letters, the IS and the MITSI were mailed to the teachers who were enrolled in the ESL endorsement program at UNO in February 2005. One cover letter from the researcher explained the purposes of the study and informed the participants that their participation was voluntary, and their responses would be completely anonymous. In order to encourage the ESL teacher to do the survey and increase the return rate, a support letter from an ESL professor from the University of Nebraska at Omaha was also mailed to the teachers. The participants were asked to mail back their surveys with responses using the envelopes provided by the researcher.

Data Analysis

Data were analyzed by using the SPSS 12.0 software. Cronbach's alpha was first used to determine the reliability of all scales of the IS and the MITSI. Descriptive statistics and Pearson's correlation were used to analyze the data regarding the research questions. Mean scores and standard deviations for each item on the IS and the MITSI were calculated for ESL teachers' perceived MI preference and their MI-inspired teaching strategies. Average mean scores and standard deviations in each of the eight scales of the two surveys were used to examine the general distributions of the teachers' MI preference and their MI-inspired teaching strategies.

Pearson's correlation coefficients were applied to determine whether there was a significant relationship between ESL teachers' perceived MI preference and their use of MI-inspired teaching strategies in class. A .05 significant level was used for each inferential test to control for Type I error.

Chapter 4

Results

This chapter describes the result of this study. It is presented in four sections. The first section describes the results of reliability analyses of all the scales of the IS and the MITSI. The second section presents descriptive statistics including means and standard deviations of the ESL teachers' perceived MI domains. The third section presents the results of descriptive statistics including means and standard deviations of the MI-inspired teaching strategies used by ESL teachers. The fourth section provides the results of Pearson's correlation coefficients to determine whether there were relationships between the preferred MI domains chosen by teachers and the type of teaching strategies they use in their classroom.

Reliability Analysis

Table 3 presents the reliability Cronbach's alphas and the means of the corrected item-total correlations for the IS scales and the MITSI scales. The results of reliability analysis indicated that all the groups of items that purported to measure the scales of both the IS and the MITSI achieved adequate internal consistency. They were moderately or highly intercorrelated and indeed clearly focused on its dimension.

Table 3

Conbach's Alphas and Means of Corrected Item-Total Correlations for IS Scales and MITSI Scales

	Cronbach's Alpha	*Means of Corrected Item-Total Correlations*	*SD*
IS Scales			
Linguistic intelligence	.70	.52	.13
Bodily-kinesthetic intelligence	.62	.45	.15
Spatial intelligence	.64	.48	.06
Musical intelligence	.70	.52	.07
Logical-mathematical intelligence	.68	.53	.11
Intrapersonal intelligence	.63	.44	.13
Interpersonal intelligence	.64	.46	.11
Naturalistic intelligence.	.79	.79	.08
MITSI Scales			
Linguistic teaching strategies	.64	.45	.13
Bodily-kinesthetic teaching strategies	.81	.63	.09
Spatial teaching strategies	.62	.43	.07
Musical teaching strategies	.68	.49	.13
Logical-mathematical teaching strategies	.68	.50	.11
Intrapersonal teaching strategies	.72	.53	.11
Interpersonal teaching strategies	.81	.61	.13
Naturalistic teaching strategies	.81	.61	.11

ESL Teachers' Perceived MI Domains

Table 4 lists the means and standard deviations for each of the IS items and scales of intelligence domains. The means of each of the eight domains of ESL teachers' self-perceived intelligence were presented in Figure 1 (p.44). All these descriptive statistics showed that the ESL teachers generally perceived their naturalistic intelligence to be the strongest (M=3.94, SD=0.86). Spatial intelligence

was considered to be the weakest (M=2.75, SD=0.85). From the strongest to the weakest MI, the order was naturalistic, interpersonal, musical, intrapersonal, logical-mathematical, bodily-kinesthetic, linguistic, and spatial.

Table 4

Means and Standard Deviations of the IS Items and Scales (n=67).

Scales and Their Items	*M*	*SD*
Linguistic	2.85	0.88
1. Preparing to debate an issue is a challenge I enjoy.	2.60	1.23
2. Telling stories to others is great fun.	3.90	0.97
3. I would enjoy writing an essay for a contest.	2.52	1.37
4. Choosing the best metaphor in a poem is a joy for me.	3.39	1.22
Bodily-kinesthetic	2.99	0.85
1. It's often hard for me to sit still. I'd rather be up and active.	3.54	1.12
2. I enjoy throwing and catching games.	3.04	1.26
3. I love the challenge of participating on sports teams.	3.09	1.18
4. Every chance I get, I find I enjoy golf or tennis or softball.	2.26	1.42
Spatial	2.75	0.85
1. I enjoy taking great photographs.	3.58	1.08
2. I enjoy drawing and painting.	2.97	1.33
3. For me, sketching a building seems easier than baking a cake.	1.70	0.94
Musical	3.74	0.80
1. Sometimes I find myself tapping rhythms on the table while waiting.	3.09	1.22
2. When dining in a restaurant, I enjoy listening to background music.	3.90	1.09
3. After I've been to a concert, I hear melodies in my mind for days.	4.00	1.04
4. I often spontaneously sing, hum, or whistle.	3.96	1.08
Logical-mathematical	3.31	0.95
1. Multiple choice tests are usually easy for me.	3.40	1.16
2. I easily identify patterns and derive meanings from data.	3.40	1.09
3. Finding solutions for numerical problems is fun.	3.16	1.38

(Table 4 continued)

Intrapersonal	3.42	0.75
1. One favorite activity is keeping a personal journal.	2.25	1.32
2. When I read a novel I often compare personal choices I would make.	3.87	1.15
3. When I write I tend to base stories on personal experience.	4.13	0.84
Interpersonal	3.93	0.49
1. I am sensitive to others' feelings.	4.61	0.60
2. I enjoy walking alone at times rather than having someone join me. (RK)	3.04	0.99
3. My best thinking surfaces when I brainstorm with other people.	3.91	0.93
4. Helping others complete a project brings me a lot of satisfaction.	4.12	0.78
Naturalistic	3.94	0.86
1. As I walk in the woods I often pause quietly to observe habits within wildlife.	3.68	1.17
2. I am drawn to water outside, such as lakes, creeks, rivers or oceans.	4.06	1.11
3. I like various kinds of animals and plants.	4.04	1.08
4. I learn from and enjoy observing nature change in all four seasons.	4.00	1.07

MI-Inspired Teaching Strategies

Table 5 presents the means of standard deviations for each of the MITSI items and scales of the MI-Inspired teaching strategies. The means of each of the eight domains were presented in Figure 1 for the purpose of giving a general picture of the distribution of the MI-inspired teaching strategies used by ESL teachers. All these descriptive statistics indicated that the ESL teachers used linguistic intelligence strategies in their classroom most frequently (M=4.32, SD=0.50) while naturalistic intelligence strategies were used least frequently (M=2.76, SD=0.75). The order of ESL teachers' use of MI-inspired teaching strategies in their classroom from the most

to the least frequently was as follows: linguistic, interpersonal, intrapersonal, musical, logic-mathematical, spatial, bodily-kinesthetic, and naturalistic.

Table 5

Means and Standard Deviations of the MITSI Items and Scales (n=67)

Scales and Their Items	*M*	*SD*
Linguistic Intelligence Strategies	4.32	0.50
1. I have students talk or write about vocabulary words from their reading.	4.58	0.65
2. I have students retell the text they have just read to improve reading comprehension.	4.29	0.81
3. I emphasize a balance of students' listening, speaking, reading, and writing in my classroom activities.	4.62	0.57
4. I have students speak spontaneously about different topics.	3.66	1.02
5. I use both silent and oral reading to develop comprehension.	4.49	0.91
Bodily-kinesthetic Intelligence Strategies	3.38	0.73
1. I have students use body language to act out letters or words.	3.19	1.13
2. I have students engage in role-playing to show their understanding of the topic(s).	3.38	1.02
3. I integrate students' physical movements into classroom activities.	3.68	0.87
4. I have students physically move to demonstrate some particular meanings of what they learn.	3.45	0.91
5. I have students act out about the various language-learning topics.	3.19	0.93
Spatial Intelligence Strategies	3.53	0.57
1. I have students draw or paint pictures to show their understanding of what I teach.	3.71	0.98
2. I use cards of artwork such as paintings, drawings, and cartoons to present what I teach to students.	3.15	1.26
3. I have students create charts, diagrams, or graphs to depict the concepts being learned.	3.91	0.94
4. I have students draw before they write.	3.51	0.98
5. I have students imagine or mind-map stories.	3.38	0.95

(Table 5 continued)

Musical Intelligence Strategies	3.73	0.68
1. I use rhythmic patterns to help students remember certain words.	3.84	0.96
2. I use songs to help students learn new concepts.	3.59	1.16
3. I take time out to share the sounds of particularly interesting words when reading aloud to my students.	3.84	0.97
4. I encourage students to read sentences out loud with rhythmic patterns.	4.04	0.89
5. I have students listen to recorded music or songs related to what is being taught.	3.29	1.16
Logical-mathematical Intelligence Strategies	3.66	0.62
1. I have students do logic puzzles such as "crossword" to enhance their vocabulary.	2.81	1.11
2. I have students play math or logic games that show what has been learned.	3.60	0.96
3. I have students use their mathematical or logic talents to predict or guess the meanings of what is taught.	3.59	0.98
4. I have students explore the patterns found in words, for example, set, get and let.	4.49	0.75
5. I provide opportunities for students to compare or classify what they have learned.	3.86	0.75
Intrapersonal Intelligence Strategies	4.01	0.55
1. I offer students reflective time to express their own feelings.	3.85	0.83
2. I encourage students to connect what is taught with aspects of their own lives.	4.49	0.63
3. I encourage independent work based upon students' interests.	3.62	0.95
4. I consider my students' inner feelings, dreams, or ideas in developing classroom activities.	3.75	0.88
5. I ask students to share how they think the characters are feeling in the story.	4.39	0.67

(Table 5 continued)

Interpersonal Intelligence Strategies	4.08	0.67
1. I have students work in groups to complete projects.	3.88	0.92
2. I encourage peer sharing about what they've learned.	4.15	0.83
3. I provide opportunities for students to help each other in learning.	4.16	0.80
4. I encourage students to celebrate classmate successes through creating cheers, giving praise, and clapping.	4.28	0.90
5. I have students work together on various projects.	3.94	0.92
Naturalistic Intelligence Strategies	2.76	0.75
1. I design lessons that bring nature in the classroom via videos, objects, animals, plants, etc.	3.34	0.91
2. I have students collect their favorite animal or plant drawings, photographs or objects.	2.46	0.95
3. I encourage students to perform learning activities by using objects from the natural world.	3.12	1.11
4. I have students classify flora, fauna, and natural phenomena.	1.92	0.97
5. I integrate natural phenomena into my teaching.	2.94	1.09

Relationship between Perceived Preferred MI domains and Use of MI-inspired Teaching Strategies

Test results of Pearson's correlation coefficients indicated that there was a significantly positive relationship between an ESL teacher's perceived preferred MI domains and his/her use of the relevant MI-inspired teaching strategies in class in the following four pairs: linguistic (r=.305, p=.012), spatial (r=.292, p=.017), intrapersonal (r=.311, p=.010), and naturalistic (r=.324, p=.007). No significant relationship was found between an ESL teacher's perceived preferred MI domains and his/her use of the relevant MI-inspired teaching strategies in class in the following four pairs: bodily-kinesthetic, logic-mathematical, and interpersonal. Table 6 presents Pearson's correlation coefficients regarding the relationships between the

ESL teachers' perceived MI domains and the scales of ESL teachers' use of MI-inspired teaching strategies.

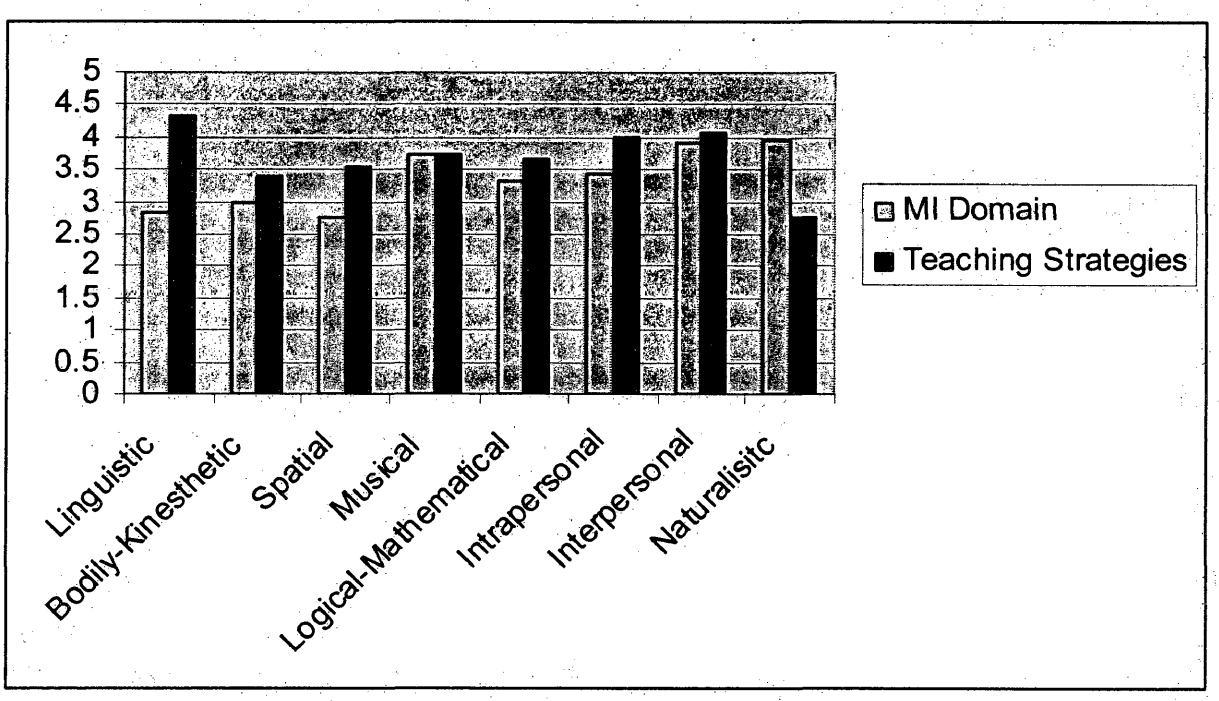

Figure 1. General distribution of ESL teachers' MI domains and their MI-inspired teaching strategies

Note. For distribution of ESL teachers' MI domains, 1= least descriptive, 2= not very descriptive, 3= somewhat descriptive, 4= descriptive, 5= most descriptive.
For distribution of ESL teachers' MI-Inspired Teaching Strategies, 1= rarely or never, 2= seldom, 3= sometimes, 4= often, 5= usually or always

Table 6
Correlations Between Perceived MI domains and Use of MI-inspired Teaching Strategies

Intelligence:	1	2	3	4	5	6	7	8
Teaching Strategies								
1. Linguistic	.305*	.069	.273*	.135	.222	.261*	-.045	.318**
2. Bodily-kinesthetic	.012	-.140	.186	-.004	-.034	.275*	.168	.225
3. Spatial	.243*	-.054	.292*	.070	-.109	.254*	.064	.288*
4. Musical	-.013	-.259*	.287*	.227	.018	.144	.162	.210
5. Logic-mathematical	.094	.088	.038	.225*	.009	.158	.130	.146
6. Intrapersonal	.301*	-.090	.138	.097	.102	.311*	.060	.302*
7. Interpersonal	.126	.019	.178	-.003	.086	.173	.167	.161
8. Naturalistic	.149	.004	.100	.172	-.039	.194	.133	.324**

Note. Each of the numbers (1, 2, 3, 4, 5, 6, 7, 8) represents the relevant perceived MI domain of the same number in the teaching strategy category.
** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed).

Chapter 5

Discussion

This study investigated the relationship between the ESL teachers MI preferences and their choice of MI-inspired teaching strategies in the classroom. In this study, the ESL teachers perceived the naturalistic and interpersonal intelligences to be their dominant intelligences while spatial, linguistic, and bodily-kinesthetic intelligences were considered relatively weak. Logical-mathematical, intrapersonal, and musical intelligences were in the middle level. The ESL teachers reported using linguistic, interpersonal, and intrapersonal teaching strategies in their classrooms most frequently. Musical, logic-mathematical, spatial, and bodily-kinesthetic intelligence teaching strategies were on next list of activities they used in the classroom. Naturalistic intelligence teaching strategies were rarely used.

The ESL teachers' use of teaching strategies inspired by linguistic, spatial, intrapersonal, and naturalistic intelligences were significantly positively related to their self-perceived relevant MI domains. This information reveals that the ESL teachers who have strengths in linguistic, spatial, intrapersonal, and naturalistic intelligences tend to use more teaching strategies inspired by the relevant intelligence and vice versa. However, all these four pairs were correlated in a pretty low degree. No correlation existed for the others. MI-inspired teaching strategies the ESL teachers identified using in the classroom however, did not match those they believed to be their own dominant MI levels.

The significance of the finding was that the majority of the ESL teachers did not pick linguistic as their most dominate MI preference, but identified it as the

primary strategies they use in the classroom. It is noteworthy that the domain of linguistic intelligence was perceived to be among the weakest by the ESL teachers. This may possibly indicate a gap between the requirement of the ESL teaching professions and the ESL teachers' linguistic abilities and skills. Based upon this finding, ESL teacher preparation and professional training programs should place more emphasis on improving ESL teachers' linguistic skills and abilities. However, the ESL teachers seemed to emphasize more traditional modes of teaching by applying more frequently the conventional linguistic, interpersonal and intrapersonal intelligence classroom activities. ESL teacher preparation and professional training programs related to classroom teaching strategies and activities may consider switch its traditional focus on linguistic and interpersonal strategies to designing spatial, bodily-kinesthetic, and naturalistic intelligence teaching strategies.

There were no correlations or low correlations between the ESL teachers MI preferences and their choice of MI-inspired teaching strategies in the classroom. This finding provided insights as to whether teachers used their MI preferences in terms of the types of the MI-inspired teaching activities they use in the classroom. This finding seemed to demonstrate that the ESL teachers were not teacher-centered in designing and implementing classroom activities in terms of the MI perspective. The design and implementation of teaching strategies were not highly guided by their own intelligences. They might design their teaching strategies based upon the teaching content and the characteristics of their students.

Recommendations

Within the original framework of the conceptualization of multiple intelligences, future studies of multiple intelligences of ESL teachers and their use of MI-inspired teaching strategies might employ alternative assessment devices, interviews, anecdotal evidence and other authentic measures. These approaches could provide further insights into the profiles of multiple intelligences of ESL teachers and the possibly complex differential relationships between individual intelligences and the specific MI-inspired teaching strategies. Larger sample-sized studies on this topic will provide more persuasive and generalized evidence. Further research is also needed to find out whether it would affect second language learning if teachers did teach from their MI preferences. This study did not examine ESL students MI preference, but it would be interesting to see if ESL students learn a second language more effectively if they and their teacher share the same MI preference.

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Appendix A: IRB Approval

University of Nebraska Medical Center
NEBRASKA'S HEALTH SCIENCE CENTER

Institutional Review Board (IRB)
Office of Regulatory Affairs (ORA)

February 24, 2005

Wenmin Huang
819 S. 70th Plaza, #26
Omaha, NE 68106

IRB#: 053-05-EX

TITLE OF PROTOCOL: ESL Teachers' Multiple Intelligences and Their Use of MI-Inspired Teaching Strategies

Dear Ms. Huang:

The IRB has reviewed your Exemption Form for *Exempt Educational, Behavioral, and Social Science Research* on the above-titled research project. According to the information provided, this project is exempt under 45 CFR 46:101b, category 2. You are therefore authorized to begin the research.

It is understood this project will be conducted in full accordance with all applicable sections of the IRB Guidelines. It is also understood that the IRB will be immediately notified of any proposed changes that may affect the exempt status of your research project.

Please be advised that the IRB has a maximum protocol **approval period of three years** from the original date of approval and release. If this study continues beyond the three year approval period, the project must be resubmitted in order to maintain an active approval status.

Sincerely,

Ernest Prentice, PhD/GDK

Ernest D. Prentice, Ph.D.
Co-Chair, IRB

EDP/gdk

Academic and Research Services Building 3000 / 987830 Nebraska Medical Center / Omaha, NE 68198-7830
402-559-6463 / FAX: 402-559-3300 / Email: irbora@unmc.edu / http://www.unmc.edu/irb

Appendix B: Survey Cover Letter

University of Nebraska Omaha

COLLEGE OF EDUCATION
Teacher Education

IRB # 053-05-EX

Dear TED fellow student:

I would like to ask for your help in the survey study for my thesis. The purpose of this study is to investigate the frequency of ESL teachers' use of multiple intelligence (MI) teaching strategies in their classrooms and their multiple intelligences profile. You are asked to rate the frequency of your use of the related classroom teaching activities in the MI-Inspired Teaching Strategy Index. Then you are asked to assess your intelligences in the Teacher Multiple Intelligences Profile. It will take about 15 to 20 minutes to complete the two surveys. Your candid responses will make possible assessment of the ESL teachers' use of MI-inspired teaching strategies and their multiple intelligences profile.

Your participation is **invaluable** and completely **voluntary**, no risk to yourself, and your responses will be completely **anonymous**. You will not be identified in any way. I appreciate your willingness to cooperate by sharing your views and valuable time.

Please follow the instructions given on the survey and return the survey with your responses in the envelope provided.

Thank you for participating!

Wenmin Huang

Wenmin (Mindy) Huang
Graduate Student
Department of Teacher Education
University of Nebraska at Omaha

IRB APPROVED
VALID UNTIL 02-12-08

6001 Dodge Street / Omaha, NE 68182-0163
402-554-3666 / FAX: 402-554-3744

Appendix C: Advisor's Support Letter for Surveys

University of Nebraska Omaha

COLLEGE OF EDUCATION
Teacher Education

Dear ESL Colleague,

Enclosed you will find a survey regarding the teaching of ESL students. Mindy Haung is a current graduate students working on her masters and getting an ESL endorsement. She is writing her thesis on ESL. She is using a survey approach to look at the teaching of ESL students. I would appreciate very much if you would be so kind as to participate in her study.

The surveys are straight forward and should take only 15 minutes to complete.. I know you are very busy, but the information obtained from this study will benefit current and future ESL teachers and students. **Participation is voluntary and your names will not be used in the thesis.**

Thank you in advance for your help.

Dr. Yvonne

Dr. Yvonne Tixier y Vigil
College of Education
University of Nebraska at Omaha

IRB APPROVED
VALID UNTIL 02-12-06

6001 Dodge Street / Omaha, NE 68182-0163
402-554-3666 / FAX: 402-554-3744

Appendix D: Intelligence Survey (IS)

Please read each statement carefully. Circle one of the five scales for each statement that best describes you.

1= Least descriptive
2= Not very descriptive
3= Somewhat descriptive
4= Descriptive
5= Most descriptive

1. It's often hard for me to sit still. I'd rather be up and active.	1	2	3	4	5
2. As I walk in the woods I often pause quietly to observe habits within wildlife.	1	2	3	4	5
3. I enjoy taking great photographs.	1	2	3	4	5
4. I am drawn to water outside, such as lakes, creeks, rivers or oceans.	1	2	3	4	5
5. I enjoy throwing and catching games.	1	2	3	4	5
6. I enjoy drawing and painting.	1	2	3	4	5
7. Preparing to debate an issue is a challenge I enjoy.	1	2	3	4	5
8. Sometimes I find myself tapping rhythms on the table while waiting.	1	2	3	4	5
9. Telling stories to others is great fun.	1	2	3	4	5
10. For me, sketching a building seems easier than baking a cake.	1	2	3	4	5
11. I would enjoy writing an essay for a contest.	1	2	3	4	5
12. Multiple choice tests are usually easy for me.	1	2	3	4	5
13. I am sensitive to others' feelings.	1	2	3	4	5
14. One favorite activity is keeping a personal journal.	1	2	3	4	5
15. Choosing the best metaphor in a poem is a joy for me.	1	2	3	4	5
16. I love the challenge of participating on sports teams.	1	2	3	4	5
17. When dining in a restaurant, I enjoy listening to background music.	1	2	3	4	5
18. I enjoy walking alone at times rather than having someone join me.	1	2	3	4	5
19. When I read a novel I often compare personal choices I would make.	1	2	3	4	5
20. After I've been to a concert, I hear melodies in my mind for days.	1	2	3	4	5
21. I like various kinds of animals and plants.	1	2	3	4	5
22. I often spontaneously sing, hum, or whistle.	1	2	3	4	5
23. When I write I tend to base stories on personal experience.	1	2	3	4	5
24. I easily identify patterns and derive meanings from data.	1	2	3	4	5
25. I learn from and enjoy observing nature change in all four seasons.	1	2	3	4	5

Please continue on the last page

Please read each statement carefully. Circle one of the five scales for each statement that best describes you.

1= Least descriptive
2= Not very descriptive
3= Somewhat descriptive
4= Descriptive
5= Most descriptive

26. My best thinking surfaces when I brainstorm with other people.	1	2	3	4	5
27. Helping others complete a project brings me a lot of satisfaction.	1	2	3	4	5
28. Finding solutions for numerical problems is fun.	1	2	3	4	5
29. Every chance I get, I find I enjoy golf or tennis or softball.	1	2	3	4	5

Thank you very much for completing the Survey!

Appendix E: MI-Inspired Teaching Strategy Index (MITSI)

Please read each statement carefully. Circle one of the five scales for each statement that best describes your teaching strategies.

1= Rarely or never, 2= Seldom, 3= Sometimes, 4= Often, 5= Usually or always

1.	I have students talk or write about vocabulary words from their reading.	1 2 3 4 5
2.	I have students use body language to act out letters or words.	1 2 3 4 5
3.	I have students draw or paint pictures to show their understanding of what I teach.	1 2 3 4 5
4.	I use rhythmic patterns to help students remember certain words.	1 2 3 4 5
5.	I have students do logic puzzles such as "crossword" to enhance their vocabulary.	1 2 3 4 5
6.	I offer students reflective time to express their own. feelings.	1 2 3 4 5
7.	I have students work in groups to complete projects.	1 2 3 4 5
8.	I design lessons that bring nature in the classroom via videos, objects, animals, plants, etc.	1 2 3 4 5
9.	I have students collect their favorite animal or plant, drawings, photographs or objects.	1 2 3 4 5
10.	I encourage peer sharing about what they've learned.	1 2 3 4 5
11.	I encourage students to connect what is taught with aspects of their own lives.	1 2 3 4 5
12.	I have students play math or logic games that shows what has been learned.	1 2 3 4 5
13.	I use songs to help students learn new concepts.	1 2 3 4 5
14.	I use cards of artwork such as paintings, drawings, and cartoons to present what I teach to students.	1 2 3 4 5
15.	I have students engage in role-playing to show their understanding of the topic(s).	1 2 3 4 5
16.	I have students retell the text they have just read to improve reading comprehension.	1 2 3 4 5
17.	I emphasize a balance of students' listening, speaking, reading, and writing in my classroom activities.	1 2 3 4 5
18.	I integrate students' physical movements into classroom activities.	1 2 3 4 5
19.	I have students create charts, diagrams, or graphs to depict the concepts being learned.	1 2 3 4 5
20.	I take time out to share the sounds of particularly interesting words when reading aloud to my students.	1 2 3 4 5
21.	I have students use their mathematical or logic talents to predict or guess the meanings of what is taught.	1 2 3 4 5

Please read each statement carefully. Circle one of the five scales for each statement that best describes your teaching strategies.

1= Rarely or never, 2= Seldom, 3= Sometimes, 4= Often, 5= Usually or always

22. I encourage independent work based upon students' interests.	1	2	3	4	5
23. I provide opportunities for students to help each other in Learning.	1	2	3	4	5
24. I encourage students to perform learning activities by using objects from the natural world.	1	2	3	4	5
25. I have students classify flora, fauna, and natural phenomena.	1	2	3	4	5
26. I encourage students to celebrate classmate successes through creating cheers, giving praise, and clapping.	1	2	3	4	5
27. I consider my students' inner feelings, dreams, or ideas in developing classroom activities.	1	2	3	4	5
28. I have students explore the patterns found in words, for example, set, get and let.	1	2	3	4	5
29. I encourage students to read sentences out loud with rhythmic patterns.	1	2	3	4	5
30. I have students draw before they write.	1	2	3	4	5
31. I have students physically move to demonstrate some particular meanings of what they learn.	1	2	3	4	5
32. I have students speak spontaneously about different topics.	1	2	3	4	5
33. I use both silent and oral reading to develop comprehension.	1	2	3	4	5
34. I have students act out about the various language-learning topics.	1	2	3	4	5
35. I have students imagine or mind-map stories.	1	2	3	4	5
36. I have students listen to recorded music or songs related to what is being taught.	1	2	3	4	5
37. I provide opportunities for students to compare or classify what they have learned.	1	2	3	4	5
38. I ask students to share how they think the characters are feeling in the story.	1	2	3	4	5
39. I have students work together on various projects.	1	2	3	4	5
40. I integrate natural phenomena into my teaching.	1	2	3	4	5

Demographic Information:

1. Your age: _____

2. Your gender: 1. Male; 2. Female

3. Your school level:
    1. Elementary school

2. Junior high/middle school
3. Senior high school

4. The average number of the students in your classroom:_____

5. Your total years being a teacher: _____

6. Your total years being an ESL teacher: _____