Understanding Learner-Centered Instruction from the Perspective of Multiple Intelligences

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Abstract: *This article describes a pilot study that investigated applications of the Theory of Multiple Intelligences (MI) to shape and inform teaching practices and instructional strategies. The purpose of the study was to identify, document, and promote effective real-world applications of MI theory in foreign and second language classrooms. Results indicated that teachers were profoundly affected by these approaches: They felt that their teaching experienced a shift in paradigm to a more learner-centered classroom; they were once again energized and enthusiastic about their pedagogy; and they felt that 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. For the pilot study, student achievement data are inconclusive. Phase II of the MI study will attempt to collect more detailed data related to classroom performance and student achievement. An unanticipated outcome of this research project was the positive impact it had on student attitudes and motivation to learn.*

Introduction

During the 1999–2000 school year, 15 foreign language and English as a Second Language (ESL) teachers and 450 students from six different states participated in an action research study to determine the impact of implementing the Theory of Multiple Intelligences (MI) in daily classroom activities. MI theory, introduced by Howard Gardner (1983), centers on the concept that there is no general intelligence, but rather that each person has at least eight distinct intelligences that can be developed throughout his or her lifetime (see Appendix A).

The study applied Howard Gardner's Theory of Multiple Intelligences to foreign and second language learners in grades 8 to 12. MI theory suggests that there is a plurality of intellect. From birth, individuals may differ in particular intelligence profiles, that is to say, "all human intelligences are a function of genes and environment interacting in different ways and in different proportions for each group and for each individual" (Kagan & Kagan, 1998). Life experiences may alter these profiles over time. Intelligences are biological potentials that are seen in "raw" (unchanged) form in individuals. According to Gardner (1983), one of the most important purposes of schools is to develop multiple intelligences, thus helping people reach vocational goals that are appropriate to their particular spectrum of intelligences. This theory is a pluralistic view that recognizes different cognitive strengths and contrasting cognitive styles.

At the outset of the study, the general characteristics of each student's intelligence profile were identified with an informal MI survey. This survey (Appendix B) was adapted from Armstrong's book, *Seven Kinds of Smart* (1993). The purpose of the survey was to raise student and teacher awareness of multiple intelligences. For most students, this experience was an intro-

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duction to the theory and an opportunity to learn more about their own learning preferences. For teachers, survey results yielded valuable information about individual students, thus providing a critical reference point for instructional planning. In developing thematic lessons, teachers made efforts to include all the multiple intelligences in their daily and/or weekly instructional strategies and assessment.

The researcher and participating teachers agreed that the plan for the MI study was to create and disseminate a collection of instructional strategies and alternative forms of assessment that activated the eight intelligences. Participating teachers were to share ideas and strategies with each other, with the intent of enriching classroom instruction at all project sites. Teachers developed lesson plans and alternative assessments using a variety of planning tools, including background materials provided by the researcher. The MI study website was an additional resource.[1] The website was maintained throughout the research project to enhance collaboration among study participants and to make it easier for outside educators to learn about the project and communicate with the researcher.

Informal interviews and student and teacher comments reaffirmed the belief that the way information is presented and the choice of instructional strategies can and do affect student learning, student attitudes, and the learning environment. The participating teachers noted that these alternative methods of instruction had a positive impact on the achievement of some students in the study.

In examining the effects of the interventions, that is, the use of MI instructional strategies and assessment, the researcher reviewed qualitative and quantitative data collected during the research study. Qualitative data consisted of teachers' electronic communications with the researcher, weekly activity logs with detailed notes, lesson plans, project descriptions, student exit slips (students' answers to three or four short-answer questions at the end of randomly selected classes, to determine their reactions to MI instructional strategies and assessment), and participants' comments at the end of the study. Quantitative data consisted of students' grades before and after the MI study, as recorded by participating teachers.

Review of the Literature and Howard Gardner's Theory of Multiple Intelligences

The literature on multiple intelligences provides a sound theoretical foundation for an integrated, multidimensional style of education across learning styles and cultures. However, there is a paucity of research in practical applications of MI theory in foreign and second language classrooms. Gardner's seminal work on this subject, *Frames of Mind* (1983), devotes over 300 pages to explaining and dif-

ferentiating what were then conceived as six intelligences, but only two chapters (60 pages) to the implications and applications of MI theory in education.

A lively defense of Gardner's theory is presented in the article, "Where Do the Learning Theories Overlap?" (Guild, 1997). The author compares the key features and principles of three learning theories: multiple intelligences, learning styles, and brain-based education. He concludes that these theories intersect significantly, particularly in terms of their intended results. One point in common is that these theories are learner-centered. Another similarity is the teacher's role as reflective practitioner and facilitator, with the student acting as a reflective partner. An additional mutual theme of these theories is the concern they have for the education of the whole person. All three theories emphasize curricula with depth and breadth. Additionally, MI theory, learning styles, and brain-based education promote diversity and inclusiveness, rather than the "lowest common denominator" approach to teaching. These three approaches focus on how students learn differently, acknowledging that: "The more diverse learning experiences we provide our students, the more robust their education will be, the more ways they will learn each topic, hence the more they are prepared to succeed in a world marked by increasing diversity and an accelerating change rate" (Kagan & Kagan, 1998, p. xxi).

Since formulation of his theory of multiple intelligences, many books, professional papers, and journal articles have been published to fill the perceived gap in field research related to classroom lesson planning based on the theory. One example, *Multiple Intelligences: Multiple Ways to Help Students Learn Foreign Languages* (Gahala & Lange, 1997), notes, "Teaching with multiple intelligences is a way of taking differences among students seriously, sharing that knowledge with students and parents, guiding students in taking responsibility for their own learning, and presenting worthwhile materials that maximize learning and understanding" (p. 34).

A second example, *Integrating Curricula with Multiple Intelligences* (Fogarty & Stoehr, 1996) elaborates upon MI theory, using a thematic approach and presenting threads of content in 10 curriculum models. These authors include a model high school lesson plan that uses MI theory, but they omit any direct reference to contextualized teaching in foreign or second language classes. The lessons are presented visually with graphic organizers and basic lesson plans, but helpful explanatory text is minimal.

A third example is *Teaching and Learning Languages Through Multiple Intelligences* (Christison, 1996). According to this author:

MI theory offers ESL/EFL teachers a way to examine their best teaching techniques and strategies in light of human differences. There are two important steps

to follow in understanding how MI theory applies to TESL/TEFL. The first step is to identify activities that we frequently use in our classes and categorize them. The next step is to track what we are doing in our classes with multiple intelligences:

1. Awaken the intelligence — lesson begins with a riddle or brain teaser. The teacher divides students in groups and gives each one a series of riddles. The students then work collaboratively to solve the riddles.
2. Amplify the intelligence — practice with the awakened intelligence and it will improve. Students practice describing commonly known objects.
3. Teach for/with the intelligence – students describe objects in a large-group discussion.
4. Transfer the intelligence – help students reflect on their learning in the previous stages and help them make the lesson content relevant to their lives outside the classroom. (p. 13)

According to Gardner's theory, there are eight intelligences: Bodily/Kinesthetic, Interpersonal/Social, Intrapersonal/Introspective, Logical/Mathematical, Musical/Rhythmic, Naturalist, Verbal/Linguistic, and Visual/Spatial (for definitions, see Appendix A). Every learner has the capacity to exhibit all of these intelligences, but some are more highly developed than others in certain individuals. Based on MI theory, the challenge in education is for teachers to create learning environments that foster the development of all eight intelligences. Balanced instructional presentations that encourage addressing the multiple intelligences benefit all learners and expose students to the appropriate means of strengthening their underutilized intelligences.

Providing opportunities for students to learn in ways in which they are most receptive maximizes their potential for success in the academic setting and in real life (Armstrong, 1994; Beckman, 1998). Integrating multiple intelligences into the classroom setting does not require a major overhaul of teaching methodology or a total revamping of adopted curricula. In general, supplementing and revising existing lesson plans with creative and innovative ideas suffice (Campbell, 1997). Thematic and interdisciplinary units that provide cooperative learning and that include a variety of tasks accomplished through a choice of activities allow for multiple intelligences to be well represented within the context of instruction. Both Glasgow (1996) and Glasgow and Bush (1996) emphasize classroom use and real-world applications of such lessons. Relating the eight intelligences to future career choices is especially valuable.

Thematic and content-based teaching go hand in hand with the use of alternative performance assessments, whereby student evaluation goes beyond traditional pencil-and-paper testing. Classrooms implementing the principles of Gardner's MI theory use authentic assessment, giving students opportunities to demonstrate higher-order thinking skills and providing examples of how course content can be applied to new situations (Campbell, 1997).

MI Action Research Study

Research Questions

Phase I of the MI study addressed these research questions:

1. How do teachers understand and use the MI survey to inform instructional strategies and alternative forms of assessment?
2. In what ways do teachers apply MI theory in foreign and second language classrooms?
3. From the teachers' perspective, how effective was the application of MI strategies in foreign and second language instruction?
4. How can MI theory shape and inform foreign and second language learning?

Research question 1 framed teachers' participation in the study. Teachers were encouraged to share and discuss the results of the MI survey (prestudy and poststudy) with both students and parents. The inclusion of all eight intelligences, as well as answers to research question 2, were repeatedly demonstrated in daily MI logs (grids used by teachers to chart MI interventions), weekly journals, and an MI activities bank that was created and posted on the study website. Answers to research question 3 were reflected in teachers' satisfaction with the creation and implementation of more learner-centered activities. This in turn enhanced thematic and/or interdisciplinary units that were group-based and provided a choice of tasks to be accomplished through a choice of means, allowing for all intelligences to be addressed within a lesson. Finally, research question 4 was answered through an examination of teachers' weekly journals and a comparison of the experimental and control groups' grades.

Sample Population

Teachers participating in the study were from Virginia, New York, Florida, Texas, Georgia, and Kentucky. These teachers selected students in grades 8 to 12 who were enrolled in either a foreign or second language class. Levels in the foreign language classes included I, II, and III. English as a Second Language (ESL) classes included level B-1 (see Appendix A). Since this study took place during the third marking period of the school year, students were not randomly selected and/or assigned. Students participating in the study attended schools in urban, rural, and suburban geographic locations. Their ages ranged from 14 to 18 years.

Research Design

Experimental Groups. The teachers participating in the study selected the students. The decision as to which class would be experimental and which would be the control was left entirely up to the participating teacher.[2] Students in the experimental groups received instruction that incorporated MI theory. Each student's dominant intelligence(s) was/were identified using the "Test Your Seven Kinds of Smart" (Armstrong, 1993) multiple intelligences survey. Thematic and content-based lessons that strengthened the multiple intelligences were constructed. The objective was to construct planning webs and themes (see Appendix A) that incorporated a wide range of multiple intelligences activities and products. Lesson plans were developed using a variety of planning tools. In addition, teachers kept daily MI logs to chart their interventions and weekly journals to highlight progress, successes, and trends. To assess the effects of intervention, each week the students completed informal classroom interviews, exit slips, and surveys. Teaching strategies included demonstrations, modeling, feedback response, learning centers, discussion, students' responses to learning experiences, total physical response (TPR), hands-on experiences, and cooperative learning (see Appendix C).

Control Groups. Students in the control groups were taught using a "modified" pedagogy. Instruction was mostly teacher-centered. Teachers relied heavily on the use of rote drill and memorization. There were no cooperative learning or group activities. Students did not engage in any hands-on activities. Textbooks and occasional black-line master transparencies were the only visuals used. Lessons were neither thematic nor content-based. Plans were constructed to strictly follow the textbook, page after page. There was no inclusion of supplemental material(s) for variety or enrichment. Teachers were instructed to maintain standard classroom procedures for the "control" groups. Instructional strategies were to be representative of their normal classroom routines, with no significant changes implemented during the nine-week period of the MI study. These students continued to receive instruction in the target language through conventional instructional strategies. Data were collected based on the four research questions.

Data Collection

For Phase I of the MI study, data were collected during the third quarter of the academic year, as teachers implemented MI activities in their foreign and second language classes for approximately nine weeks. To begin the MI study, teachers explained the research project to students in selected classes, secured parent permission for participation (see Appendix D), and administered the informal MI survey (see Appendix B). Data from surveys were compiled for contin-

uous reference during instructional planning.

The researcher provided project teachers with data charts for weekly logs (see Appendix E), in which they recorded brief descriptions and the frequency of implementation of MI activities in their classes. Participating teachers communicated electronically with the researcher, providing weekly updates and reflective comments on the ongoing progress of the research project. Their messages included pertinent observations of class responses and individual student reactions. As the study moved forward and teachers developed new strategies and assessments, these materials were shared with the MI study group. Some were placed on the MI study website. One school had two teachers participating in the project, and their mutual professional collaboration became a positive experience throughout the study.

During the nine-week period, teachers asked students to complete exit slips (see Appendix F), in which they described individual reactions to the MI activities and alternative assessments. Teachers provided the researcher with descriptive narratives to summarize their feelings about the research project.

To note academic progress, teachers compiled grade reports for target groups of students at the end of the third quarter. These data were compared with student achievement data from the second quarter, which was prior to implementation of the MI study. Grades of individual students in the experimental and control groups were compared for the second and third quarters of the academic year.

Method

Using the Multiple Intelligences Survey, adapted from the book *Seven Kinds of Smart* (Armstrong 1993), the MI study teachers collected informal data about individual students and their intelligence profiles (see Appendix B). The results of the survey helped to increase student self-awareness and strengthened teacher understanding of individual student differences. As the project proceeded, teachers modified their lessons in selected classes, attempting to activate all the multiple intelligences as they presented thematic units. They developed instructional plans that incorporated a number of multiple intelligences activities and products. Using a variety of planning tools, teachers exchanged ideas and shared successes as they implemented new and innovative instructional strategies.

Throughout the process, teachers kept informal journals to highlight progress, note successes, and identify general trends. To document the effects of the MI interventions, data collected from informal interviews (Appendix G), weekly logs (Appendix E), student exit slips (Appendix F), and MI surveys (Appendix B) were compiled. Documentation regarding the impact of multiple

intelligences instruction in these classes included reflective journals provided by participating teachers, weekly logs, and classroom observations. Information from students in experimental groups was determined from student products, performance rubrics, student exit slips, and MI surveys.

Data Analysis

Answers to the four research questions provided descriptive data that were collected for both control and experimental groups. Data analysis compared students' outcomes on the MI survey (prestudy and poststudy) with their actual performance in class, that is, daily participation and grades (quizzes, tests, and projects) for both groups. An analysis was made to determine what correlation, if any, was evident between the MI survey and student performance. Data were examined by looking for emerging patterns in both student performance and teacher's instructional strategies. Both qualitative and quantitative data were collected. Qualitative data consisted of teachers' electronic communications, that is, reflective journals, weekly activity logs, lesson plans, project descriptions, student exit slips, and participants' comments at the end of the study. Quantitative data included looking at student grades both before and after the MI study to determine if there had been a change. Finally, a reflective meta-analysis was conducted with teachers at the end of the study, to ascertain their views on their participation in this action research.

Results and Discussion

The effects of MI intervention were documented through observations, exit slips, survey checklists, and student reactions. This feedback reaffirmed our expectation that how one is taught, what strategies are utilized, and in what manner information is presented can and do affect student learning. Learner-centered instruction from the perspective of multiple intelligences further demonstrated that students' strengths and weaknesses can be affected by a teacher's pedagogical style. Most students in both the experimental and control groups demonstrated growth in oral and written proficiency in the target language at the end of the third-quarter marking period.

Results showed that gains in student achievement were rather inconsistent and that a number of extraneous factors may have influenced the outcome of student performance grades. This aspect of the MI study will be more carefully controlled during implementation of phase II, in order to document the impact of MI strategies on achievement in foreign and second language classes.

One surprising result of the MI study was the affective outcome. Most students expressed positive feelings about teachers who used a variety of instructional strategies and

assessment practices that addressed the multiple intelligences. Teachers attributed this positive reaction to the greater degree of flexibility, variety, and choice that MI strategies allowed students in their classrooms.

This action research study was designed and implemented to determine and better understand learner-centered instruction from the perspective of multiple intelligences. The purpose of this study was to identify, document, and promote effective real-world applications of MI theory in foreign language or second language classrooms. The researcher's premise was that given what we know about the educational needs of students, all teachers must be better equipped to widen their pedagogical repertoire. It is evident that given the vast array of diverse learners, one size does not fit all. There is no cookie-cutter prescription for teaching that can be superimposed on all students in every school setting. This study clearly indicates the importance of this kind of action research to encourage new "ways of knowing" among classroom teachers of the twenty-first century.

Limitations of the Study and Suggestions for Further Research

Phase I of the MI study highlighted some preliminary findings and raised some important questions for the continuation of research in Phase II. Scant research related to the application of the theory of multiple intelligences in foreign/second language classrooms is available, so this pilot project attempted to explore uncharted territory.

Some of the limitations of the MI study are:
- Classes represented different ages/grades (8–12) and different ability levels (honors classes, regular classes, learning-disabled students, English language learners)
- Target content in selected French, Spanish, and ESL classes differed
- The degree of implementation of MI activities and strategies varied from teacher to teacher
- Grading policies differed in each school setting
- Alternative assessments represented a variety of scoring methods
- Backgrounds in the theory of multiple intelligences and practical experiences among participating teachers were varied, with some having an extensive background prior to the study and others being new to this approach

Conclusion

The MI action research study showed that the theory of multiple intelligences may have significant implications for instruction in foreign and second language classrooms. Although it is not a quick fix, MI theory can have a positive impact on both teachers and students. Practitioners who thoughtfully apply the theory to support educational

goals may find that multiple intelligences contribute to their overall effectiveness as educators. Teachers who plan and organize instruction around the learning preferences of individual learners, emphasizing special strengths and shoring up underutilized gifts and talents, may unlock the full learning potential of their students. The benefits of applying MI theory to daily instruction relate to academic achievement and student motivation. Phase II will explore these issues in greater depth, to better understand how foreign/second language instruction that emphasizes the multiple intelligences relates to student performance outcomes and affective responses.

Notes

1. The web site was temporary and was only available for the duration of the study.

2. Teachers' weekly journals to the researcher revealed that their selection of classes for "experimental" and "control" was primarily based on their decision to implement the MI theory with a class that they felt needed more learner-centered instructional strategies.

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Appendix A

Definition of Terms

Howard Gardner's Eight Multiple Intelligences

Bodily/Kinesthetic	The ability to use one's mental abilities to manipulate and coordinate movements of one's physical body
Interpersonal/Social	The ability to recognize and understand others' feelings and interact appropriately with other people
Intrapersonal/Introspective	The ability to perceive one's own feelings and motivations for planning and directing one's life
Logical/Mathematical	The ability to detect patterns, calculate, think logically, and carry out mathematical operations
Musical/Rhythmical	The ability to recognize, compose, and remember tonal changes, rhythms, and musical pitch
Naturalist	The ability to recognize and classify natural surroundings, such as flora and fauna or rocks and minerals
Verbal/Linguistic	The ability to effectively manipulate language to express oneself and use language as a means to remember information
Visual/Spatial	The ability to perceive and manipulate images to solve problems

Intelligence: an identifiable set of operations or thought processes that can actually be observed (Gardner, 1983)

Learning style: a general approach a learner uses to learn a new language (Scarcella & Oxford, 1992, p. 61)

Planning webs and themes: a series of learning sequences designed around a theme or topic that provides students the opportunity to use oral language, reading, writing, and critical thinking for learning and sharing ideas.

B-1: As defined by the participating teacher: "My B-1 level students are considered *intermediate* English language learners as determined by their scores on the Degrees of Reading Power (DRP) test, ranging from about 25–40 for this level. This is not a precise definition, and of course minimum oral and writing proficiencies using the county (Fairfax) rubrics also determine the level."

Appendix B

Multiple Intelligences Survey Instrument
Multiple Intelligences Research Project

"Your Seven Kinds of Smart" (+ 1)
Adapted from *(Armstrong, 1993)*

Check (x) each statement that applies to you.

Verbal / Linguistic Intelligence   TOTAL = _____
____ Books are very important to me.
____ I hear words in my head, before I read, speak, or write them down.
____ I am good at word games, like Scrabble or Password.
____ I enjoy entertaining others or myself with tongue twisters, rhymes, or puns.
____ English, social studies, and history are easier for me than math and science.
____ I have recently written something that I am especially proud of.

Logical / Mathematical Intelligence   TOTAL = _____
____ I can easily compute numbers in my head.
____ Math and/or science are among my favorite subjects in school.
____ I enjoy brainteasers or games that require logical thinking.
____ My mind searches for patterns and regularities in things.
____ I am interested in new developments in science.
____ I believe that almost everything has a logical explanation.

Visual / Spatial Intelligence   TOTAL = _____
____ I often see clear visual images when I close my eyes.
____ I am sensitive to color.
____ I enjoy doing jigsaw puzzles.
____ I like to draw or doodle.
____ I can easily imagine how something might look from a bird's eye view.
____ I prefer looking at reading material with lots of illustrations.

Bodily / Kinesthetic Intelligence   TOTAL = _____
____ I participate in at least one sport or physical activity on a regular basis.
____ I like working with my hands on concrete activities (like carpentry, model-building,
      sewing, weaving).
____ I like to spend my free time outdoors.
____ I enjoy amusement rides and other thrilling experiences.
____ I would describe myself as well coordinated.
____ I need to practice a new skill, not just read about it or see a video about it.

Musical / Rhythmic Intelligence   TOTAL = _____
____ I have a pleasant singing voice.
____ I play a musical instrument.
____ My life would not be so great without music.
____ I can easily keep time to music with a simple percussion instrument,.
____ I know the tunes to many different songs and musical pieces.
____ If I hear a musical selection a couple times, I can usually sing it fairly accurately.

Interpersonal Intelligence

TOTAL = _____

____ I am the sort of person that others come to for advice.

____ I prefer group sports (like softball) rather than individual sports (like swimming).

____ I like group games like Monopoly better than individual entertainment.

____ I enjoy the challenge of teaching others how to do something.

____ I consider myself a leader, and others have called me a leader.

____ I like to get involved in social activities at my school, church, or community.

Intrapersonal Intelligence

TOTAL = _____

____ I regularly spend time alone, reflecting or thinking about important questions.

____ I have opinions that set me apart from the crowd.

____ I have a special hobby or interest that I like to do alone.

____ I have some important goals for my life that I regularly think about.

____ I consider myself to be independent minded or strong willed.

____ I keep a personal diary or journal to write down my thoughts or feelings about life.

Naturalist

TOTAL = _____

____ I have a garden and/or like to work outdoors.

____ I really like to go backpacking and hiking.

____ I enjoy having different animals around the house (in addition to a dog or cat).

____ I have a hobby that involves nature.

____ I like to visit zoos, nature centers, or places with displays about the natural world.

____ It's easy for me to tell the difference between different kinds of plants and animals.

Areas of strength   (4 or more checks)

_____

_____

What I learned about myself that I did not know before

_____

_____

Appendix C

Multiple Intelligences' Instructional Strategies and Activities

Bodily/Kinesthetic	Role playing, Dancing, TPR, TPRS, Hands-on learning, Manipulatives, Multimedia games or activities, Aerobic alphabet, Building a model or 3-D project
Interpersonal/Social	Cooperative teams, Paired activities, Peer teaching, Board games, Simulations, Surveys and polls, Group brainstorming, Situations or dialogs
Intrapersonal/Introspective	Describe/write about preferred way(s) of spending free time, Keep a journal on a particular topic, Engage in independent study
Logical/Mathematical	Word order activities, Grammar relationships, Pattern games, Number activities, Classifying and categorizing, Sequencing information, Computer games, Cause and effect activities
Musical/Rhythmical	Write jingles for a commercial, Jazz chants to remember vocabulary/grammar/verbs, Musical cloze activities, Create music for skits and plays, Use music as a stimulator, Look for tonal/rhythmic patterns in music of target language
Naturalist	Describe changes in the local environment, Debate the issue of homeopathic medicine versus store-bought remedies, Plan a campaign drive that focuses on saving an endangered species
Verbal/Linguistic	Debates, Storytelling, On-line communications (E-pals), Group discussions, Word-processing programs, Word games
Visual/Spatial	Using graphs and diagrams, Drawing a response, Video exercises, Computer slide shows, Multimedia projects, Mind mapping, Graphic organizers

Appendix D

Letter to Parents Requesting Permission for MI Study Participation
Multiple Intelligences Research Project

February 2000

Dear Parents/Guardians:

Would you like your son/daughter to explore new dimensions of learning? I am announcing a wonderful opportunity for participation in a national research project focusing on Howard Gardner's Theory of Multiple Intelligences. This theory suggests that every individual is intelligent and that each person has different learning preferences and strengths. The Multiple Intelligences Research Project offers foreign/second language teachers new strategies for instruction, with the purpose of enhancing classroom learning experiences for their students. One of the main goals of the study is to stimulate and enrich the instruction your child receives in his/her foreign or second language class.

There are no special requirements for project participation. Your son/daughter's teacher has volunteered to work with me in collecting data for the research study. Please be advised that all information will be kept confidential, and your child's privacy will be protected at all times. Please contact me if you have questions or concerns or would like more background information on the project.

I hope that you will consider approving this dynamic learning opportunity for your child. Your signature on this page verifies that you have read this letter and grant permission for your son/daughter to participate in the Multiple Intelligences Research Project.

Sincerely,
Associate Professor of Education

_____   _____
             parent signature   print name of child

_____
              date

Appendix E

Teachers' Weekly Log: Implementation of Multiple Intelligences Activities

MULTIPLE INTELLIGENCES RESEARCH PROJECT
Daily Log

Name:_____ Week #_____ Dates_____

	Monday	Tuesday	Wednesday	Thursday	Friday
Bodily/ Kinesthetic					
Interpersonal/ Social					
Naturalist					
Visual/ Spatial					
Musical/ Rhythmical					
Intrapersonal/ Introspective					
Logical/ Mathematical					
Verbal/ Linguistic					

Appendix F

Student Exit Slip

MULTIPLE INTELLIGENCES RESEARCH PROJECT
Student Exit Slip
Please answer the following questions.

1. List two (2) things that you liked about today's class.

2. What is one (1) thing you would like to change about this class?

3. Today I did really well at:

Appendix G

Informal Student Interview

MULTIPLE INTELLIGENCES RESEARCH PROJECT
Sample Informal Interview

Teacher: "So how did class go for you today?"

Student: "It was fun! I really like that we get to do so many different activities in one period."

Teacher: "Which activities did you particularly like?"

Student: "I like the chance to work with a partner or in groups. That way everybody gets to talk more and if we make a mistake it's not in front of the whole class."

Teacher: "How do you feel about my using the multiple intelligences theory to try and reach more students?"

Student: "This is really working for me. I think I understand now how I learn best and that's something I can take with me to all of my classes.