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MULTIPLE INTELLIGENCES IN THE CLASSROOM

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Curriculum and Instruction

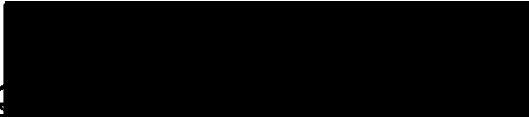
by
Julia Marie Ramirez
December 2009

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Approved by:


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ABSTRACT

This qualitative study was designed to examine teacher feedback concerning the application of multiple intelligence methods in their classroom. The study used methodological triangulation to investigate a number of questions including: Does the theory of multiple intelligences facilitate students' learning and interest levels? Do teachers indentify the multiple intelligences theory as a useful instructional method in their classroom? How are teachers implementing the multiple intelligences theory in their classes? Observations, questionnaires, interviews, and the collection of artifacts were used to answer these questions. The study found the theory of multiple intelligences was being implemented throughout the curriculum and students were maintaining an evident level of engagement; in turn teachers found it to be a useful instructional method. The recommendations for further research include changing the methodology to a quantitative study and examining student grades or test scores in a multiple intelligences classroom. It is hoped that addressing the identified questions would help the school site develop a stronger multiple intelligences school.

ACKNOWLEDGMENTS

This project was done in partnership with many people. Without their help this project would not have been possible and I would like to acknowledge their assistance. I would especially like to thank my professors whom guided me throughout this process and helped develop me into a researcher. I would like to thank Dr. Bob London for being my second reader and helping me gain clarity on my research. Dr. Susan Daniels, thank you for your encouragement and guidance as my committee chair, and also for believing in me. I was discouraged after some of the edits but you acquainted me with and prepared me for academic writing, while providing encouragement. Thank you very much, I am truly grateful. It will be one of my missions to one-day pay it forward as the two of you have done for me.

DEDICATION

Family is a very important part of my life. I would not be where I am today if it were not for their love and support and for this I am dedicating this work to them. Thank you to my entire family; parents, grandparents, aunts, uncles, and generations of cousins for it was you who instilled the value of education in me at a young age and I am very grateful.

My immediate family played a major role in this adventure. To my brother Ray-Ray, thank you for your uplifting words throughout this process. Dad, you give me hope and keep me focused on education. You have provided me with optimism throughout the years with your continuous words of encouragement. You have provided me with expectations and focus as a teacher; I strive to be a better teacher so that I do not allow children to fall through the cracks as your teachers did to you. Your story is an inspiration to all and I am proud of you. Mom, I have no words to describe the deep love and appreciation for all you do. You continue to be focused on what others need to be successful and that is your love and support. Mom and Dad, the word no never came out of your mouths when it came to school. You were never too busy nor did you not

feel like helping on certain days, you rearranged appointments, drove my children where they needed to go, did the grocery shopping, made dinners, and washed dishes all so I could make my dreams come true, for that I will forever be indebted to you both.

My children have watched me attend classes, study, and write for the past two years and I hope I have set an example for them to go after their goals with determination because they have truly inspired me. Arcadia, twelve years ago you made me realize that I wanted to provide you with a better life and education was the only way. At thirteen years old, you helped keep house and watched your brother and sister in order for me to study and write. I could not have finished this without your help and words of cheer. Zachary, your hugs and kisses while I was writing were the motivation I needed to finish. Elizabeth, it was your blue eyes and beautiful smile that also helped me get through this. While I was writing you would always arrive in the room with that smile to help me get over a block and in turn make me smile. Thank you kids, for your love, understanding, and encouragement through out this entire process.

Finally, I want to express my deepest appreciation and

love for my husband Anthony. Fourteen years ago some said we were ruining our lives but I think with our love, support, and wanting to see each other succeed we are proving otherwise. Honey, without you none of this would have been possible; you have been understanding when it came to the late night study and writing sessions, the lack of homemade dinners, and the deficiency in cleaning house. Thank you Anthony from the bottom of my heart. We will continue to hold on and enjoy the ride of life. I am excited for what the future holds for our family and us.

The classes, research, and graduation would not have been attainable without everyone working behind the scenes, so I thank you and dedicate this to you.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGMENTS	iv
CHAPTER ONE: INTRODUCTION	
A Possible Strategy for Attaining Academic Proficiency	1
CHAPTER TWO: REVIEW OF THE LITERATURE	
Multiple Intelligences Examined	12
CHAPTER THREE: DESIGN AND METHODOLOGY	
The Exploration of Multiple Intelligences and the Classroom	35
CHAPTER FOUR: FINDINGS	
The Presence of Multiple Intelligences	51
CHAPTER FIVE: CONCLUSION	
The Usefulness of Multiple Intelligences	72
REFERENCES	77

CHAPTER ONE

INTRODUCTION

A Possible Strategy for Attaining Academic Proficiency

General Statement of the Problem

Educators are continuously looking for instructional methods that will fit students' learning styles and lead to the understanding of subject material. Our current educational climate is dominated by pencil-to-paper assessments, uniform application of standards, scripts, and mandates (Eisner, 2004; Denig, 2004;). Curriculum has for the most part become a one-size-fits-all program, yet it seems to be ill fitting for many and failing our children (Noble, 2004). Many in education- and in fact the educational system as a whole is devised to- value linguistic and logical-mathematical intelligence in the classroom (Larson, 2005) rather than capitalizing on students' abilities and interests (Denig, 2004).

Customary intelligence tests do not consider the gift of musicians, athletes or artists (Denig, 2004). One significant theoretical platform that counters these limitations in the field of education is the theory of

multiple intelligences (MI), which provides a structure to examine individual strengths and areas of potential achievement (Gardner, 1983). Ironically, Howard Gardner never intended this theory to be applied to education although it has emerged to have significant impact for teachers, students and in the classroom (Gardner, 2004).

Some districts, schools, and classrooms are using this theory as a foundation for program planning, although MI is in need of compelling evidence (Denig, 2004). MI theory allows students and teachers to individualize a student's way of learning (Noble, 2004). MI revolves around the child and strives to enhance the natural capabilities of the schoolchild (Denig, 2004). With MI, students have the opportunity to develop in their area of aptitude; they have the option to pursue studies based upon their profile of MI strengths (Eisner, 2004).

The purpose of this study is to explore the usefulness of MI in classrooms. Particularly, the following question steers this investigation: Do teachers find MI a theoretical framework that when applied to classroom instruction promotes student learning and success? Additionally, do teachers find MI useful for demonstrating learned knowledge? This research will

explore what a small sample of teachers at an Inland Empire area school, City MS X grades 4-8, are discovering about the application of MI in their classrooms.

Significance of the Thesis

In the educational field there is a swinging pendulum that fluctuates between direct instruction and creative innovative instruction (Noble, 2004; Diaz-Lefebvre, 2006; Douglas, Burton, Reese-Durham, 2008). In this era of No Child Left Behind there are mandates that require teachers to teach to the test, teach directly out of the textbook, or teach to the students' strengths (Eisner, 2004; Achinstein & Ogawa, 2006). According to Cuban (2004) conventional curriculum and educational tools have been influenced by MI. The essential question for this study is to investigate if MI is working in the classroom. In a district where test scores are low and schools are placed in program improvement, it is important for all educators to find an instructional method that supports students' learning. Through the use of a questionnaire, observations, teacher reflections, and artifacts this project will investigate to what extent teachers find that MI instructional approaches aid students in acquiring the knowledge to attain academic proficiency. This

qualitative study of school-wide MI implementation could lead to further large sample research that explores the use of MI and the possible change in grades and/or test scores. At this time the educational policy seems to focus on uniformed content standards, testing the theory of MI could be a way to support some of our failing students and our failing schools.

Research Questions

The use of multiple intelligences can be observed in classrooms around the country and questions still remain about its usefulness (Sternberg, 2008). If material is presented in a way students' understand will it help students stay interested? Another question to be asked: How are teachers implementing the theory in their classes? The final question to ask: Do teachers distinguish MI theory as a useful instructional method in today's classroom? Through the use of studies and research we will be able to offer evidence to inform best practice.

Limitations and Delimitations

The theory of multiple intelligences is applied to instructional practice in different classrooms and settings. In some cases, MI provides the focus of entire school programs (Kornhaber, 2004; Noble, 2004; Douglas, et

al., 2008). Through the use of multiple intelligences students are instructed on the awareness of their ability to process information and develop their strengths to enhance their learning (Shore, 2004; McMahon, Rose, & Parks, 2004). Chen (2004) states "MI theory makes sense to practitioners and fits their experience about individuals' intellectual strengths and weaknesses. That it makes sense is clear evidence of the explanatory power of MI theory" (p. 21). The theory "extends the concept of the gifted child beyond those who excel in linguistic and logical pursuits to include children who achieve in a wide range of domains" (Chen, 2004, p. 21).

Limitations. With all research, there are limitations. Some limitations may be attributed to students. Student absences may occur on crucial instructional days. Some children may feel ill and inattentive during important information sessions leading to a lack of understanding the core material or activities. Some students may not value education. Therefore they act inappropriately and become a distraction to others in the classroom.

Limitations of this study may also be associated with teacher perceptions, background and experience. Some

teachers may be biased in their presentation of material. Their particular teaching style may not be concordant with the theory of multiple intelligences therefore they are reluctant in presenting the material in an MI style. The reverse could also be true, whereas a teacher appreciates and believes in the theory of multiple intelligences and reports equivocal evidence. Some teachers may also be indifferent and see this as just another method to use in the classroom. Teachers may also find time is a limitation. Time and planning is important when creating a quality MI program.

The sampling of the study may be considered a limitation. While the sampling is purposeful because the school is focusing on MI methods, it is also considered one of convenience. The sampling will also take place with teachers that are nominated based on their reputation, which means not all teachers nominated may participate in the study. The duration of the study can be seen as a limitation. The research will last one week, which may not be enough time to properly evaluate teaching via multiple intelligences. The amount of time designated for research may not be a sufficient amount to properly evaluate a student's understanding of the subject

material. Instructional time could also be affected by the interruption of mandatory activities including fire drills, placement tests, poor behaviors, and school activities. Another limitation could be the lack of financial resources. The lack of funds may cause multiple intelligences activities and/or materials to be limited. These are some of the limitations in this study; it is important to recognize them early in the research process.

Delimitations. This study is designed to be a broad exploration of Gardner's theory of multiple intelligences. The study did not address students' assessment scores nor did it look at standardized test scores. The study does not evaluate the change in grades or test scores as a result of teaching using multiple intelligences. This study looks at how the theory is implemented in some of the classrooms and what a small sample of teachers report about the implementation. There are many questions when pondering the idea of learning styles and teaching techniques but this study will focus on one aspect, multiple intelligences in the classroom.

Assumptions

For this thesis the following assumptions apply:

- Not only will educated students reap the rewards of authentic knowledge but also the greater community will as well. (Gardner, 1999).
- Pragmatism is the educational philosophy where ideas are tested by acting on them. Problem solving and critical thinking skills are very important to Pragmatism and these skills play a big part in the MI philosophy (Ornstein and Levin, 2006)
- According to Ornstein and Levin (2006, p. 102), "Dewey applied pragmatism to education while Gardner believes Dewey laid the foundation for a change in education and allowed for other beliefs to emerge".
- Gardner's writings can also be identified with the progressive educational practices of John Dewey (Gardner, 2000).
- Progressivism is built upon the idea that children naturally develop and that children's interest is sparked through experience. It is the campaign for teachers to assist and promote student learning through hands on activities. This is the philosophy

of educating students based on their own interests and needs (Ornstein & Levin, 2006).

- Both a Progressive approach and the application of an MI based curriculum consist of activities and projects.
- Just like Progressives, adherents of the applications of multiple intelligences in education seek to "free children from conventional restraints and repression" (Ornstein & Levine, 2006, p. 114). MI teachers should be more of a facilitator than an authoritarian teacher.
- In every classroom there is a wide variation of learners and for that reason the pedagogue should present ideas and concepts using an extensive array of instructional strategies (Armstrong, 2000).
- Most importantly, students encounter material in ways that allows access to their content, and students must have the opportunity to show what they have learned, in ways that are comfortable for them yet also interpretable by the surrounding society (Gardner, 2000).

- The classroom teacher must provide a safe and inviting classroom where students are free to grow and develop their knowledge.
- Every intelligence must be valued, and the classroom must be appealing and inviting.

Definition of Terms

The following definitions apply to this thesis and are explained as such: multiple intelligences (MI) is "intimately associated" with Howard Gardner (Baum, Viens, & Slatin, 2005, p. vii). Gardner (1999, p. 33-34) defines intelligence as "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture." Gardner (1999, p. 34) continues by stating, "intelligences are not things that can be seen or counted". In the original theory there were 7 intelligences: Linguistic, Logical-Mathematical, Spatial, Bodily-Kinesthetic, Musical, Interpersonal, Intrapersonal (Gardner, 1983). Later, he then added an eighth intelligence, Naturalist, as well as introducing candidate intelligences of a ninth, Spiritual, and tenth, Existential (1999). For this project we will refer to the

first eight intelligences. The term implementing within this thesis is referred to as putting a program into effect and using the program in the classroom. The term material is understood as the key element or topic for the California content standards grade specific. In the state of California, in order to qualify as understanding the material the student must be proficient or advanced proficient on their assessments or standardized test. Lastly, the term interested will mean the students are active participants in the classroom. It is imperative to have a uniformed understanding of these terms for this thesis.

CHAPTER TWO

REVIEW OF THE LITERATURE

Multiple Intelligences Examined

Introduction

A study by Sandholtz, Ogawa, and Scribner (2004) examined a shift in education. It suggests that the educational perspective has changed to focus on curriculum standards. Many districts are pursuing the overall goal of raising achievement through the implementation of a standards-based curriculum and rigorous assessment. Sandholtz et al. state "Academic standards are intended to create more intellectually demanding content and pedagogy, thereby improving the quality of education for all students, and to establish uniform goals for schools, thus producing greater equality in students' academics achievement" (p. 1178). Their study found that protagonists for standards based approach declare it offers teachers a sound model for their teaching practices. They continue to point out that standards spell out mastery levels students are required to exemplify. With standards the focus is on pupil enlightenment, test scores, and lofty expectations.

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Others argue that education's concern is on how schools are scoring on the standardized test, what data administrators can gather from students' performances, and the call for highly qualified teachers (Douglas, Burton, & Reese-Durham, 2008). Highly qualified teachers are asked to reach into their "bag of tricks" everyday in order to capture their students' attention and interest while putting in place tactics that will generate amplified academic accomplishments (Douglas et al., 2008). In order to meet the educational requisites in terms of topic, technique, and artifacts teachers are being asked to tailor their curricular activities to recognize the students' forte (Noble, 2004). Teachers utilize different ways of engaging the interest of students while focusing on standards. The question becomes which approach is most useful.

The theory of multiple intelligences is one instructional approach used in education today. This theory has provoked countless new ideas and practices in education (Chen, 2004). The inception of unconventional intelligence theories may be a justification for the

paradigm shift in the intelligence domain (Jung & Kim, 2005). Some perspectives on intelligences are derived from cognitive competencies, including linguistic and logical-mathematic ability but tend to take no notice of other aptitudes, which are validated in society (Jung & Kim, 2005).

According to Gardner, his theory is consistent with nearly all biological scientists' beliefs concerning cerebral matter and intellect, from a natural selection standpoint (Gardner, 2004). In his 1983 book, *Frames of Mind* he laid out the eight criteria of an intelligence. He describes the criteria as "an effort to nominate a set of intelligences which seems general and genuinely useful" (p 62). Gardner continues to explain, "I do not include something merely because it exhibits one or two signs, nor do I exclude a candidate intelligence just because it fails to qualify on each and every account" (1983, p. 62).

In no significant order Gardner explains his "signs" in detail (1983, p. 62). The potential of brain damage isolation, when brain damage takes place it can destroy or isolate parts of the brain. The heart of human intelligence lies with the fact that human functions may be autonomous from each other. The next criteria is the

existence of idiot savants, prodigies, and other exceptional individuals which allows researchers to isolate and observe specific brain regions to link specific intelligences. The acknowledgement of the human ability to process specific types of incoming information is the criteria of an identifiable set of operations. Gardner states that the most important criterion for educators is the distinctive developmental history with a set of end-state performances; intelligences must have a developmental history because it is susceptible to training and modification within the teacher and student. He continued to explain that tracing intelligences back to antecedents is the criterion of an evolutionary history and plausibility. Gardner explains that experimental psychological task can examine the independence of an intelligence; "such experimental tests can provide convincing support for the claim that particular abilities are (or are not) manifestations of the same intelligences" (1983, p. 65). While experimental psychological tasks examine the independence of intelligence, psychometric findings are used to support the credibility of the intelligences through a low correlation to other intelligences. Finally Gardner explains that the

intelligence must have "culturally contrived systems of meaning which capture important forms of information" (1983, p. 66). With these criteria Gardner developed the theory of multiple intelligences.

In the original theory there were 7 intelligences (Gardner, 1983) he then added an eighth intelligence and has introduced candidate intelligences of a ninth, and tenth (Gardner, 1999). For this project we will refer to eight intelligences. The first intelligence defined is Linguistic, which is the sensitivity to the sounds, structure, meanings, and functions of words and language. Logical-mathematical intelligence is the sensitivity to, and capacity to discern, logical or numerical patterns: ability to handle long chains of reasoning. Spatial intelligence is the capacity to perceive the visual-spatial world precisely as well as conduct alterations on one's early perceptions. Next is Bodily-Kinesthetic intelligence, which is the ability to control one's body movements and to handle objects skillfully. Musical intelligence is the ability to produce and appreciate rhythm, pitch, and timbre. It is also the appreciation of the forms of musical expressiveness. Interpersonal intelligence is the capacity to discern and respond

appropriately to the moods, temperaments, motivations, and desires of other people. Intrapersonal intelligence is the access to one's own experience through life and the ability to discriminate among one's emotions. It is the knowledge of one's own strengths and weakness. Finally, there is naturalist intelligence, which is the expertise in distinguishing among patterns in nature and members of a species. These people can recognize the existence of other neighboring species and charting out the relations, formally or informally (Armstrong, 2000). Gardner hopes that his work will help gain a "better understanding of how to nurture young people capable of work that is equally distinguished in terms of its excellence and its ethical dimensions" (2004, p. 219).

Psychology and Education

According to Sternberg (2008) "The U.S. Department of Education has been seeking to apply psychological science to educational practice"(p. 162). Sternberg (2008) states that psychological theories should be applied to education because it enables one to have a scientific basis for how people think, feel and/or motivate themselves.

Furthermore, he suggests that educational interventions and assessments are clarified by a compelling system of

ideas. Education must continue to play a role in the communication with psychological science and also implement converted ideologies into future practices (Sternberg, 2008).

MI is rooted in psychological research but Gardner (2004) misconstrued the consideration it would acquire by other professional groups. With the book *Frames of Mind* (1983), which contained just a brief account of educational implications, the chief audience turned out to be educators. The book had an impact in classrooms and educators continued to research and discuss the theory. Gardner still asserts that at no time did he seek the infliction of MI conceptions on educational institutions. Gardner did wish for the versatility in which educators who desired the MI venture could attempt it (Gardner, 2004). In previous works Gardner stated that a sound educational system would be based on *individual-centered schooling*, which would help develop an individual's potentials after formal schooling is finished (Gardner, 1993). Gardner continues his work to help educators and researchers more suitably interpret how to tend to their pupils, students who are talented enough to produce

exceptionally, distinctive, high-minded creations (Gardner, 2004).

Multiple Intelligences and the Classroom

Research studies have investigated why MI is used and/or adopted in an educational setting. MI has changed the manner in which teachers conduct instruction and has altered some core ideologies concerning education (Jung & Kim, 2005). Multiple intelligences provide a theoretical basis from which to differentiate instruction and to make materials available to all students.

According to McCoog (2007) using MI to discriminate instruction is one of the most useful ways to conduct instruction. MI explains each intelligence and MI modifications can be made to fit the curriculum. Instructional techniques are reinforced by the intelligences. To differentiate instruction the teacher must be openminded, must be experienced in the developmental levels of the students and acknowledge those levels. The educator must also have a repertoire of pedagogical skills that allow her/him to understand the needs of the student.


However, some educators and researchers are concerned that differentiated MI activities are just a collection of

fun activities. Noble's study (2004) expresses the concern that academic diligence should not be sacrificed in place of interesting differentiated projects. When interviewed for Noble's study, a principal stated that many of the activities she witnessed in the classroom were "novel and fun but not intellectually rigorous" (p. 208). Noble supported the principal with a quote from "McInerney and McInerney (1998, p. 175) who stated, 'it is important that the use of highly motivating techniques should not be at the expense of the substance of learning'" (2004, p. 208). Rigorous activities made by a competent instructor can expose new paths to an identical concept; this teacher "can shine light from different perspectives and motivate students" (Beliavsky, 2006, p. 7). Chen (2004) suggests that teachers who allow students to study a particular topic by using different media and encourages the students to express their understanding of the topic through diverse representation increases the students motivation and engagement in the learning process.

MI can assist teachers distinguish their students educational predispositions and academic strengths (Noble, 2004). A study by Kornhover (2004) found that teachers felt the practical knowledge gained in their classrooms

was authenticated by MI theory. Teachers noticed a Harvard psychologist's theory aligned with their daily idea that students learn in a variety of ways. The study also found that the theory partnered with many educators' ethic; children acquire knowledge by doing, every student has a skill, and we should strive to enlighten the complete child. Teachers also found that they already incorporated MI practices, including: project-based courses of study, subject matter elements, and active participation that fits with the theory. Finally, Kornhover's study found that teachers who used MI compatible approaches were able to organize and extend their classroom practices. Teachers work hard to create a special learning environment, and with MI many teachers feel there is a name for the work they have been doing.

Some educators see MI as a method that allows all children to engage in learning, on a variety of levels (Shepard, 2004). Douglas, Burton, and Durham (2008) found MI requires inquiry to the methods students are most efficient for success and demonstrates the instructional techniques that will emphasize the students' achievements. Students are educated on the process of analyzing and applying individual specialties and deficiencies. They



are motivated to diversify the intelligences used to exhibit their understandings (McMahon, Rose, & Parks, 2004). The students are allowed to work on projects that most interest them and these projects will usually fall in line with their MI depiction (McCoog, 2007). MI could help children, especially special needs students, bring to light unknown qualities instead of their incapacities (Rettig, 2005). "An emphasis on multiple intelligences may help ensure that children learn and retain information longer than other approaches" (Rettig, 2005, p. 256). Teachers can use MI to help students experience encouragement and when they feel supported by attentive adults, they may manage oppositions sensibly (Larson, 2005).

MI can help educators view students through a positive lens and change their perspective of the student. There seems to be an increasing amount of professionals who are certain that many students classified as ADD or with learning difficulties are plainly not being instructed using techniques in which they have the ability to thrive (Larson, 2005). Research has uncovered students in peril engage fittingly in activities that require hands-on interaction and interventions rooted in body-

kinesthetic or naturalist intelligences (Shepard, 2004). Innovative evaluations for mastery have taken issue with the techniques of traditional paper/pencil exam; also called into question is the instructional practice of subject mater delivered by lecture, which sets prominence on linguistic and logical/mathematical intelligences (Diaz-Lefebvre, 2006).

Teachers and students of all levels must figure out in "what ways are students smart, rather than, are they smart"(Douglas, Burton, and Reese-Durham, 2008, p. 184). No child comes to school without some type of ability, but it is up to the teacher and the selection of appropriate teaching strategies put into place to bring out the students' intelligence.

A study conducted by J.-Q. Chen (1993, p. 1) examines Project Spectrum's use of MI and explains it as "an approach to assessment and curriculum that identifies a child's areas of strength and construct[s] the educational and learning experiences around the child's competences". More institutions would embrace MI strategies for assessments and instruction if it were proven to provide growth in educational attainment (McMahon, Rose, & Parks, 2004).

Support for Multiple Intelligences

Although MI lacks a strong research base (Denig, 2004) some supportive research was found concerning MI in the educational system. Research found some schools attribute academic advancement to the application of MI theory to their course of study (McManon, et al., 2004; Shore, 2004). Maryland School Performance Assessment scores rose by 20% after one year of applying MI strategies across the curriculum (McManon, et al., 2004). Shore (2004) found MI based-instruction helped narrow or put an end to the imbalance between White and minority K-12 student achievement. Shore's (2004) research also found students in elementary and secondary MI classrooms accomplished more in basic skills than their district, county, and national peers. In a study by Kornhaber (2004) virtually 80% of the schools participating in the research gave details of advances in standardized test scores with half of the institutions crediting MI with the favorable outcome.

In the field of linguistics it was found that MI theory produces a plan for comprehending mental capacity, in which it is more "sensible and practical" (Akbari & Hosseini, 2008, p. 154). Akbari and Hosseini's study

(2008) also found that there is a correlation among the use of acquired language strategies and the establishment of MI. A relationship was discovered between MI and second language competency. The area of academics was not the only improvement attributed to MI.

Student behavior is a significant classroom issue. Some studies have found that MI strategies can benefit behavior as well. Rettig's (2005) study searched for rationale in the use of MI in early childhood classrooms. In a Pre K-First grade classroom 20 children displayed a 77% advancement in conduct which included not speaking out of turn, not hitting or kicking, noncompliance, and not being engaged (Rettig, 2005). In Kornhaber's study (2004) 80% of classrooms describe behavior refinements. The research also found that moderately more than half attributed the boost to MI.

Jung and Kim's (2005) study in the Korean education system found that when students were working in a specialty field they were described as, "'easy to engage', 'confident', and 'focused'" (p. 585). Their research states, "identifying and developing children's strengths is one of the most effective and desirable ways to get children to have positive working styles" (Jung & Kim,

2005). An MI classroom would be a sound innovative atmosphere where the teacher integrates subject matter, diversion, and activity (Larson, 2005). Not only would MI activities help with behavior but also with an MI assessment system students would be ranked in terms of their MI area instead of only linguistic and logical-mathematical abilities. With this assessment system students are able to evade the occurrence of the defeatist depiction and are able to become contributing classroom members (Jung & Kim, 2005). Student engagement through the use of MI is one of the keys to cutting down undesirable classroom behaviors.

Noble's study (2004) also found support for MI. The investigation found 75% of teachers attributed their curricular alteration to MI. The teachers used MI to distinguish students' skills or technique for understanding. Students not typically known for their academic abilities began to make strides in the classroom. They also reported tranquil students began to express their proficiencies in new intelligences areas. English Language Learners were now prepared to display their comprehension using a variety of techniques. The study found that 55% of the teachers felt MI made students'

mindful of how they most suitably take in information. One teacher felt the students' freedom to choose different MI activities allowed the students to gain a deeper understanding and greater motivation for learning. Thirty-six percent of teachers said MI made students' aware of their classmates' academic abilities and readiness to collaborate in class. Noble also found with the help of MI theory 91% of the teachers have expanded personal opinions of how students can thrive in an educational setting. Shore (2004) discovered interviewed teachers were self-assured that the use of MI in lieu of direct instruction or standardized assessments stimulated and inspired their students. MI has helped change the way teachers teach and the way teachers perceive student learning.

There are some other positive reports of MI in the classroom. Kornhaber's study (2004) found that 80% of classrooms experienced parental contributions rise. A correlation between the school's embrace of MI and the expanded involvement was made by 60% of teachers. The study also discovered that "80% reported a range of improvements for students with learning disabilities (e.g., improved learning, improved motivation, effort or

social adjustment), with all but one of the schools associating this improvement with MI" (p. 72). In another study by Diaz-Lefebvre (2006) survey's were sent to present students and students who completed the MI and Learning for Understanding (LfU) courses within the past 3 years. Through these survey's researchers recognized student ambition was heightened, educational data was retained for an extended period, and students formed a positive gratification of schooling in contrast to routine practice. "The results suggest support for the curriculum changes and paradigm shift explored in the MI/LfU program" (Diaz-Lefebvre, 2006, p. 136). There are substantial prospects for MI theory and their instructional methods, prospects that would supplement our educational establishment (McMahon, et al., 2004).

Opponents' of Multiple Intelligences

Although MI has found support in education it is not in line with curriculum polices in the United States educational system. MI theory is seen by many as a "distraction that complicates efforts to get to the heart of the matter, namely, to find and measure the essential intellectual core that every individual possesses" (Eisner, 2004, p. 32). Allowing students to advance based

upon an individual's intelligences is not the view that currently drives our schools (Eisner, 2004). MI could be used as a teaching strategy but many districts have turned to scripts and one-size-fits-all curriculums. According to Eisner scripted teaching "symptomizes a loss of faith in the professional competence of teachers"(p. 34). He feels schools are being held accountable by test scores and allowing students to shine based upon an individual's intelligence is not the kind of aim that at this moment drives our schools (Eisner, 2004).

The alternative campaign, which is taking place in education, includes fidelity or strictness to the text (Achinstein, Ogawa, 2006). Fidelity to the text includes using only the scripted materials, activities provided by the publisher, and testing materials included in the textbook adoption. Eisner (2004) points out the procedure many teachers are performing while teaching reading; scripts tell the teacher what questions to ask and how to raise the questions for the students to answer. The script also provides answers the students should come up with to the scripted question. The push for scripted curriculum comes from the concern about student achievement. From this concern comes homogeneity of

content, assessment, and end results (Eisner, 2004).

Eisner posits, "All too often the teacher becomes a handmaiden to the tests whose scores provide the basis on which teachers, schools, and students will be judged" and the policies that are driving education leave "little space to pursue the vision that MI adumbrates" (p. 34).

Eisner (p. 36) continues by stating, "a conception of MI employed as a guide to curriculum policy would undermine any approach built on the idea that a single type of program was suitable for everyone." He believes that "one size does not fit all if one embraces the notion of MI as a basis for making curriculum policy" (p. 36).

There are criticisms of the MI theory in the psychological research field also. Gardner (2004) admits, "MI theory has few enthusiasts among psychometricians or others of a traditional psychological background" (p. 214). Gardner continues by pointing out that "these individuals are attracted to 'g' or general intelligence, because they seek psychometric or experimental evidence that allows one to prove the existence of the several intelligences" (p. 214). Sternberg's (2008) study found that despite the lack of provable diligent data MI theory has been broadly implemented. In a critical review by

Waterhouse (2006b) it states that MI theory should be "soundly supported by empirical evidence" (p. 207) and in spite of that fact MI has gained extensive exposure in education. The article continues to point out that there is a lack of substantiating evidence for MI theory.

Waterhouse (2006b, p. 208) cited an article by Allix (2000) that found "no empirical validating studies" for MI and found that Gardner and Connell (2000, p. 292) "'conceded there was little hard evidence for MI theory'".

Waterhouse (2006b) continues to dispute the use of MI in the classroom. Waterhouse argues Chen's (2004) statement; "'MI theory can also be validated by evaluating the results of applying the theory in a range of educational settings'", and asserts this cannot be the justification for the intelligences (Waterhouse, 2006b). The application of MI theory "assumes the validity of the intelligences" (Waterhouse, 2006b, p 209). The encouraging by-product of doing something new in the classroom could be caused by the combination of a zealous teacher and electrified students who attempt a creative engagement method. The enhanced student comprehension may be attributed to fortitude and cannot be linked to the actual theory; the method was beneficial independent of

the MI practice (Waterhouse, 2006b). Opponents' state MI theory, despite its appeal, should not be applied due to the lack of adequate evidence (Waterhouse, 2006b).

Waterhouse (2006b, p. 220) cites Jorgenson's 2003 research that contends the support for MI by professionals in the field of education could be considered "'educational malpractice' (p. 368)".

Many others have denounced Gardner's theory for a variety of reasons. One criticism is that the theory is too general for an entire curricular arrangement to be based upon it. An additional fault is that verification of the theory is inadequately reinforced. The stationary approach to symbolize students' potential is another concern. Although there is disapproval, the theory has developed intrigue for its distinct instructional methods, differentiated activities and aligning teaching practices with student learning methods (McMahon, et al., 2004).

Eisner (2004, p. 32) states:

If one of the important aims of education is the cultivation of the student's unique capacities, then acknowledging differences in the ways in which children and adolescents are smart would, one might think, be of extraordinary importance. This

recognition has implications for curriculum. No longer would a one size fits all curriculum be regarded as an option.

MI theory in education has become somewhat of a buzzword. Waterhouse (2006b) found an increase of MI material in a variety of forms. MI educational web sites were accessed at an increasing rate, from June 1, 2003 and December 1, 2005 the numbers jumped from 25,200 to 258,000. MI articles expanded from 12 written to 17 during the same time frame. MI instructional conference numbers swelled from 10,600 to 48,300.

Gardner (2004) warns about the quality of some MI programs, seminars, and curriculums developed by a variety of organizations and independents. Gardner speculates that the MI programs were created not out of scrutiny for his work but merely based on the "buzzword *multiple intelligences*" (p. 216). Teachers must be informed in MI theory and look for useful creditable readings. There are some curriculum books that Gardner has consulted on or written the preface in support of the book; for example *Multiple Intelligences in the Classroom* by Thomas Armstrong and *Multiple Intelligences in the Elementary Classroom* by Susan Baum, Julie Viens, and Barbara Slatin.

Gardner also wrote *The Disciplined Mind- Beyond Facts and Standardized Tests, The K-12 Education That Every Child Deserves*. MI theory opens up a number of arguable points, however MI is not just a belief but a magnanimous envisioning of the diversification in human potential (Eisner, 2004). Gardner (2000) states, "education will never be completely a science, but it borders on malpractice to design education that is backward looking and that ignores what we now understand about how the mind constructs and reconstruct knowledge" (p. 260).

CHAPTER THREE

DESIGN AND METHODOLOGY

The Exploration of Multiple Intelligences and the Classroom

Introduction

This qualitative study seeks to examine what teachers are experiencing in their classrooms when using MI instructional methods. The school site was chosen for the study because the school philosophy revolves around the theory of MI. This research will gather responses to the question proposed to teachers: Is MI a useful instructional method in the classroom? The replies to the questions will also be used to survey how teachers are implementing MI. Teachers will also be asked to observe and record the change in their students' interest levels during an MI lesson. Through this study the author strives to communicate to teachers an alternative practice to direct instruction while valuing an individual's talents.

Subjects

Purposeful sampling is essential for this study. The study examines MI instructional methods at City MS X.

This middle school is located in the Inland Empire. Site selection was based upon the school philosophy that embraces Multiple Intelligences. The school philosophy (2007) is as follows:

Our vision is to come together with a unified purpose and a passion for nurturing partnerships. Success will be built upon a commitment to teaching through multiple intelligences and growing within learning communities. As a result, we will cultivate a fully integrated school dedicated to high expectations, appreciation of diversity, positive relationships, and a desire for learning.

Additionally, City MS X was chosen for its innovative ideas of school practice for a school in a low socioeconomic area. The study will examine the viewpoints and actions of teachers and students pertaining to MI.

City MS X opened as a new school for the 2008-09 school year. The site houses grades 4 through 8 and is considered a preparatory middle school although grades 7 and 8 are the only grades to have preparatory students. Grades 4 through 6 are comprised of children from the surrounding neighborhood; this site is considered their home school. In order to attend this school the

preparatory students must fill out an application. The applicants then go through a screening process where they must be proficient in English language arts and mathematics on their last Content Standards Test (CST) scores, not have more than 15 absences in the last school year, and not have more than one suspension during the previous school year. The lottery is held in March of every year and accepted students will begin the following school year, in August.

The school is made up of a diverse population. The ethnic make up of the school includes 64 percent Hispanic or Latino, 21 percent Black or African American, 10 percent White (Not Hispanic), 2 percent listed themselves as Other Indian, and the other 3 percent are made up of American Indian, Chinese, Vietnamese, Asian Indian, Samoan, Filipino, or other Pacific Islander. The socio-economic status of the entire school includes 88% of the population receiving free or reduced lunch. City MS X has a School Site Council and Parental Advisory Council to build parental involvement within the school and community.

City MS X has an untraditional instructional pattern. The school day starts at 7:40 am and concludes

at 2:11 pm. Throughout the day the students in grades 4 through 6 transition through 3 block periods. Instructors in grades 4 through 6 must abide by the mandatory 180-210 minutes of English Language arts and 45-60 minutes of mathematics everyday. These grades also have Universal Access time where, if they are below proficient they will go to a reading support or math support class. If the student is at least proficient in the core subjects they have an elective class during the UA time. Their elective choice can be AVID, TECH Arts, or Music class. The class size in elementary can reach a maximum of 20 students.

Grades 7 and 8 follow a seven period day where the students have English, Mathematics, Science, History, Physical Education, and two elective periods. The middle school electives include; AVID, TECH arts, music, teacher/office assistant, or student mentor. The class size can range from a minimum of 23 students to a maximum of 38 students in the core subjects. The preparatory students are held to a behavior and work contract they must follow; if it is not followed, the students could be transferred to their home school at any time.

The curriculum is different for grades 4-6 versus the Preparatory curriculum. For Language Arts students in

grades 4-6 works with the Houghton Mifflin curriculum. This curriculum consists of biweekly themed assessments, reading comprehension, spelling, and reading fluency. In Mathematics these students work with Holt Mathematics textbooks and support material. The students are assessed biweekly using common assessments, which are teacher produced. The mathematics assessments resemble the vocabulary and syntax of the CST release questions.

The preparatory students work with the curriculum and support materials provided by Prentice Hall in Language Arts. They are assessed on a biweekly schedule using teacher-developed assessments. Again, these assessments resemble the CST release questions in the sense that the questions are phrased similarly and vocabulary is emphasized on the assessment. In mathematics the students use the Holt Algebra I curriculum. The textbook is California designed to prepare for the CST. The students use the support material on a regular basis and are assessed on a biweekly schedule. Their assessments are also teacher-developed assessments and are made to resemble the CST. The whole school is data driven and the curriculum is manipulated to enhance the students learning.

To ensure comprehensive sampling of the subjects the reputational case sample strategy will be used. Teachers will be asked to volunteer for the study based on their principal's nomination of the teacher. The researcher will ask for four teachers. The participating teachers and their classroom will be examined and documented. The teachers in the study are currently teaching mathematics, science, history, and/or English in a grade 4 through 8 classroom. These teachers have been teaching for a minimum of 6 years and a maximum of 15 years. All teachers in the study have completed at least 30 hours of MI training and have volunteered to participate in this study.

Procedure

One objective of the study is to examine all participating classrooms and investigate what teachers are experiencing while using MI methods. In order to collect data and begin the research there must be a protocol observed at all times. The subjects are considered legally competent, and the research procedures should not produce any psychological stress. Initially, in May of 2009, the researcher met individually with the participating staff members. During this conversation the teachers were told about the researcher who is a graduate

student at California State University San Bernardino conducting research for a Master's thesis. They were also informed about the purpose of the study and what the study entailed. A major concern for the subjects included confidentiality. To ensure confidentiality the teachers did not include a name on any forms, except for the informed consent, nor was it announced that they were a part of the study. Additionally, they were informed that all information and data collected would be kept confidential and that any observations, questionnaires, and/or data could not be used in a formal evaluation process. The participants were informed that there are no rewards for participating in the study. However there was a benefit for the research; this study could help to build a stronger MI program at their school site.

Normal research protocol was obeyed during this study. City MS X teachers were given an informed consent letter. The letter described and identified in detail the information and data that was being acquired from the teachers. The educators read the letter and acknowledge that they have been informed of, and understand, the nature and purpose of the study. A signature was provided

to show they freely consent to participate and acknowledged that they were at least 18 years of age.

Instrumentation/ Data Collection

The information will be gathered using more than one method of data collection, methodological triangulation. Triangulation will be used in an attempt to strengthen the credibility and validity of the results. The methods of data collection include the gathering of artifacts, questionnaires, and teacher reflections, all will be described in detail in chapter four. To help with accuracy during data collection member checking will take place and negative or discrepant data will actively be searched for and recorded. Participant language will be verbatim and low-inference descriptors will be used. Photographs will be used to record artifact data. Multiple measures will be used to provide a sound study.

The instrumentation for this study will include multimethod strategies. Field observations will be recorded in field notes and focus on who, what, where, how, and why. Context will be recognized and the notes will be dated. These notes will not be ambiguous nor opinionated rather a comprehensive illustration of the field. Immediately after leaving the site, reflex notes

will be taken. The integration of fundamental interactions and recognized settings will be recorded in the reflex notes. These notes are intended to administer an avenue into the caliber of the data.

Participants in the study will be asked to answer a questionnaire. The questionnaire consists of seven questions:

1. How many years of classroom teaching experience do you possess?
2. Which grade level do you teach at this time?
3. On a scale of 1 to 10, 10 being very confident, what is your confidence level with implementing MI methods in your classroom? Please explain your level.
4. Please provide examples of how you present material and/or curriculum using MI methods.
5. What MI methods do your students use to demonstrate their learned knowledge?
6. How would you describe your students' attentiveness and interest level while using MI in your lesson?

7. Please provide any other examples of how you are most effectively implementing MI in your classroom.

The questionnaire will be used to provide teachers with a personal voice concerning their thoughts on MI and the classroom.

Artifacts to be collected will help describe people's experiences, knowledge, actions, and values pertaining to MI in the classroom. Objects of student work will also be collected as artifacts. The artifacts will be located and obtained for identification. During identification the artifact will be photocopied or photographed so it can be categorized and described. These strategies will allow the artifacts to be recovered and registered for access. After being recorded they will be analyzed and interpreted using diversified techniques throughout the process. Also, the history and data will be taken on the prevalence of the object and if it is quintessential to the site.

Analysis questions will be asked for each artifact. This will provide definitive data about the preparation or acquirement of the artifact. Analysis questions include: who uses it, how is it used, where is it used and what is the purpose of its use? A critique of the artifact will

take place with a rubric. The rubric will ask three questions: what are the performance task, what MI instruction was used to present the standard, and what MI method did the student use to demonstrate learned knowledge? The artifact will then be given a rating from 1 to 4. The ratings are as follows:

- 4- the student's demonstration of knowledge is creative, outstanding and communicates the students understanding of the standard. The information is complete and accurate. All work is very neat, clear, and presentable.
- 3- the student demonstrates a clear theme and understanding of the standard. The information provided is complete. The work is neat and presentable.
- 2- the student's artifact is difficult to understand and therefore does not demonstrate the student's mastery of the standard. The information is incomplete. The work is not neat and presentable.
- 1- the work is very poorly done or has not been completed.

Using the rubric to critique the artifacts will dispose the validity and efficiency in order to analyze the significance of the artifact in the social setting.

The final instrument will be the teachers' documentation of the lesson. The teachers will be instructed to document, in 1st person, a reflection of the lesson. This will be written in a blank space on the side of their lesson plans. These quick reflective notes will describe; how the teacher felt their lesson flowed, how they observed their students during the lesson, and the MI techniques used; these will be called an MI lesson reflection. These reflections will correspond and provide insight to the research questions.

Data collection will be a thoroughgoing process. The investigator will collect all data pertaining to the study after all consent letters have been signed. The compilation will be gathered for a period of one week, Monday through Friday, 7:20am until 4:00pm. Questionnaires will be done prior to the observations of the classrooms. Artifacts will then be searched for during the observation and at a later time they will be taken in. The teacher reflections will be gathered anytime during the collection week following any MI lesson. During the collection

period each of the participating teachers and their classrooms will contribute information.

Data Treatment Procedures

As stated previously the methods of data collection include the gathering of artifacts, questionnaires, and teacher reflections. The treatment of the data involved categorizing the information so that the organization addresses common themes and concentrates on the research questions. In order to preserve confidentiality teachers placed their completed questionnaires and teacher reflections in a box. Observations were recorded through the use of field notes and reflex notes were recorded after leaving the room. Artifacts were identified and a picture was taken for later reflection and critiquing. The data collection was focused and concentrated on the research questions.

There were some strong points for applying the appointed data treatment procedures, as well as disadvantages. The ability to provide confidentiality allowed for the teachers to be open and candid with the questionnaire. The procedure of categorizing and organizing the information allowed for the collection to be focused on the questions. This also allowed the field

notes and reflex notes to concentrate on the research questions. Taking pictures of the artifacts allowed for a longer analysis period. The fact that the research questions were the nucleus of the data collection could be seen as a disadvantage. This could be a disadvantage because no other information was recorded nor was it looked for.

The data collection process was individualized for each component yet focused on the key topics. The questionnaires were read and each question along with its response was analyzed. During the analysis common themes were identified and recorded, as well as outlying responses. The questionnaires provided some insight as to what these teachers think of MI methods. The questionnaires also provided revelations as to what might be observed at a later time and the artifacts to be collected.

The observations and artifact collection focus was determined prior to the collection. The collection was focused on who, what, where, how, and why. This allowed for minimal time wasting and meaningful observations. Some focus questions included: who is leading the lesson, what is going on in the class, where is the teacher, how

are the students behaving and why are they doing this activity? At no time did subjectivity come into question, the observations focused on fact.

Immediately after exiting the observation reflex notes were taken. Reflex notes are used to record the fundamental interactions taking place. Some interactions to look for include: was the room quiet or did the students have a choice to discuss ideas with neighbors, did the teacher act as a facilitator or lector, was there open dialogue taking place, during group work did students get to express their strengths. Additionally, the reflex notes were used to recognize the classroom settings. There were some predetermined areas to look for and record. These areas included the display of MI descriptions hanging on the wall for students to reference, the arrangement of classroom seating, and the location of the teacher during the observation, also the variety of the artifacts displayed. All notes are dated and illustrate the environment in which the data is being collected.

The collection of artifacts was done during the observation period. A camera was used to record the artifact as to allow for an extended period of analysis

and interpretation. The artifact is identified with the project name and why it was completed; which unit, activity or theme did it satisfy. It was then categorized by the MI method used and described. The artifact was later analyzed and interpreted using the rubric, which was explained earlier. The MI method prevalence for each artifact was also noted as well as the quintessentialness of the artifact.

Teacher reflections were used to provide more personal information about the MI methods used in a lesson. These reflections had teachers examine the MI techniques used in the lesson, the flow of the lesson, and how they perceived student engagement. Teachers recorded this information on the side of their paper lesson. The reflection was then placed in a box for the researcher to pick up and analyze. All of the data collected will be used to cross-examine ideas, thoughts, and responses.

CHAPTER FOUR

FINDINGS

The Presence of Multiple Intelligences

Introduction

The findings for this research will be presented in three sections. These sections will maintain the concentration on the research questions. The first section will discuss the confidence levels of the subjects. The second section will present how MI is implemented in the classrooms including observations and artifacts. The final section will examine the interest levels of the students. Each section will also attempt to interpret the findings for each section.

Confidence Levels

The confidence level of the subjects is important to address at the beginning of the findings. The confidence level must be explored in order to avoid bias reporting of the results. The level of confidence could reflect on the subjects' assertiveness or reluctance in applying MI methods. The confidence level was based on a 1 to 10 scale, 10 being extremely confident. The levels ranged from 8 to 6. The rating allowed for some teachers to

acknowledge and reflect on their own personal intelligences and how their intelligence is presented in their teachings.

In addition to providing their confidence level the teachers provided statements to support their ratings. While analyzing the statements two common themes were identified, MI implementation and variety. The first identified theme is the idea that MI implementation should be weaved throughout a lesson and the curriculum. The second common theme included variety. Teachers stated that MI allowed them to provide the students with a variety of activities and/or projects. These activities allowed the students to display their knowledge in a meaningful and creative way. There was one outlying comment made by a teacher. This teacher found that visual, interpersonal, bodily-kinesthetic activities come easier than others. This teacher stated that it is still unclear how to make intelligences like musical and naturalist fit into the curriculum. The teacher continued to express concerns of uncertainty:

When a student decides he's 'music smart' because he likes to listen to the radio, how does that fit into standards? Should we listen

to music? A lot of MI is time consuming (building) and sometimes I'm not sure if the result is worth it? Sure, it's hard to find a balance.

Interpretations can be made based upon these findings. The rating system construes that the subjects were in one way or another familiar with MI. It also illuminated the fact that most of the subjects were confident with implementing MI methods in their classroom. One subject was still unclear and wrote of misunderstandings about some MI concepts even after the trainings and readings. This confidence level rating provided a baseline for what might be found in the classroom.

Implementation Observations

Data concerning the implementation of MI in the classrooms was collected through observations and with artifacts. The observations examined 4 specific areas in the classroom. The first area for examination is the seating arrangement. Student interaction will be the focus of another section. Along with student interaction the occurrence of teacher interaction will be studied. Finally, classroom displays will be reviewed.

Seating Arrangement. When conducting observations it is important to take note of the seating arrangement. According to MI theory students learn in a variety of settings so it is important for a teacher to consider this concept when planning out the classroom. In the observed rooms the students were seated in some type of group situation. The classrooms had their tables arranged so 2 to 4 students could collaborate. In some rooms there were single desk away from the groups allowing students to work independently. One teacher noted that the students were free to move around the classroom and work within a group or individually, depending on their needs for that day. This teacher also provides a desk outside the door for those students who work better in the "sunlight and fresh air". The teacher also commented, "sometimes students need a change and my classroom provides them this freedom; they're still working and they are happy".

Student Interaction. It is important to take note of what is happening in a classroom; are the students merely talking or are they discussing a specific topic? Student interaction is part of the observation practice; what are the students doing and what are the behaviors taking

place? When doing observations, 2 of the classrooms were silent, no abnormal behaviors and no student interaction were observed. This was happening because the classes were taking an assessment. One teacher did concede that students sit in groups because they usually work together on projects. In the other 2 observed classrooms, students were seen discussing their subjects at hand. Students were asking each other questions and debating the answers. Other students were observed asking for help in their group. Some students were sitting at individual desks working alone and on task. The teachers acknowledged that usually the same students sit in those seats. One teacher recognized, "My intrapersonal students produce quality work just as my interpersonal students do. It's their choice to work with who they want everyday".

Teacher Interaction. According to Progressives, teachers should be a facilitator in the classroom (Ornstein & Levine, 2006). They should encourage their students to think and explore rather than lecture or hinder the education of their students. The subjects admit their usual lesson plan follows this arrangement: direct instruction, guided practice, followed by individual practice, and a culminating project done in a

group or individually. At the time of the observations all 4 of the teachers were seen walking around the room interacting with students. The teachers maneuvered around the desk clarifying directions, asking open ended and higher leveled questions. They also provided details of what was expected for the project all while, the teachers noted, making sure the students were on task. No matter what the project, the teachers express that the students may work together, and the teacher is in the classroom as a guide.

Classroom Displays. A classroom usually has some type of displays on the walls. Many times the walls are covered with rules, creative quotes, charts, displays, and student work. The observations of the 4 classrooms found each room had subject matter posters, rules, consequences, expectations, standards, and objectives on display. Since this study is focused on MI in the classroom it was noticed that 3 out of the 4 classrooms had some type of multiple intelligence display. This display contained each intelligence by name, a picture describing the intelligence, and activities used to display the intelligence.

The use of charts and graphic organizers can be helpful for some students. In all 4 classrooms there was evidence of some type of chart or graphic organizer usage. The charts on display used color-coding to separate words, dates, or important facts. One specific chart had color-coding for prefixes and suffixes. Another chart contained vocabulary words, the definition of the word and a picture to demonstrate the use of the vocabulary word. Flow charts were also observed being used to separate dates and events in history.

These observations also focused on the display of student work. All 4 rooms displayed student work on the wall or on the counters of the classroom. The displayed work contained the students' name, date, and title. The display board included the project title, unit or lesson title, and the content standard the project would reflect. The displays were bright and clear to read. The work on display contained a variety of products produced by the students.

The interpretation made after investigating the classroom setting and analyzing the findings is that the participants have a grasp of how to provide a positive learning environment. Students seem to know the classroom

expectations, rules, and consequences because they are posted in clear view and it was observed that the students follow these expectations. The students are free to conduct themselves in a responsible productive manner with the freedom to engage in conversations with other students if they chose to do so. Students are also able to discern their group participation on a day-by-day basis. All participants are actively supervising their students while engaging them in higher-level thinking and guidance.

The observation of student work displays conveys the message that student work is important and valued. At least 3 out of the 4 teachers contained an MI display, it is not clear why the one teacher did not have the display although the student work displayed the teaching of MI and allowed the students to display knowledge through the use of MI methods. A positive, interest and strengths based learning environment is a key point for MI implementation.

Artifacts

As previously stated the artifact collection focused on 3 different areas. The areas included the identification of the unit or standard the activity meets. The research will also examine the MI method used to demonstrate knowledge. Finally, the rating of the

artifact according to the rubric will be interpreted. Each classroom contained at least one project for producing artifacts.

Classroom One Artifacts. In one classroom students were required to narrate their life story thus far. This activity was initiated to meet an English Language Arts standard. The students were free to choose how to display their knowledge. The work on display exhibited the variety in which the students excel. Some students wrote a paper describing their story. Others choose to create and illustrate a book containing their memoirs. In addition to books and papers some students chose to create a poster, which described their life events. The activity could be considered a presentation of intrapersonal intelligence for some students. There are three artifacts chosen from this activity.

Artifact One. One of the artifacts displays linguistic intelligence by written paper. This artifact earned a rubric rating of 4. This student used vibrant vocabulary to communicate the students understanding of the standard. The student also used a timeline to describe her life from beginning to present time. This allows the reader to gain a complete and accurate sense of

the student's life. The paper was typed and spelling was checked throughout the project. This made the paper easy to read, the flow did not jump from topic to topic, the paper was written in paragraph form, and it was presentable.

Artifact Two. The second artifact displays spatial/visual intelligence by creating a poster. The poster received a rating of 2 based on the fact that the student does not demonstrate a clear understanding of the standard or activity. The student was to present their life story and instead the student presented the favorites of life; favorite color, favorite sport, favorite animal, favorite television show. The information was not complete nor did it follow the standard. This poster is also considered to be messy and unorganized.

Artifact Three. The third combines both linguistic and spatial intelligence by making and illustrating a book. Each page of the book told the students' story including birth, parents, family, and school. The student included detailed language for each page and created an illustration to go along with the written language. This artifact was given a 3 because the student demonstrated knowledge of the standard and provided complete

information for the project however there were a few misspelled words. The work is otherwise neat and presentable.

Classroom Two Artifacts. In another classroom students were again free to display their knowledge in a way that best fit their intelligence. The unit focused on European history. The students had to produce a product that represented that time period. On display were homemade stained glass, armored shields that were decorated with their chosen insignia, canvas paintings, models of castles or villages, and written papers. There will be two artifacts analyzed for this study.

Artifact One. The first artifact is a model of a medieval time period village. This village was a creative demonstration of the history unit for the class. This product was a depiction of the spatial and bodily-kinesthetic intelligences. This village earned a rubric score of 4 for its clarity, descriptive, and detailed work to show the students' understanding of the standard. This project demonstrated the student was engaged in the standard and cared about the quality of the work.

Artifact Two. A few students decide to write a paper to demonstrate their knowledge about European History.

Artifact two is a written paper, which is an example of linguistic intelligence. This paper is an excellent example of complete unit knowledge that is accurate, clear, and presentable. The student made many clear and precise points through the paper and was able to summarize the Magna Carta. This paper earned a rating of 4 for its complete demonstration of engagement and understanding of the event.

Classroom Three Artifacts. In the third classroom students were engaged in a unit covering the United States. The students were to know the states and their capitals. Two artifacts will be analyzed from this class. The students were allowed to pick their way of demonstrating their knowledge about the state within certain guidelines set by the teacher. The students were allowed to create a mnemonic device to help remember the state and its capitol or they could create a "Bag Your State". The mnemonic device was to include a sentence and illustration that would help the student remember the information for the state. "Bag Your State" was a creative creation for students to include anything they learned about the state.

Artifact One. The first artifact is the "Bag Your State" creation. This artifact appealed to the spatial, kinesthetic, and linguistic intelligence. The student decorated the outside of the bag with the state name and the capitol city with bright markers and creative font. The student included the pictures of main attractions, professional sports teams, names of colleges, and the type land the state sits on. The students were also allowed to drop anything extra into the bag, for example, articles, newspaper clippings, magazines, travel brochures, and anything else they found from the state. This project allowed the students to be creative while learning about the state and its capitol, this activity made the state interesting to the student. This artifact was given a rating of a four, because it was complete, attractive to the eye, and demonstrated the student had researched the state to a full extent.

Artifact Two. The second artifact from the class was the mnemonic device. The student was to make up a mnemonic sentence and illustration to help remember a state and its respective capitol. This activity represents the linguistic and spatial intelligence. The student earned a rubric rating of 3 for this activity.

The student demonstrated a clear understanding of the standard and provided a complete assignment. However, the student did mix up the order of the state and capitol city and had a few written mistakes on the display that in turn lowered the score.

Classroom Four Artifacts. The final classroom engaged students in a descriptive language essay and a model. The students were to describe in writing a "secret hideaway" and then create a 3D model of their hideaway. The students did not have a choice on how to create the model but they did have a choice on what their place would look like, contain, and be located. The students had to write a story about the hideaway, there were no other options but to write. This activity met the standards for descriptive writing in language arts. There will be two items examined from this lesson.

Artifact One. The first artifact earned a rating of 2. The student was not very descriptive of the hideaway and did not provide much detail to the model. This model was very plain and for this reason, the standard of descriptive language was not meet. The model was incomplete; it was a three-dimensional house on a piece of beige construction paper. Looking at this model one could

question if the student's understanding of descriptive language and whether the student was engaged in the activity.

Artifact Two. This artifact is completely different from the first. This hideaway was very detailed and descriptive, complete with tall grass, a river, a wood ladder to climb up the tree, and a direction compass. The model demonstrates the student thoroughly understand the descriptive language standard and was able to translate it into the model. The project earned a rating of 4 for being presentable and complete. This display also showed the level of engagement the student had for the project.

Interpretation. The artifacts found in all classrooms demonstrate at some level the positive effects of MI methods. The students in 3 classrooms were allowed to choose their own way of demonstrating their knowledge and understanding of the standard. These artifacts show the students were engaged in the activity and created meaningful projects that expressed their learning. The one classroom did not allow students to pick from a variety of projects but did incorporate MI methods to create a project rather than just the traditional descriptive essay. The caliber of work analyzed was for

the most part proficient or advance proficient. Even though there were two projects that received a score of 2, the students still created a project. The student was engaged in making the project and turned the project in but it is unclear what the student retained from the project. These artifacts indicate that students were, for the most part, creative and engaged, and that they understood the topic.

Student Interest Levels

This research strives to contribute an answer to the question: will students stay engaged if material is presented in ways students understand? As the research developed, this question evolved into another question: will students stay engaged when allowed to use MI methods to display their knowledge? This section will report the finding through observations, teacher responses on the questionnaires, and teacher reflections.

Observations. The observations provide a snapshot of what may take place in a classroom. During the observation all students in all four classrooms appeared to be engaged with the task at hand. The students were producing the work that was expected of them. They appeared to be conducting appropriate discussions for the

classroom topic. The students were working in small groups, one-on-one, or individually in many of the classrooms. The observations provided evidence that the students are engaged when allowed to use MI methods to display their knowledge.

Teacher Questionnaire Responses. The research examined what teachers are reporting about their perception of the students' interest levels. The questionnaires provided evidence that 2 out of the 4 report their students are "attentive" when using MI instructional methods. One teacher noticed their students are appreciative when there is some variety added to their learning. The other teacher noticed the students were "enthusiastic participants because strategies based on MI theory allows students to build upon their strengths". Both of these teachers noticed a difference in their students and did not report any concerns or conditions.

The other two teachers in the study reported slightly different results than the first two teachers. The other participants report a difference in students' attentiveness but with some conditions. Both teachers describe higher engagement levels and love for the lesson but found it came only when students were asked to produce

certain projects. One teacher reported "better and higher engagement levels" when students were allowed to work in groups and when they were allowed, specifically, to create a poster to demonstrate knowledge. The other teacher made note of how the students "love the visual/spatial" methods but "some struggle with making a product". These two classes seem to engage at some level when using MI methods but only under certain circumstances.

Teacher Reflections. Teachers were asked to write a quick reflection after teaching one of their lessons. The purpose of these reflections was to examine specific areas of the lesson. The teachers were to survey how the lesson proceeds. They would also describe the students' engagement levels during the lesson. Finally, the teacher made personal suggestions on what alterations could be made to gain deeper student understanding and/or engagement. These reflections allowed the teacher to scrutinize, evaluate, and refine the lesson.

The teachers picked one lesson, which was preformed during the week of data collection to evaluate. All teachers reported their lesson was seen as a success. In each lesson most students were seen maintaining some level of engagement. Interpersonal, visual, kinesthetic,

linguistic, and spatial MI methods were reported as the MI methods used during these four lessons. Three of the teachers reported interpersonal methods enhanced their lessons by allowing the students to receive extra support from their peers and allowed them to analyze and discuss the topic at hand. One teacher noticed engagement levels dipped when students were asked to silently read a passage. In response the teacher altered her lesson allowing the students to read to one another. After the alteration the teacher noticed the engagement levels rose again. Students seem to respond well when they are able to work with their peers.

There were positive reports provided by two teachers pertaining to visual, spatial, and kinesthetic methods. Both teachers received the impression that the students enjoyed the activity of making, building, and creating their product. One teacher noted, "Having students create their own manipulative allows them greater access to content". During a model building activity another teacher observed some students struggled to get started on their building but most were creative and had unique designs for their creation. Although the teachers reported successful lessons and high student engagement, one

teacher did report two students chose to do nothing in the classroom and just sat in their seat. The teacher provided ideas, strategies, and suggestions for creations however nothing motivated these students to work. This situation leads to an examination of what could be changed next time the lesson is taught.

It is important to reflect and change parts of a lesson that need to be changed. One teacher would like to add in chants or poems to a math lesson to reach those students with music and linguistic intelligences. Another teacher made reference to leaving in the alteration made during the lesson and allowing students to read with one another from the beginning. Three teachers would front load and highlight pertinent vocabulary at the beginning of the lesson to help with understanding levels. The final reflection made reference to the order in which the students conducted a project; perhaps it would have been beneficial for the students to build the model prior to writing about it. This would allow the students to be creative in the building of the model because, as the teacher noted, they seem to enjoy visual and spatial activities rather than linguistic activities. All of the

reflections are advantageous for teachers to create meaningful and engaging activities for their students.

CHAPTER FIVE

CONCLUSION

The Usefulness of Multiple Intelligences

Culminating Discussion

Education will continue to cycle through new and interesting ideas. There will always be a new way to do instruction, curriculum, and measure knowledge. One thing that needs to change is what the educational system values. Rather than value linguistic and logical-mathematical intelligences in the classroom (Larson, 2005) the culture of schools must begin to value students' abilities and interests (Denig, 2004). As more research is performed in the educational system people will start to take notice in the fact that students excel in a variety of forms. The hope is for research to help broaden ideas, thoughts, and curriculum.

The focus of this qualitative study was to consider MI as a useful instructional method. All educators must find instructional methods that will support student learning, keep students engaged, and allow students a different avenue when demonstrating newfound knowledge. Through the use of questionnaires, observations, and

artifact collections this research was able to examine and offer answers to the research questions: will MI help students stay engaged, and how is MI being implemented in the classroom? Finally, after analyzing the data, this research can attempt to answer the question of Multiple Intelligences usefulness in the classroom.

Student engagement levels set a tone in the classroom. Most students will produce work and behave properly when engaged in the classroom topic. The original research question asks if students will stay engaged if material is presented in ways they understand. As the research progressed it was clear that in order to judge engagement the study had to look at the finished products by the students and so the question evolved. The appropriate question for this research turned into: will students stay engaged when allowed to use MI methods to display their knowledge?

In order to provide an answer to the engagement question, observations were used. During the observations students in all classrooms appeared to be engaged in conversations pertaining to their subject topics. The teacher questionnaire responses provided positive statements concerning engagement levels although two

responses did have stipulations attached. The final data collection on student engagement levels came from the teacher reflections. These reflections found students were engaged in the lesson. They also found students enjoyed certain aspects of the lesson more when certain MI methods were in place. The presumption to the engagement question is that MI does in fact allow students to maintain an evident level of engagement.

All participants in the study admit to implementing MI in their classrooms. Teachers found MI provided variety, creativity, and should be weaved throughout a lesson and the curriculum. The implementation observations found MI bulletin boards were in 3 of the classrooms, which implies students are familiar with the theory. The observations also found a variety of artifacts. The artifacts are a testament to the variety and creativity the teachers spoke of. The artifacts are also a demonstration of the how the students learn, create, and think. It was also observed that the teachers were facilitators and the students worked in interpersonal groups or intrapersonal. MI implementation can be interpreted as an ongoing process. Teachers are allowing students to elect their way of displaying knowledge by

using MI methods. The implementation is taking place through the curriculum and the teachers are not relying on traditional assessment methods. Teachers are allowing their students to be creative with their assignments and value the students' talents.

The overall question to answer would be if teachers distinguish MI theory as a useful instructional method in today's classroom. Based on the data collected through observations, teacher questionnaires, teacher reflections, and artifacts the answer would have to be yes, MI is a useful instructional method in today's classroom. The participants in this study noted that MI allows students to be creative. MI allows students to have variety in the lessons and work they create. MI allows students to excel at the talents they may have. Overall, students are engaged when they are working on an activity they are vested in. Students are creating displays other than pencil and paper assessments to demonstrate their knowledge. Students are learning how to transcend in their areas of strength, which leads to engagement. The teachers in this study found MI to be a useful instructional method in today's classroom.

Recommendations for Further Research

There are a variety of ways to develop the application of MI in the classroom. There are a few recommendations to extend this research.

One recommendation of how to improve this study would be to change the methodology of the study from a qualitative study to a quantitative study. The quantitative study could examine students' grades or test scores when MI methods are applied in the classroom. There could be a comparative study between a classroom where MI methods are applied and a classroom where they are not used. This study would provide empirical data to examine and compare. Finally, the research could also be done as a longitudinal study. The longitudinal study could follow a group of students for an amount of time to see the fluctuation of their test scores based upon MI instructional methods.

REFERENCES

- Achinstein, B. & Ogawa, R. (2006). (In)Fidelity: What the resistance of new teachers reveals about professional principles and prescriptive educational policies. *Harvard Educational Review, 76 (1)*, 30-63.
- Akbari, R. & Hosseini, K. (2008). Multiple intelligences and language learning strategies: Investigating possible relations. *System, 36*, 141-155.
- Armstrong, T. (2000). *Multiple intelligences in the classroom*. Virginia: Association for Supervision and Curriculum Development.
- Baum, S., Viens, J., & Slatin, B. (in consultation with Gardner, H.). (2005). Multiple intelligences in the elementary classroom. New York: Teachers College Press.
- Beliavsky, N. (2006). Revisiting Vygotsky and Gardner: Realizing human potential. *Journal of Aesthetic Education, 40 (2)*, 1-11.
- Chen, J.-Q. (1993). Building on children's strengths: Examination of a Project Spectrum intervention program for students at risk for school failure. Paper presented at the *biennial meeting of the Society for Research in Child Development, New Orleans, LA*.
- Chen, J.Q. (2004). Theory of multiple intelligences: Is it a scientific theory? *Teachers College Record, 106 (1)*, 17-23.
- Cuban, L. (2004). Assessing the 20-year impact of multiple intelligences on schooling. *Teachers College Record, 106 (1)*, 140-146.
- Denig, S. (2004). Multiple intelligences and learning styles: Two complementary dimensions. *Teachers College Record, 106 (1)*, 96-111.

- Diaz-Lefebvre, R. (2006). Learning for understanding: A faculty-driven paradigm shift in learning, imaginative teaching, and creative assessment. *Community College Journal of Research and Practice*, 30, 135- 137.
- Douglas, O., Smith Burton, K., & Reese-Durham, N. (2008). The effects of the multiple intelligence teaching strategy on the academic achievement of eighth grade math students. *Journal of Instructional Psychology*, 35 (2), 182-187.
- Eisner, E. (2004). Multiple intelligences: Its tensions and possibilities. *Teachers College Record*, 106, 31-39.
- Gardner, H. (1983). *Frames of mind: A theory of multiple intelligences*. New York: Basic Books.
- Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: Basic Books, McGraw-Hill.
- Gardner, H. (1999). *Intelligence reframed*. New York: Basic Books.
- Gardner, H. (2000). *The disciplined mind*. New York: Penguin Books.
- Gardner, H. (2004). Audiences for the theory of multiple intelligences*. *Teachers College Record*, 106(1), 212-220.
- Jung, T. & Kim, M. (2005). The application of multiple intelligences theory in South Korea. *School Psychology International*, 25 (5), 581-594.
- Kornhaber, M. (2004). Multiple intelligences: From the ivory tower to the dusty classroom- but why? *Teachers College Record*, 106 (1), 67-76.
- Larson, S. (2005). Teaching for transformation of today's challenging youth. *Reclaiming Children and Youth*, 14 (1), 27-35.

- McCoog, I. (2007). Integrated instruction: Multiple intelligences and technology. *The Clearing House*, 81 (1), 25-28.
- McMahon, S., Rose, D., & Parks, M. (2004). Multiple intelligences and reading achievement: An examination of the Teele inventory of multiple intelligences. *The Journal of Experimental Education*, 73 (1), 41-52.
- Noble, T. (2004). Integrating the revised Bloom's Taxonomy With multiple intelligences: A planning tool for curriculum differentiation. *Teacher College Record*, 106 (1), 193-211.
- Ornstein, A. & Levine, D. (2006). *Foundations of education* (9th ed.). New York: Houghton Mifflin Company.
- Rettig, M. (2005). Using the multiple intelligences to enhance instruction for young children and young children with disabilities. *Early Childhood Education Journal*, 32 (4), 255- 259.
- Sandholtz, J., Ogawa, R., & Scribner, S. (2004). Standards gaps: Unintended consequences of local standards-based reform. *Teachers College Record*, 106 (6), 1177-1202.
- Shearer, B. (2006). Using a multiple intelligences assessment to promote teacher development and student achievement. *Teachers College Record*, 106, 147-162.
- Shepard, J. (2004). Multiple ways of knowing: Fostering resiliency through providing opportunities for participating in learning. *Reclaiming Children and Youth*, 12 (4), 210-216.
- Shore, J. (2004). Teacher education and multiple intelligences: A case study of multiple intelligences and teacher efficacy in two teacher preparation courses. *Teachers College Record*, 106 (1), 112-139.
- Sternberg, R. (2008). Applying psychological theories to educational practice. *American Educational Research Journal*. 45 (1), 150-165.

Waterhouse, L. (2006a). Inadequate evidence for multiple intelligences, Mozart effect, and emotional intelligence theories. *Educational Psychologist*, 41 (4), 247-255.

Waterhouse, L. (2006b). Multiple intelligences, the Mozart effect, and emotional intelligence: A critical review. *Educational Psychologist*, 41 (4), 207-225.