The Impact Of Howard Gardner's Theory Of Multiple Intelligences On Change In Middle School Language Arts Curriculum

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THE IMPACT OF HOWARD GARDNER'S THEORY OF MULTIPLE INTELLIGENCES ON CHANGE IN MIDDLE SCHOOL LANGUAGE ARTS CURRICULUM

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Thank You,
Dr. Elaine Walker
Claire Kennedy Judge
With much love to Owen
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Abstract

The Impact of Howard Gardner's Theory of Multiple Intelligences on Change in Middle School Language Arts Curriculum

The effect of implementation of multiple intelligences on language arts curriculum in middle schools is examined through the lens offered by middle school language arts teachers who have implemented multiple intelligences in their classrooms. Four broad domains were the focus of the study: student performance, pedagogy, curriculum and assessment, so conclusions about change in curriculum covered all curricular areas. Thirteen research questions were the focus of the twenty-eight question questionnaire used to collect findings concerning change, and these questions were taken from reading works by Howard Gardner and others closely aligned to multiple intelligences. The study included observations and interviews to support findings and enhance teachers' perspectives on the four broad domains studies.

The highest level of change when multiple intelligences was implemented was found in the area of student performance. What students were asked to contribute to their learning included interest-based topics as well as suggestions through brain storming. Pedagogy ranked second in change, and assessment ranked third in change when it is implemented. Curriculum change was lowest in rank. Teachers stayed within their prescribed curriculum and enhanced it with multiple intelligences rather than shortening topics taught within their discipline.

Results included a close rating for each teacher relevant to level of implementation of multiple intelligences in the classroom and questionnaire questions one to twenty-eight suggesting that multiple implementation does affect change in the classroom in the four domains in relation to teachers' levels of implementation rated as low, medium, and high.
CHAPTER I

Introduction

Educators, studying reports aimed at school reform after the restructuring called for in *A Nation At Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983), awaited new directions in administrative leadership, research on educational issues applicable to the classroom, and deeper insight into cognition and knowledge acquisition. The *Paideia Proposal* (Adler, 1982) called for classical humanism in modern form, and the recommendations of the Holmes Group (1986) called for teachers to major in a particular subject area rather than in education staying within the lines of classical humanism and calling for grounding in content rather than pedagogy. State level reform proposals, holding these reports in high regard, followed in great number (Beane, p.112). While politically correct, the solutions projected onto schools solved socioeconomic problems and identified schools as the change agent in need of change.

Part of the success of the school reform movement, however, was educators' examination of philosophies and belief systems about children and teaching and learning. New models of curriculum that reflected new learning goals, innovative instructional strategies, and individual differences among students were constructed, and when examined were found to be unconnected, fragmented and disjointed, especially at the middle school level where “The school constructs and organizes a curriculum that is an artifice of life and, in that sense, an obstacle to education that has unity and meaning.” (Beane, 1990, p. 9).
Language arts curriculum in the middle school, the how and what of sixth, seventh and eighth grade writing, speaking, listening and reading education, provides a framework for what students are expected to learn and how they are expected to learn. The processes of curriculum can be time-worn and dictated by states and districts who create guides and textbooks coming from distant states with publishers addressing the marketplace instead of students’ interests and needs. Levels of learning necessary in 1998 require change in these conditions that determine student learning. “While a few proposals for serious curriculum reform have appeared in recent years, the ‘secondary school’, subject-centered organization has continued to dominate middle schools.” (Beane, p.10).

In addition to lack of integrated curriculum and the resulting wholeness and unity in student learning, middle school curriculum needs to address meaningful, age-appropriate experiences. Young students need to create connections across academic subjects in a new way unlike that offered for high school students. The separate identity of middle school subjects still exists in middle school curriculum where “interdisciplinary” is really “multidisciplinary”. “In short even the more innovative curriculum examples in middle school are really adapted versions of the high school curriculum.” (Beane, p. 10).

Howard Gardner, following a tradition begun in the 1930s, challenged the intelligence theory of an inherited, unitary, intellectual power, and relied on end states attainable within cultural settings. He posited 7 different intelligences: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, and intrapersonal. Learning centered on the belief that each student can succeed through strengths in particular intelligences if the curriculum is designed so all intelligences can be utilized rather than the usual reliance on logical-mathematical and linguistic intelligences. Children learn best when they use their strengths, and application of multiple intelligence theory appealed to individual strengths which added a new dimension to education reform. Culturally significant activities enable a display of intelligence, and restricting abilities into
linguistic and logical-mathematical domains does not advance individual students’
development.

The recognition of important individual differences should call into
question the current curriculum emphasis on linguistic and
logical-mathematical intelligences. Gardner states it is possible to design
curriculum and assessment to allow students to demonstrate their
strengths, perform optimally and be assessed with equitable measures that
match their intelligences. The lines between assessment and curriculum,
students and teachers and the teaching-learning process are in the process
of being redrawn (Teele, 1994).

Beane (1991) like Gardner, says the new curriculum must offer a powerful voice in
curriculum planning to middle school students; the curriculum must proceed from a
constructivist view; the curriculum must be knowledge rich; there must be authentic
integration of affect and cognition, and the curriculum must depart from a subject-area
approach to integration which will make the curriculum person-centered and thematic, all
remedies running through Gardner’s prescriptions for education.

Gardner’s theory is based on the belief that every child can learn when multiple
intelligences is applied in the classroom. Cognition and brain theory formed an interesting
and innovative basis for a new understanding of learning absent from most reform
initiatives. Governmental and corporate needs and international competition paired with
new findings in neurobiology, represented a fair and equitable beginning for curriculum
change. Learning about multiple intelligences, but little else in the line of new texts, new
testing devices, reconfigured classrooms, or myriad other investments previous reforms
required for classroom implementation, made implementation of MI fiscally responsible.

Gardner saw children as active observers in need of an environment that enabled a
scientific progression of learning, including observation, formulation of solutions,
experimentation and summarization. Critical thinking, reflective discourse, and
participation are learning environment characteristics that allow cognition and knowledge its rightful place in curriculum planning.

Gardner added to this position his theory based on empirical data which raised hopes for educators: all children can learn when specific intelligences are the basis of curriculum choices, assessment and pedagogy. His theory made sense to practitioners; whether subject centered, societal centered, or individual centered, curriculum enhanced by multiple intelligence theory addressed students’ needs in areas of cognition, social reconstruction and self-actualization with desired outcomes and a focus on the substance of curriculum. In Gardner’s school of thought, a curriculum directed to broad coverage will cause an overabundance of facts lost to the student as soon as the test is over, and superficiality as opposed to in-depth learning. Curricula and assessments to be used are based upon what end states and final exhibitions are desired from the student (Gardner, 1993a).

Multiple intelligence theory has become known and understood throughout school districts through individual enterprise resulting from curiosity, inservice courses for teachers, and common sense application of a theory that works. It is a direction for education that changes and improves student learning, pedagogy, assessment, and school focus on cognitive development through teacher and student choice of areas of curriculum emphasis:

At first the pursuit of multiple intelligence served as a focus for our professional development. Then as we began to bring multiple intelligences into the classroom, we found that we had not only modified our curriculum, but we had also begun to assess students differently. (Hoerr, 1994a, pp. 32-35)

Gardner’s theory, progressive in its belief that students should be involved in activities that parallel those found in society, those activities should engage students’
natural interests, and the philosophy that "what do you need" should be asked, not "what do you know" (Hass, 1993, p.321), may continue Ralph Tyler's eight year study done from 1932-1940. His results showed progressive education to increase grades in every subject area except foreign languages, but the students in the study had higher performance in such areas as problem solving, inventiveness, curiosity, and motivation to achieve. World War II overshadowed his results (Hass, 1993).

Gardner offers a useful and real-world way to look at children, their intelligence and ability, and a framework in which to organize their curriculum. What does that look like in schools in 1998? Since its introduction into the English language, curriculum has been seen as an instrument of school reform and teachers as mediators between the curriculum and intended outcomes. The continuous string of curriculum reformers, reforms and innovations have created a pervasive climate of antipathy to reform on the part of teachers (Jackson, 1992).

One of the developments of the past decade or so has been the refinement of challenges to our traditional views of the nature of human intelligence. The idea that individuals possess distinctive conceptions of the world that are manifested in every application of reasoning power, whatever its object, and that could be elicited through judicious questioning was only recently applied in various ways to our understanding of mental functionings (Gardner, 1972). A radical departure from the traditional views of intelligence as measured by the Stanford-Binet,

To my mind, a human intellectual competence must entail a set of skills of problem-solving-enabling the individual to resolve genuine problems or difficulties that he or she encounters and, when appropriate, to create an effective product- and must also entail the potential for finding or creating problems-thereby laying the groundwork for the acquisition of new knowledge...within a cultural context. (Gardner, 1994, pp. 60-61)
Is multiple intelligences a paradigm shift or a new treatment of familiar theories and practices? Does the theory have the power to change how we view students, teach, assess, and communicate? Thomas Hoerr (1996) says, "MI theory is a paradigm shift because it changes the way we look at students and their potentials. As a result, we view our roles and responsibilities quite differently" (p. 8). Gardner has criteria for intelligence: potential isolation by brain damage, existence of idiot savants, prodigies, and other exceptional individuals, an identifiable core set of operations-basic kinds of information-processing operations or mechanisms that deal with one specific kind of input, a distinctive developmental history, along with a definite set of "end-state" performances, an evolutionary history and evolutionary plausibility, support from experimental and psychological tasks, support from psychometric findings, and susceptibility to encoding from a symbol system (Ibid., 1996, p. 9).

Curriculum policy statements reflect pluralistic interests in functional competency, intellectual development, traditional values, social relevancy, and self-actualization. Something for everybody overrules sound educational philosophy unless there is a redefinition of goals. Students' active learning in exploring, drawing inferences, problem solving, collaborative learning, and creativity enables them to derive meaning from learning. An ideal academic curricula is the goal of national and state policy makers, but the perceptions of teachers and students must receive equal attention in developing curricula; multiple intelligences makes this happen.

For teachers, some curriculum reform is both potential master and source of retribution since the primary unit of adoption of the reform is the teacher, and the development of the teacher is essential; teachers must change in ways specified by the reformers which is deeply controlling. This change is the how of the curriculum examination. Hence, the teachers as much the targets of reform as are the students. The multiple intelligences' contribution to change, however, with its basis in scientific research, requires that the teacher manage the content of the curriculum to be delivered,
empowering the educator with the insight needed to select carefully. The value of multiple intelligences are that they can be implemented in a traditional instructional context or in an open environment. It can be adapted to various pedagogical approaches without disabling learning due to the environment. As teachers design curriculum and create learning centers, they try to reflect options for all 7 of the intelligences; therefore, implementing the MI model also means that classes offer more choices than before. As curriculum and instruction are modified around MI, so, too, are assessment techniques: paper and pencil measures, drawing primarily upon linguistic and logical-mathematical intelligences, are no longer sufficient (Hoerr, 1994).

Textbook based instruction, passive learning, teacher directed instruction and numerative assessment, when replaced with hands-on activities, supplemented unitary work, problem solving and student-teacher directed instruction, changes the curriculum from multidisciplinary to interdisciplinary. These shifts in curriculum underscore understanding as a goal of the curriculum in addition to use of materials from real life experiences of the students. Solving problems through discussion of non-routine problems sets this process of problem solving as another curriculum goal with teachers and students learning from each other and assessment through problem solving, reasoning and discussion. Guided inquiry as a replacement for memorization and didactic instruction requires that teachers teach and test in new ways (the how), and material within the traditional curriculum must be re-evaluated for priorities since the time element will rearrange the numbers of things to be taught/learned in the language arts classroom (the what).

Will the teacher be led in curriculum choices by intuition or goals? With clearly defined instructional goals and objectives there will be matters of choices based on value judgments. Will the essentialist prevail and the best instruction come from a huge culture pool, or will the progressive approach prevail where curriculum is chosen to address individual needs?
Change of curriculum has obstacles: incompatible texts and materials, inaccessible technology, inappropriate assessment, inadequate professional development, a lack of time, and an incompatible educational paradigm. Change, to last, must occur top-down and bottom-up or it will only be one year’s experience with no continuation. How can teachers take advantage of the new experiences that their students have encountered in previous years?

The application of multiple intelligences is examined and predicted by Gardner (1993, p.191) to “radical foreshortening of the curriculum when educating for understanding from a broad spectrum of topics to a smaller selection of topics which enables in-depth learning”. In Gardner’s works, the purpose of schooling is reiterated as the ability to develop students’ intelligences and to help them reach vocational and avocational goals that are appropriate to their dominant intelligences.

The belief that every child can learn centers on the success that each student realizes if the curriculum is designed so all intelligences can be applied rather than the usual reliance on logical-mathematical and linguistic intelligences that resulted in a numerical assessment of ability or IQ. Children learn best when they use their strengths, and application of multiple intelligences has added a new dimension to education reform because individual strengths for learning will produce a less parochial curriculum solely focused on two intelligences. The community outside of the school walls is thought by Gardner to be a necessary piece of younger members’ participation in a culture.

The problem is how do middle school teachers’ interpretations of multiple intelligences theory affect language arts curriculum in respect to pedagogy, assessment, subject integration, interdisciplinary approach and purpose.

Research Questions

1. What is the curriculum now? What was it before multiple intelligences?

2. How has middle school subject matter in language arts changed since multiple intelligences has become a focus and guiding principle?
3. How does multiple intelligences change curriculum content, delivery, choice, and chronology.

4. Has assessment through portfolios, progress reports, profiles and emphasis on genuine understanding allowed students to learn to explain, find evidence and examples, generalize, apply and represent a topic in a different way. (Perkins & Blythe, 1994).

5. How do the teachers integrate the curriculum when MI is implemented?

6. What materials does the teacher use to appeal to all the intelligences? What evidence of these materials is evident in the classroom?

7. Does this theory affect the number of facts learned in the belief that broad coverage will cause an overabundance of facts, lost to the student as soon as the test is over and superficiality as opposed to in-depth learning?

8. Are curricula and assessments used based upon what end states and final exhibitions are desired from the student?

9. Is real life experience reinforced by a progressive curriculum that is student centered?

10. Do teachers put away the didactic lecture approach of the traditional classroom?

11. How has MI theory changed how the teacher looks at students and their potential?

12. Do students' specific intelligences form the basis for curriculum choices, assessment and pedagogy?

13. Is the curriculum knowledge rich, constructivist, person-centered and thematic?

Significance of the Study

This study's purpose is to conduct a qualitative study of middle school language arts classrooms where teachers are actively providing instruction based on multiple intelligences and to identify the connections that relate curriculum change to multiple intelligences.
Research on curriculum, multiple intelligences, and its application in middle school language arts classrooms will enable those making curriculum policy, evaluating curriculum, and answering curriculum questions to understand the paradox of curriculum in 1998: where the meeting of official curriculum from traditional sources usually bordering on classical humanism, and the enactment of curriculum as a result of teacher empowerment, interest in the child-centered classroom and application of multiple intelligences, usually progressive in nature, occurs. What does curriculum become when these 2 forces meet, and is this the direction of curriculum planning?

Seven teachers are in 3 districts are in New Jersey, one teacher is in Sante Fe, New Mexico, and 4 teachers are in Illinois. Their schools are all ten month, 6th through 8th grade middle schools. The subjects to be studied are teachers. Initial questionnaires were used to establish teachers who applied multiple intelligences to classroom content and practice. Examination and analysis of two curriculum guides from 1996 and 1997 gave present curriculum practice perspective as to change. This qualitative study describes a view of the nature of curriculum as represented in language arts classrooms where multiple intelligences has been applied.

Limitations of the Study

The population sample was taken from 5 districts in 3 states, Illinois, New Jersey, and New Mexico, and 4 classrooms were chosen by the researcher for observation where multiple intelligence was applied; 4 teachers were able to participate in interviews. The study did not attempt to predict success of students or their continued success in high school. The study did assess the extent of classroom implementation of multiple intelligences and the changes resulting from MI theory when applied to curricula in the past year. The study did not assess teacher effectiveness in the application of multiple intelligences in the classroom.

Definition of Terms

The study provides definitions for important concepts:
Multiple intelligence theory. A theory described by Howard Gardner (1983) as 7 intelligences: linguistic, logical-mathematical, intrapersonal, spatial, musical, bodily-kinesthetic and interpersonal, which all human beings possess but in varying degrees. Each intelligence is unique, identifiable, and valued differently, depending on the culture. These distinct characteristics affect content to be taught, but not the process of learning.

Curriculum. All the experiences that individual learners have in a program of education whose purpose is to achieve broad goals and related specific objectives, which is planned in terms of a framework of theory and research or past and present professional practice (Hass, 1980).

Curriculum planning. A process in which participants at many levels make decisions about what the purposes of learning ought to be, how those purposes might be carried out through teaching-learning situations, and whether the purposes and means are both appropriate and effective (Beane, Toepfer, and Alessi, 1986).

Curriculum development. The design of plans for actual teaching-learning situations. It is based upon the broad goals and related program of learning activities identified in curriculum planning activities.

Instruction is developed from broad goals and curriculum plans and focuses on methodological questions, resources, and teaching techniques. Individual teachers or teams of teachers develop specific teaching-learning situations such as units or lessons. They work to decide the most appropriate implementation of activities, resources, and measuring devices used in those specific teaching-learning situations (Beane, Toepfer, and Alessi, 1986).

Middle school. Programs designed to accept and allow for the developmental levels of pre-adolescent and early adolescent (transescent) young people in 4 domains: the intellectual, physical, social, and psychoemotional (Raebeck, 1992, p. xvii).
Organization of the Study

This study will be organized into 5 chapters. Chapter I, Introduction, includes an introduction, a statement of the problem, research questions, hypotheses, significance of the study and its limitations, and definitions of terms used throughout the paper.

Chapter II, Review of Related Literature deals with the related literature about multiple intelligence theory. Literature dealing with the criteria and characteristics of a language arts classroom in the middle school which applies multiple intelligences for curricular decisions is reviewed. Questions concerning how intelligences are best developed, middle school curriculum concerns, changing pedagogy given the multiple intelligences classroom needs, and the transformation of schools through implementation of multiple intelligences are addressed. Critical concerns about the theory and its application to education are also addressed.

Chapter III, Methodology gives an overview of the study and describes the subjects, instruments and research procedures to be employed in the study. Types of data analysis to be used in evaluating the significance are described.

Chapter IV, Results will describe the results of the surveys.

Chapter V, Summary, Conclusions, Recommendations will address the significance of the major findings of the study. It will also include conclusions and recommendations for future research.
CHAPTER II
Review of Relevant Literature

Multiple Intelligences Theory

Recent discussions about the restructuring of schools focus on ways in which institutional settings and teacher roles can enhance student learning. This is an important concern, but the issue of curriculum content, what should be taught and why, is still relatively neglected. The theory of multiple intelligences (MI theory) challenges the prevailing concept of intelligence as a single general capacity which equips its possessor to deal more or less effectively with virtually any situation. MI theory paints a more variegated and contextualized picture, positing a number of intelligences. Based on Gardner’s empirical work with normal and gifted children, as well as on studies of brain-injured adults, it defines an intelligence as the capacity to solve problems or fashion products which are valued in one or more cultural settings (Blythe & Gardner, 1990). Although they are not necessarily dependent on each other, these intelligences seldom operate in isolation. Suggested alternatives to current educational practices are to address other abilities and talents besides the linguistic and logical-mathematical, acknowledge a wide variety of valuable and independent domains for a shift in instructional conditions, assess each intelligence directly, in contexts which call it into play, and consider the highly individualized ways in which people learn. (Blythe & Gardner, 1990).

Human cognitive competence has been measured for 92 years using French psychologist, Alfred Binet’s first intelligence test approach which reduced intelligence to a number or IQ. One of the developments of the past decade or so has been the refinement of challenges to our traditional views of the nature of human intelligences. Swiss
psychologist Jean Piaget's work from the 1920's has recently been applied to various ways of understanding mental functions (Morrin, 1994).

Gardner (1983) questioned the validity of performing isolated tasks never tried before, out of context, to measure intelligence; he tested intelligence through problem solving and fashioning products in context where these events normally occurred. Each intelligence had to meet basic tests to rise from talent, skill or aptitude to intelligence. He argued for relatively autonomous brain systems directing each intelligence. Intelligences are best seen at work through observation of "end-states" in lives of exceptional people. Most people can develop each intelligence to an adequate level of competency. The intelligences work together interactively, and there are many ways to be intelligent within each category.

In the heyday of the psychometric and behaviorist eras, it was generally believed that intelligence was a single entity that was inherited; and that human beings—initially a blank slate—could be trained to learn anything, provided that it was presented in an appropriate way. Nowadays, an increasing number of researchers believe precisely the opposite: that each intelligence has its own strengths and constraints; that the mind is far from unencumbered at birth; and that it is unexpectedly difficult to teach things that go against early 'naive' theories or that challenge the natural lines of force within an intelligence and its matching domains (Gardner, 1983, p. xix).

While he acknowledges, "at first blush, this diagnosis would appear to sound a death knell for formal education" (Gardner, 1983, p. xix), he sets forth in his book the 7 types of intelligence considered part of the theory of multiple intelligences. He details what components of understanding and capabilities these intelligences entail, and gives examples of individuals who excel in each.
Gardner was well aware of the far-reaching implications of his MI theory, he comments:

...It might turn out that the whole Western inclination to pick out intelligence—or intelligences—as a 'natural kind' may not be the best (or even a proper way to slice up the human psyche or human behavior. And in such a case, the present theory, like all those it purports to replace, will go the way of philogiston (Gardner, 1993, p. 297).

Gardner’s concern with issues of human intelligence grew out of both theoretical and practical factors. Gardner was convinced that the Piagetian view of intellect was flawed resulting from his own studies of the development and breakdown of cognitive and symbol use as part of a single “semiotic function.” Empirical evidence suggested that the human mind may be quite modular in design. Different types of symbol use appeared to be subserved by different portions of the cerebral cortex (Smerechansky-Metzger, 1995).

In 1983 Howard Gardner expanded the theory’s definition from areas of expertise in logical-mathematical and linguistic intelligences easily measured on an IQ test to a model of 7 intelligences: logical-mathematical, linguistic, spatial, kinesthetic, interpersonal, intrapersonal, and musical. There are also other intelligences being examined for inclusion in his theory: existential, naturalistic, spirituality, moral sensibility, sexuality, humor, intuition, creativity, culinary ability, olfactory perception, and an ability to synthesize the other intelligences.

Gardner’s theory holds that children and all people are much more complex than once viewed by traditional theories of intelligence, learning, and development. The premise of Gardner is that people naturally have specific areas of both strength and weakness and that ability and intelligence exist in not only the traditional curricular focus areas of language and numero-mathematics (which are also the aim of most instruction, assessment, and reporting), but also in 5 other areas of development or ways of knowing (Burchfield, 1996).
Gardner’s theory is related to the seemingly all-too-simple and yet quite profound premise that children are different and they are much more capable than previously was conceptualized. A theory of difference asserts that people learn on a continuum from novice to expert in any given domain of learning and development (Hatano & Inagaki, 1983; Walsh 1991 cited in Burchfield, 1996).

Gardner was unprepared for the positive and enormous reaction to the theory among educators. In 1993, he wrote a reflective introductory essay to the tenth anniversary edition of *Frames of Mind* and was able to answer some criticism leveled against multiple intelligences. As Gardner saw it, he had issued an “ensemble of ideas” (or “Memes”) and they were left to fend for themselves, until he described 3 primary ways in which education could be enhanced by a multiple intelligences perspective and clarified some incorrect notions about multiple intelligences (Gardner, 1995). Most concerned with the uses of intelligences, he suggested some positive ways: the cultivation of desired capabilities, approaching a concept, subject matter, or discipline in a variety of ways, and the personalization of education. The heart of the MI perspective “in theory and in practice- inheres in taking human differences seriously” (Ibid., 1995). When visiting a school where multiple intelligences is implemented, Gardner looks for signs of personalization, evidence that all involved take such differences among human beings seriously, evidence that they construct curricula, pedagogy, and assessment insofar as possible in the light of these differences (Ibid., p. 208).

Schools are places where, in Gardner’s words, (1995) differences among youngsters are taken seriously, knowledge about differences is shared with children and parents, children gradually assume responsibility for their own learning, and materials that are worth knowing are presented in ways that afford each child the maximum opportunity to master those materials and to show other (and themselves) what they have learned and understood.
I cherish an educational setting in which discussions and application of MI have catalyzed a more fundamental consideration of schooling—its overarching purposes, its conceptions of what a productive life will be like in the future, its pedagogical methods, and its educational outcomes, particularly in the context of the values of that specific community...a more personalized education is the outcome, I feel that the heart of MI theory has been embodied. And if this personalization is fused with a commitment to the achievement of worthwhile (and attainable) educational understandings for all children, then the basis for a powerful education has indeed been laid. (Ibid., 1995, p. 209)

Thomas Armstrong coined the term “paralyzing experiences” to describe experiences that “shut down” intelligences. “Paralyzing experiences are often filled with shame, guilt, fear, anger and other negative emotions that prevent our intelligences from growing and thriving” (Zevik cited in Kelder, 1994, p.196). Armstrong can also be credited for providing workable ideas for teachers interested in classroom use of multiple intelligences.

“Armstrong’s idea is in response to Gardner’s (1983) work with “crystallizing experiences...the sparks that light an intelligence and start its development toward maturity.” (p. 22) These sparks are turning points in an individual’s development of skills and abilities. Armstrong says that MI application “can help us develop neglected intelligences, activate underdeveloped or paralyzed intelligences, and bring well-developed intelligences to even higher levels of proficiency.” (p. 24)

Jack Beatty (1998) describes Peter Drucker’s childhood education as the first modeled credo Drucker imparted to executives for over 50 years: focus on what people can do, not on what they can’t do. Miss Elsa, his teacher at a progressive school, devised a way to make Peter responsible for his own learning. She gave him a notebook and required him to record what he expected to learn at the beginning of each week and then
to check his expectations against the results at the end of the week. Gardner's MI theory implicitly suggests this approach.

Schools concentrate more on problems than on strengths. As a result "people don't know what they do well because they are not encouraged to think that way. That's probably my greatest strength as both a teacher and consultant- I immediately look for that." He generalizes to others the method of his own learning. "I realized that I, at least, do not learn from mistakes. I have to learn from successes." (Beatty, 1998, p. 9). In other works Drucker calls education the 4th landmark of the future, but making educated people productive is first among the challenges of our age, and making them content is another matter (Ibid., 1998, p.98).

Howard Gardner (1972) equated the possibilities of outside forces rather than genetic endowment as the determinant of human development and success:

Few schoolboys today have ever read a line of the Federalist papers or of Jefferson's writings, let alone the philosophical writings of Locke or Montesquieu which formed the basis for American political thought. Nevertheless, there is a sense in which the Founding Fathers have been 'read' by Americans of all ages; such articles of faith as the essential equality of all men, the right to possess property and pursue happiness, the need for checks and balances within a constitutional system, have for so long been 'in the air' that they form a natural and effortlessly acquired set of beliefs for most inhabitants of our country. (Gardner, 1972, pp. 15-16).

Gardner continues that these articles of faith and beliefs extend into the scientific realm where fixed genetic endowment and parental social status were believed to determine the human mind and development, but today it must be understood that people can evolve in different ways and are a reflection of pressures and models present in individual environments.
Cognition and knowledge did not join the other bases for curriculum development until the 1960s despite John Dewey's (1938) call for a serious consideration of this most human element in curriculum planning:

There is incumbent upon the teacher who links education and actual experience together a more serious and a harder business. He must be aware of the potentialities for leading students into new fields which belong to experiences already had, and must use this knowledge as his criterion for selection and arrangement of the conditions that influence their present experience. (Hass, p. 239)

Romanticism, cultural transmission, and cognitive-developmental schools of thought reflect different educational psychologies that lead to different strategies for defining educational objectives and evaluating educational experience (DeVries & Kohlberg, 1990).

Multiple intelligence theory, having its basis in cognition, describes how people use intelligences to solve problems and fashion products, unlike “learning styles” that are the “pragmatic manifestations of intelligences operating in natural learning contexts.” (Armstrong, 1994, p.13). Gardner’s theory explains how the mind acts on the world’s contents (Ibid., 1994).

**Development of Intelligences**

Development of intelligences to a competent level of mastery relies on 3 main factors: biological endowment, personal life history, and cultural and historic background. Access to resources or mentors, historical cultural factors, geographic factors, familial factors and situational factors are variables which support intelligence development, but a nurturing learning environment counts more than nature in developing intelligences (Armstrong, 1994).

Intelligence is defined by Gardner (1995) as a "biological and psychological potential: that potential is capable of being realized to a greater or lesser extent as a
consequence of the experiential, cultural, and motivational factors that affect a person (as cited in Ibid., 1995). When the focus is strictly on the logical-mathematical or linguistic portion of education, only a portion of the child’s abilities is tapped. In a “pluralistic view of the mind...people have different cognitive strengths and contrasting cognitive styles” (Ibid., 1995, p.6). The greatest omission may be the opportunity for a child to develop other abilities and, consequently, to get a feeling of self-worth from accomplishments in a variety of areas. (Berger, 1996).

Gardner looks forward to 2013, thirty years after Frames of Mind first revealed his revolutionary theory. Acknowledging the limitations of social science to deal in “permanent truths”, Gardner is hopeful that the conversations about intelligence will result in a “wider acceptance of the notion that intelligence deserves to be pluralized.” (Jordan, 1996, p. 35)

Although there is great disagreement among psychologists about the structure of intelligence, the weight of the evidence at the present time is that intelligence is multidimensional, and that the full range of these dimensions is not completely captured by any single general ability. Almost all psychologists agree that intelligence involves adaptation to the cultural or biological environment, and at different times in history factors have sorted people into different social classes. Societies choose their bases for sorting, and abilities measured by current cognitive tests are simply one of many bases for sorting, so our own social order is partially a function of the kinds of cognitive abilities measured by psychometric tests (Sternberg, 1996). Measures of practical intelligence that predict success in school as well as measures of practical intelligence that predict performance on the job do not correlate meaningfully with psychometrically measured intelligence (Sternberg, 1996). Ultimately, the problem is not with tests, but with how they are used. Originally intended to increase fairness by reducing the subjectivity of judgments about children, tests can still serve that purpose when coupled with predictors that measure diverse abilities rather than only unitary aspects of abilities.
The heritability of intelligence is a question entirely distinct from that of the modifiability of intelligence. However it is defined, intelligence is only one attribute of human beings and one attribute leading to certain kinds of success, but tests of intelligence can at best provide measures of certain cognitive skills; they are not measures of human worth.

**Middle School Curriculum**

Multiple intelligences has important educational implications including ones for the curriculum development. The theory of multiple intelligences should not be used to dictate a course of study or career, but it constitutes a reasonable basis on which to make suggestions and to choose electives. We find that the assessment of intelligences can play a crucial role in curriculum development (Gardner, 1993, p. 27). “I am pleased that these ideas fit comfortably with the long-term American ideals of progressive education.” (Gardner, 1993, p. 75). “It is not an exaggeration to say that we have let the testing tail wag the curricular dog. Nor is it an exaggeration to say that the IQ test has led the way inexorably to the current intoxication with the uniform school” (Gardner, 1993, p. 70).

Individual-centered school where there exists a role called the student-curriculum broker is delineated by Gardner as essential to planning. The school we envision commits itself to fostering students’ deep understanding in several core disciplines (Gardner, 1993). “The best way to approach curriculum development using the theory of multiple intelligences is by thinking about how we can translate the material to be taught from one intelligence to another.” (Armstrong, 1994 p. 57)

Armstrong (1994) suggests a 7-step procedure to create curriculum units using multiple intelligences as an organizing framework:

1. Focus on a specific objective or topic.
2. Ask key MI questions.
3. Consider the possibilities.
5. Select appropriate activities.
6. Set up a sequential plan.
7. Implement the plan.

Multiple intelligences has become understood and applied through private enterprise resulting from curiosity, inservice courses for teachers, and a common sense application of a theory which works as well as academic course sources. It is also a philosophy about education with direction for student learning and pedagogy and school concern for cognitive development.

At first the pursuit of multiple intelligence served as a focus for our professional development. Then as we began to bring multiple intelligences into the classroom, we found that we had not only modified our curriculum, but we had also begun to assess students differently." (Hoerr, 1994, p. 32).

There is incumbent upon the teacher who links education and actual experience together a more serious and a harder business. He must be aware of the potentialities for leading students into new fields which belong to experiences already had, and must use this knowledge as his criterion for selection and arrangement of the conditions that influence their present experience. (Hass, 1980, p. 251).

A narrow view of what comprises an education and what young adolescents are like continues to make it difficult to operationalize many aspects of education, but specifically the middle school concept. For instance, if parents recognized the exploratory nature and needs of young adolescents, they would demand more extensive exploratory experiences rather than fear disrupting what they view to be the main aspect of their child's education. Helping to educate parents and the public about these distinctive transitional years between childhood and full adolescence must continue as a direct responsibility of every middle level teacher, counselor, and administrator (Lounsbury, 1992).
John Dewey made a compelling case for knowledge as a basis of curriculum in 1938 (Experience and Education), but theorists and practitioners of the time, intent on implementing the other bases, gave little heed to his logic. Curriculum development before President Arthur W. Foshay’s address at the Association for Supervision and Curriculum Development in 1961 (Foshay, 1961), emphasized learning, society, and human development as the bases of curriculum planning. Curriculum planners in the 1990’s rely on an extensive understanding of the nature of knowledge and the processes through which students can acquire knowledge: authority, divine revelation, experience, reason, and intuition. We have always known there are different kinds of knowledge and different human needs for knowledge. Structure, order, and configuration were observed in things to be learned.

Jerome Bruner’s (1963) discovery learning uncovered a method for discovering internal meaningful context in things to be learned. Knowledge, not a static phenomenon, changes as we enter new experiences that alter or add to our understanding through inquiry and dialogue and enables critical thinking. Students become constructionists when asked to organize what is encountered for regularity and relatedness. Improvement of memory processes occurs with organization. According to Bruner (1963), knowledge has an internal connectedness, a meaningfulness, and appreciation and understanding requires an internal context into which the new knowledge must fit to be remembered. Understanding the simplicity in the structure of knowledge requires scholars, scientists and compassionate persons who can discern this simplicity; these people should, he contends, build curricula.

Describing and explaining elements of curriculum that have changed due to an application of multiple intelligences begins with the tripod of English curriculum: language, literature, and composition. In the late twentieth century, curriculum includes traditional and contemporary themes from works that reflect our global interests and multiculturally diverse classrooms. The personal and linguistic growth of the child,
enhanced by improvised drama, imaginative writing, personal response to literature, and informal classroom discussion, coupled with textual analysis, study of genres, and literary periods, emphasize English as a humanistic subject. Language arts' additional concern with the skills inherent in speaking, listening, reading, and writing relate to the middle school students' needs for learning appropriate expression and response.

In 1983, The National Council of Teachers of English provided a definition of English as: literature (habits, classics, human experience), communication skills (including the use of media), reading (search for meaning, judging literature, functions in life, skills), writing (personal development, techniques and processes of writing, mechanics, speaking (self-expression, group discussion, logical argument), listening (purposes, details, evaluation), thinking (creative, logical, critical), and this division between purposes indicates an uncertainty about whether to teach performance skills or appreciation (McNeil, 1996).

The political nature of curriculum planning in the field of language arts has divided English teachers between utilitarian and humanistic purposes. The new literacy includes all cultures, not just American-British concentration in literature. The teaching of reading comes from different emphases which reflect many diverse goals. Writing in language arts classes is connected to students' own environments, but its importance, worth, and value is connected to goals for emerging writers.

The new literacy includes all cultures, an understanding how language works, and competence in discourse and critical analyses to serve language practices in different communities and situations. The literature study involves core selections recognized for their merit, readings chosen by the teacher as appropriate for local or individual requirements, and recreational readings chosen independently which generate questions and recursive stances: entering the world of the author, attempting to construct meaning from the text, contemplating what one has experienced, and responding to various elements of the text, content, or reader experience (McNeil, 1996).
Interpretation based on personal experiences is more meaningful to the language arts teacher concerned with the new literacy than one single authoritative interpretation of the text.

Writing in language arts classes should flow from a student’s desire and choice, and is connected to issues in the students’ own environments. The importance, worth, and value of student writing is emphasized by beginning student writing in early years because as a process, planning, composing, discussing, revising and editing, parallels the real writing approach of authors. Whole language supports the idea that meaning comes from individual creation, so genre and purpose choice requires exposure to reading and writing from all social and academic cultures.

The teaching of reading comes from different emphases which reflect goals. Word recognition and reading comprehension are taught without considering the purpose for which they will ultimately be used. A focus on the specific kinds of situations where reading skills are necessary reflects a concern for those lacking reading competencies to function in their society. Teaching reading as a conceptual development where experience is key to the process ensures the reader creates meaning from the text. Critical reading requires deconstruction of text.

Directions in reading include whole language where reading is not a discrete skill isolated from speaking, listening or writing, but part of general language development. Interactive view of reading asks the reader to create meaning from a fusion of experience and text. Critical reading requires an understanding and application of metacognitive skills. Literature based reading ensures an amassing of shared content that reflects the traditions of the dominant class. (McNeil, 1996).

The side of education that relies on lecture, note taking, responding in multiple choice answers, repetitive worksheets and student passivity changes when multiple intelligences is applied to a broad range of stimulating curricula by reaching beyond classroom tools to broader methods, materials and techniques. Teaching activities in the
multiple intelligences classroom vary from lecture to cooperative learning, and instructional strategies are as personalized as the students in any classroom. "MI theory represents a model of instruction that has no distinct rules other than the demands imposed by the cognitive components of the intelligences themselves." (Armstrong 1994, p. 57)

The existing challenges of diversity and heterogeneity are most likely here to stay. As grade-level thinking is broken down, we must develop, implement, and evaluate more child-focused and child-sensitive curricular and instructional methods and strategies that encourage teachers and children to achieve their best for the sake of learning (Burchfield, 1996). The Project Approach complements well this view of children and offers the teacher a user-friendly way to engage children in relevant and meaningful units of study (Ibid., 1996).

The concept of tacit knowledge was introduced by Polanyi (1946; 1976). Later Sternberg (1985) and Wagner and Sternberg (1986) used it to describe knowledge that is not explicitly taught or even verbalized, but is necessary for an individual to thrive in an environment. The concept applies in a variety of settings. For example, level of tacit knowledge is an excellent predictor of performance in management (Wagner & Sternberg, 1986). It is also crucial for successful performance in school. "Indeed, our research indicates that it is as good a predictor of college success as are academic types of tests." (Sternberg & Wagner 1989, p.35).

The Yale Practical-Intelligence-for-School (PIFS) curriculum was developed to help students learn the vital tacit knowledge they need to succeed in school. With Gardner’s Harvard University researchers, a joint effort has been made to develop the theory-based curriculum, and practical intelligence for school and acts as a merger between 2 theories of human intelligence: Howard Gardner’s (1983) theory of multiple intelligences and Robert J. Sternberg’s (1985; 1988) triarchic theory of human intelligence (as cited in Sternberg, Okagaki, & Jackson, 1990, p. 36).
The organization of the Yale Practical-Intelligence-for-School (PIFS) curriculum is based upon the 3 kinds of tacit knowledge that Wagner and Sternberg (1986) have found critical to adaptation to any environment: managing oneself, managing tasks, and working with others (Ibid., 1986).

Reconceptualizing instruction, teachers had as a goal creating a gifted curriculum for everyone; they used Frames of Mind as an organizer, and asked students 5 questions to determine outcomes: What have you learned this year about how you learn best? What are some examples of activities in the classroom this year that helped you learn better? Tell me about your class last year; how was it different this year? How did you feel about the differences? What would you want your teachers next year to know and do so that you could be successful? What suggestions would you offer to your teachers to help students learn even more? (Strahan, Summey & Bowles, 1996).

Viewing children through the MI lens meant that teachers are to identify a child’s talent and help nurture it. Rather than focusing on the mismatch between student and school, we focus on the child’s many intelligences and on finding ways to bring them alive. This approach means that curriculum, instruction, and assessment need to be designed to elicit success in all of the areas of a child’s talents, not just the two which correspond most readily with standardized tests (Hoerr, Fall 1994).

Research shows reduced motivation, academic progress, and enthusiasm by fourth or fifth grade students; perhaps if individuals unique intelligences, and therefore multidisciplinary learning was in place instead of learning based on linguistics and math/logical intelligences more interest in school would be maintained. Gardner’s concern that all students do not learn at the same speed or in the same way, requires that distinctive intelligences should be the basis for deciding school programs and structure. His proposals about curricular and cocurricular programs, the structure of school time, and the need for developmental consideration in all teaching, enables all learners to be recognized in schools. The guiding principal is what a student should be able to do, as well
as know, and specialists must, in order to do this, be used differently in schools. An assessment specialist provides regular updated intelligence evaluations of each student’s strengths, weaknesses, and inclinations. These assessments would be made using observations and other valid instruments. These findings would be shared with curriculum and teaching specialists who use them to “broker” with students the most desirable courses and the most advantageous programs for developing dominant intelligences and strengthening those that are weaker (Jordan, 1996). A spectrum of experiences in the curriculum come from non-school enterprises such as museums and business apprenticeships. Models and involvement with “school-community brokers” allow apprenticeships, mentorships, and community organization participation so students can experience beyond the classroom and encourage lifelong learning. Gardner acknowledges, “we have not been cognizant of the ways in which basic inclinations of human learning turn out to be ill-matched to the agenda of the modern secular school.” (Jordan, 1996, p. 32) In a curriculum in which a student is required to pose and solve problems through the manipulation of different kinds of semantic, notational, and symbolic systems, inductive reasoning fosters an independence and confidence absent in the other procedure. Immersion in an issue or work alleviates simplified interpretations of work. Students must see a relevance to themselves in the things they study, and take many viewpoints in assessment of great works. Students should be asked to see work from different vantage points such as historian, novelist, or geographer.

Process folios emphasize growth, not simply acquisition of specific knowledge. These evaluations are a record of the student’s understanding of his or her own progress, teachers’ and specialists’ assessment of mastery of skills and processes in specific domains, and parental communication.

This differentiated view of learning addresses the growth paradigm labeled by Armstrong (1994), in which he recommends a more appropriate replacement for a teacher’s focus from weaknesses to strengths. Remediation is replaced by what he calls “a
varied set of interactions with real-life activities and events.” Mainstream curriculum offerings encourage all students to use materials, strategies, and activities that would benefit students with many intelligences.

Dr. Thomas Briggs in *The Junior High School* published in 1920 (as cited in Lounsbury, 1992, p.14), summed up the middle school concept:

The physical redistribution of the grades seems assured; but if, having accomplished that, schoolmen rest content, they will have missed the one great educational opportunity of their generation for real educational reform. There is a demand for purposes so clear and so cogent that they will result in new curricula, new courses of study, new methods of teaching, and new social relationships—in short, in a new spirit which will make the intermediate years not only worthwhile in themselves, but also an intelligent inspiration for every child to continue as long as profitable the education for which he is by inheritance best fitted. In its essence, the middle school is a device of democracy whereby nurture may cooperate with nature to secure the best results possible for each individual adolescent as well as for society at large.

**Pedagogy, Assessment, and Multiple Intelligences**

Gardner has two dreams: the first is for schools to do away with testing and assess children in more natural ways; the second is for society to recognize a full range of intelligences. With good teaching, Gardner says, individuals can develop and get smarter in each of the 7 intelligences. Tests of IQ and fixed-response tests are so pervasive that schools may have difficulty assigning students to specific programs, determining counseling needs or giving career direction. Gardner believes that testing is predictive for school success only because the items restrict students to using only two skills. Standardized tests do not take into account such factors as motivation and effort which often drive brilliant achievement. Schools fail students when they do not help them to discover and master talents that would benefit society.
Gardner begins building curriculum by defining “end states” or “final exhibitions” which form the basis for curricula and assessment development. A “spiral curriculum” in which “rich, generative ideas are revisited time and again”, should begin early in the students’ careers and enable teachers to revisit the concept numerous times during the school career. This requires continuity across the years, semesters and classes, and a high order of curriculum coordination across the school, “and possibly across the nation.” Gardner has recommended school positions for this purpose: student-curriculum broker and school-community broker. He favors a consensus around concepts and performances that reveal understanding rather than a “canonical list of books or principles.” (Gardner, 1993).

The interdisciplinary approach to teaching as opposed to teaching separate pieces of knowledge or all academic skills, ties the curriculum to the real world especially when it is thematic in nature. It is meaningful and relevant and prepares students for the world they face. “MI theory provides a context for structuring thematic curricula.” (Armstrong, 1994). There are no standard guidelines to follow except the underlying belief that each child learns differently.

Multiple intelligences help focus on integrating learning theory, pedagogy and content. Teaching changes when the concern is what students do with knowledge as well as what they know. How students process information as a result of their cognitive strengths takes the attention away from curricular content to how students learn and process domain-specific knowledge to assess which pedagogies and instructional methodologies would maximize students’ learning potential. Vision, energy and a sense of direction are needed for this creative activity (Kelder, 1994). Teachers must be given opportunities to develop, implement, and evaluate developmentally appropriate curricular and instructional strategies that go beyond the traditional “high-middle-low group” way of looking at, organizing, and teaching the children in their classroom communities. Burchfield and Burchfield, 1992 as cited in Burchfield, 1996).
The Socratic Method is an intellectual exercise in which ideas, not feelings, are debated. The information we receive from our environment may be based on our senses. How we view this information is colored by our feelings and emotions. What we do with this information is or should be based upon reason and logic. A distinction must be drawn between what we feel and what we think (Schoeman, 1994). The Socratic Method does not apply as readily to teaching particular facts as it does to broad concepts or ideas. Together, the teacher and student find the truth. The nature of multiple intelligences, enabling large themes, opens up the possibility of a Socratic approach to teaching. Intellectual inquiry results from a framework of questions posed to answer a question (Ibid., 1994). The student benefits from the teacher applying The Socratic Method: Students are kept on their toes, they see the teacher as a student as well, they feel part of a creative process, they develop reasoning ability, they are not bowed down by what went before, they are less likely to be bored. (Ibid, 1994, p. 20)

Gardner recommends some degree of specialization during the middle childhood years of 8 to 14 after mastering the notational systems of the culture during earlier years. Demonstrations of subject mastery through drill, practice, reflection, self-monitoring, reflection and comparison to others’ work enables them to achieve mastery in a vocational area. With plenty of previous exposure to a range of domains and intelligences in early life, by middle childhood the student can narrow the focus of interest for future study and vocation.

The adolescent’s world becomes wider due to a larger society at hand, higher because developmentally the youth can deal with abstract forms of reasoning, hypothetical and theoretical and speculative thinking. Their world also becomes deeper due to probing into personal issues in a fuller way. The preadolescent interest in facts, rules and skills becomes a value-oriented interest in principles, exceptions to rules, and different points of view.
We must continually examine our philosophies and belief systems about children and teaching and learning to ensure that they are developmentally appropriate and child focused. It will be a consequence that we develop new models of curriculum and innovative instructional strategies for the sake of our children and their learning (Burchfield, 1996).

Gardner’s theory is being considered and put into practice in many schools across the country. Gardner and organizations such as the Galef Institute have created comprehensive ways of organizing curriculum, instruction, assessment, and reporting of children’s progress based on the 7 ways of knowing. Gardner’s theory, along with an acceptance of the belief that children are different, has far-reaching implications for teaching and learning in classrooms and schools where difference is not only valued but viewed as an asset for the community of learners (Burchfield, 1996).

The Project Approach encourages meaningful and relevant engagement in units of study chosen cooperatively by teachers and children, depending upon the needs of the school and school system. The units of study can be extensively interdisciplinary in nature or be adapted to explore one angle of the curriculum if the local school district demands a separate focus on other skills and domains of learning (Ibid., 1996).

The greatest strength of the Project Approach, perhaps, is that it is a flexible and adaptable model and process that can fit with local curricular demands. Katz and Chard (1989) acknowledge that it may not be possible or even desirable to integrate all skills and areas of learning into every unit of study in which we become engaged. The Project Approach is a real-world, user-friendly guide to organizing purposeful, social, active, and engaging units of study that allow children to be involved in making decisions about the direction, implementation, and evaluation of their learning (Ibid., 1989).

The Project Approach is set apart from other related approaches and processes: Children are encouraged to be involved in the discussion and planning of ways to inquire about the chosen topic and in devising methods to investigate the questions generated or
those that arise. The powerful motivators for the children, however, are that they are involved in decisions about the course of study, the topic at hand is relevant, and the children are actively and socially involved in making sense out of the concepts and skills (Ibid., 1989).

Poor middle school readers tend to come from schools, classrooms, and homes that do not view reading as a positive trait. This reader is usually a peer-oriented, highly tactile/kinesthetic, and low visual/auditory learner who needs a great deal of movement while reading. An MI reading curriculum can meet the needs of these students (Melton & Pickett, 1997).

An MI reading curriculum can help students who have limited English-proficient and lack language skills necessary to derive meaning from the printed word. MI curriculum focuses on students' strengths rather than on their weaknesses. Two points are important to remember in middle school reading instruction. First, reading strategies differ with reading purposes, and students who are allowed to select their own material, then given a chance to read silently for a period each day, develop reading skills more quickly than those who are given only assigned reading. Classrooms that are saturated with high-interest books significantly improve low-achieving students' attitudes toward school and reading. Pairing younger children with older youngsters empowered the older children, and they showed improved reading ability and an awakened interest and attitude in independent, pleasure reading. When narrative texts over standard textbooks were chosen, the transitional reading stage due to a lack of a broad base of experiences from which to develop meaning was bridged. Students of this age, needing social involvement, respond to cooperative learning groups for studying reading (Ibid., p. 30)

By the time they reach the middle grades, young adolescents demonstrate a wide range of achievement levels and varied views of themselves as learners. Middle schools have traditionally attempted to meet the diverse needs of students by offering a mixture of enrichment, basic instruction, and remediation. A case study based on Gardner's theory of
multiple intelligences explored the perceptions of students with mild disabilities in an inclusive language arts classroom as their teachers developed this new approach to instruction named Mindful Learning which integrated opportunities to learn through all 7 ways of knowing into the language arts curriculum. They hoped to promote independent, confident thinkers among students with disabilities and to encourage more active involvement in academic tasks within the classroom (Summey & Strahan, 1997). The Mindful Learning unit was organized around Glasser's (1993) control theory based on motivation and choices that people use when making decisions: security, belonging, power, freedom, and fun. Strategies for answering reading comprehension questions were organized around 3 levels of understanding: text explicit, text implicit, and experience based (Pearson & Johnson, 1978).

Inclusive education places an emphasis on improved instruction instead of classifying and labeling students; lowered expectations and poor outcomes of pull out programs, required that instructional practices focus on the instruction that students receive in the general classroom. Instruction, rarely differentiated to meet the specific needs of students with disabilities, did not address deficiencies in reading skills (Summey & Strahan, 1997).

Superficially engaged students relied on others to complete academic tasks. Promoting more active engagement became a focal point for teachers. “Students perceptions of academic tasks and their goal orientations toward them determine the degree to which they are cognitively engaged in tasks” (Summey & Strahan, 1997).

Cognitive engagement, important for students with disabilities, is offered through multiple intelligences. Students who have been traditionally labeled as having learning disabilities experience difficulties with linguistic or logical ways of knowing (Armstrong, 1987 as cited in Summey & Strahan, 1997). Armstrong (1994) proposed that a growth paradigm be used as opposed to a deficit paradigm with students with disabilities because they may affect only a small part of one intelligence, leaving vast regions of learning
potential (Armstrong, 1994 as cited in Summey & Strahan, 1997). Using Gardner's theory, Armstrong recommended cognitive bypassing for students with disabilities; bypass obstacles in one intelligence area, by using an alternative method that takes advantage of their more developed intelligences (Summey & Strahan, 1997). Most students indicated that the culminating skits and the use of music to understand the characters were the most meaningful activities to them. Classroom observations indicated that students were more likely to participate in and complete activities that were "mindful" rather than the typical worksheets that were used in previous classroom assignments. It would seem that the holistic approach of Mindful Learning invited success. Students needed a more comprehensive and individualized approach to reading instruction than was provided (Summey & Strahan, 1997).

English teachers often map out strategies in a linguistic mode that accommodates visual and auditory learners, but responsibilities to kinesthetic learners, those who learn by doing, are often overlooked. Concrete connectives in English instruction allow the kinesthetic learner to develop paper and pen skills; this challenge lies in stretching bridges to conceptual awareness for these learners so they can comprehend the power of language. Video cameras, a great resource for bridging this gap, allow students to work on either side of the camera. Mastery level of understanding can be demonstrated with a camera. Musical interpretation of literature, taking assigned roles to act out in plays, and collaborative interpretations of chosen genre allow kinesthetic learning. Chalkboard pictionary allows students to draw their interpretations of words taken from vocabulary lessons, depicting the metaphorical power of language. Some of the students who perform the best at these tasks often do not do well with paper and pen assessments (Simeone, 1995).

Process drama breaks away from the patterns of question-answer routines and enables movement, visualization and shared interpretation of drama eliciting more engaged and dynamic interpretations. Rogers, O'Neill & Jasinski (1995) suggests that drama allows
students to develop and exhibit a range of skills and to demonstrate literary understandings in “unschooled” ways (Gardner, 1991). These demonstrated understandings become building blocks of new ways of knowing. Literary texts, filled with ambivalence, conflict, multivocality, and new expression of meanings, allows the interpretive process to be fluid, changing, and transformative. Students can move away from desk activity to the creation of new, imagined contexts that draw on the reader’s worlds, and allow these worlds to be examined in other ways. Students must draw on experience to add meaning to their understanding of the drama. Students, asked to discover and display about the play’s topic or theme, must develop chronology and predict outcomes, all the time expanding their perception of the play. In short, the students are drawing on a range of “intelligences” to create meanings across the worlds of the drama. Lively and engaging dialogues, student empowerment to question, challenge, interpret and reflect on the themes of literary works, and permission to learn and to display these learnings in multiple and distinctive ways develop rich understandings (Rogers, et al, 1995).

Tucker (1995), notes Ernest Hemingways’ touting of conscious observation as a prewriting activity, and he also made his greatest artistic breakthrough contemplating the paintings of Cezanne in the Louvre. It is not enough to say “start writing”. There are better ways to engage students in writing. Visualizers use visual-spatial symbols, and delay the moment when drafting begins like an incubation period. Extended time for composing is essential, time must intervene between drafts, and time between writing episodes is essential. Verbalizers usually compose a draft at one sitting; neither group made deep revisions that affected what they had to say in their first drafts. Composing writing texts is very individualistic. Composing style could be made compatible with the cognitive strengths of the writer. The assessment of cognitive profiles has been a goal at Gardner’s Project Zero for decades, and Gardner and his associates have developed informal measures that classroom teachers can use. A pluralistic theory of intelligence must
presume many possible composing styles, but not beyond the scrutiny of a concerned, thoughtful observer (Tucker, 1995).

Gardner's work enabled justification of non-linguistic activities with a powerful, comprehensive theory of psychology. He developed his theory through his work as neurologist and through his extensive reading of cultural history. According to Gardner, people of western culture are very limited in how they view the idea of intelligence. Westerners have been seduced by the notion that intelligence can be measured quantitatively through standardized tests; Gardner has facetiously referred to this approach as being “Westist, Testist, and Bestist”. Questionable assessment tests have been accepted as giving “true” achievement levels (Smagorinsky, 1995).

From Gardner's perspective standardized tests are thoroughly misguided in the breadth of thinking they test. Gardner has argued extensively that standardized tests-and schools in general-tend to focus on two types of thinking even though the questions asked present students with reactive rather than generative problems. Schools not only allow standardized tests to assess them according to these limited dimensions, they also follow suit with curriculum development and with emphasis on Math and English which focuses on analytic approaches to thinking about literature. Gardner maintains that in taking this narrow approach schools ignore reality, both historical and contemporary. Historically, the linguistic and mathematical/logical intelligences so exclusively valued by modern American schools have figured peripherally in the essential work of other cultures (Ibid., p. 20).

Smagorinsky (1995) observed that his students' interpretations of literature, when drawn or danced, engaged many of the same developmental processes they would experience when writing, and perhaps engage in other important processes as well that were not available through writing. Students drew on a wealth of personal experiences to inform their reading of the story and to compose their texts; they empathized with the characters by relating parallel experiences. They imbued their texts with personal meaning, and they represented their understanding symbolically. Further, students drew on
previously read texts both to inform their reading and to create their own texts. They drew on historical knowledge to interpret the story and create their own texts. They produced compositions that were sensitive to the mood and tempo of the story. They generated alternative endings to the story through their interpretations. Finally, students viewed their work on this text as part of a larger composing process. They recognized the ambiguity of the story, their own texts, and human experience, and they strove to communicate their understanding of the story to others. Additionally, the process of creating these interpretive texts appeared to serve a dual purpose: the students' thoughts both shaped and were shaped by the texts they composed. In other words, 2 simultaneous processes took place: students' thoughts about the story served as the material from which they developed their interpretations and more significantly the process of composing their interpretive texts served to change the way they thought about the story. That is, the process of artistic composing served an instrumental purpose in students’ thinking about the story, enabling them to think through their interpretations in such a way that their ideas developed in complexity through the act of composing (Ibid., 1995).

Non-written texts are capable of providing the same potential for enabling the construction of meaning as written texts, yet their production is rarely sanctioned in English/language arts classes. Throughout history artists have engaged in "transmediation" (Subor, 1984) that is, they have interpreted one type of text through another and have been culturally valued as means of constructing meaning and have been respected and revered by the public as well as by the artists themselves. The appreciation of non-written interpretations of life and literature has not, however, broken through the barriers of the English/language arts classroom, where writing has established exclusive rights as a unique mode of learning; such a view is not simply wrong, but potentially disabling to students as well when, as Gardner has argued, students' most potent means of thinking may come through areas other than the logical and linguistic realms (Ibid., 1984).
Instructional change cannot be done piecemeal; it must be part of a greater change in how we view teaching and learning, so the teacher’s effort to make wholesale changes in the conceptions of classroom process will make the difference. The introduction of multiple intelligences activities must be accompanied by large changes in the values of the classroom, and concomitant changes in what students believe to be appropriate and acceptable ways of thinking and communicating in an English class.

Multiple intelligences activities like “writing to learn” opportunities, small groups, portfolios, and other pedagogical methods, are not in and of themselves educational panaceas, but activities that may present excellent learning opportunities when used thoughtfully in the midst of a comprehensive reconceptualization of teaching and learning (Ibid., 1984)

The move away from standardized measures of achievement and ability to authentic assessment techniques, including portfolio and performance-based assessment, raises questions about the reliability and validity of a battery of instruments based on MI theory, including teacher checklists and performance-based assessment activities. Results suggest acceptable evidence of reliability, but raise questions about the validity of the assessments. Gardner’s theory can be translated into reliable assessment instruments, but creating valid assessments is quite difficult. Adults who administer and score alternative assessments may exhibit a bias toward linguistic and logical-mathematical intelligence, which results in measures with little construct validity outside of the assessment of verbal and mathematical skills, so intensive staff training is essential (Plucker, Callahan & Tomchin, 1996).

The more broadly accepted [alternative assessment] becomes, the less frequently it will be challenged” (Worthen, 1993, p. 447). This lack of attention will eventually slow the development of quality alternative assessments and lessen their long-term impact upon education (Ibid., 1993).
Maker, Nielson & Rogers (1994) at Project Discover are developing a series of MI-based performance assessments; similar projects are underway across the country (Gardner, 1993; Maker, Nielson & Rogers, 1994).

Establishing evidence of concurrent validity of new assessment tools based on alternative assessments of intelligences presents a difficult challenge to test developers and educators who wish to use the assessments (Plucker, et al., 1996). Gardner (1983) is critical of traditional assessment tools as being too narrowly conceived to capture the richness of aptitude and performance, which creates a problem concerning the validity of multiple intelligence based assessments. Gardner and Hatch (1989) address this issue:

Some critics have suggested that MI theory cannot be disconfirmed... If future assessments do not reveal strengths and weaknesses within a population, if performances on different activities prove to be systematically correlated, and if constructs (and instruments) like the IQ explain the preponderance of the variance on activities configured to tap specific intelligences, the MI Theory will have to revamped. (p. 8)

Performance assessments used for high-stakes purposes such as identifying potentially talented students need to be reliable, valid, appropriately normed, and equally fair to students regardless of gender and ethnicity. Educators using MI theory, alternative assessments, and combinations of the two should subject the programs to rigorous evaluation:

[S]uch basic assessment issues as validity, reliability, comparability, and fairness need to be uniformly addressed for all assessments because they are not just measurement principles, they are social values that have meaning and force outside of measurement wherever evaluative judgment and decisions are made (Messick, 1994, p. 13).

Pilot programs under close supervision and direction from Gardner and his colleagues include: Project Spectrum which is studying cognitive strengths and capabilities
of preschoolers, Arts PROPEL a collaborative project with Educational Testing Service and the Pittsburgh Public Schools which follows middle and high school students through three forms of artistic expression to determine how students learn and how their achievement can be assessed, and the Practical Intelligence for School (PIFS) project undertaken jointly by Gardner and Robert Sternberg of Yale. Students in this project are from urban and rural schools. They are asked to identify and use their intellectual strengths and abilities to complete assignments.

To Gardner (1983) much of what passes for serious academic learning in school is simply a barrier that keeps many individuals from putting their intelligences to use. Students leave school with a repertoire of trivia. Most schooling does not empower students to act on their intelligences that all students possess to some extent, where the combinations and degrees of each intelligence is different. Schools do not transform children’s mind sets, but they should move the students to learn how to unlock meaning from knowledge coded in notations and symbols.

It’s important that schools help people feel more “engaged and competent, and therefore more inclined to serve society in a constructive way.” And that, he says, might be the last best thing schools can do for students (Black, 1994, p. 27).

Project Spectrum codirector David Feldman of Tufts University has developed a number of curriculum activities and assessment options suited to the “child-centered” structure of many preschools and kindergartens. More formal assessment of intelligences is possible through detailed scoring systems that have been developed for research purposes. A related instrument, the Modified Spectrum Field Inventory sampled several intelligences in the course of two one-hour sessions and revealed that children tested did have distinct intellectual profiles, but further investigations need to be conducted to establish norms, to identify strengths and weaknesses consistently, and to examine fully the effects of age and gender on the Spectrum activities. The measures must involve materials that are appealing and familiar to children; there is little precedent for developing scoring
systems that go beyond linguistic and logical criteria; and materials appropriate for one age group, gender or social class may not be appropriate for others (Gardner and Hatch, 1989).

Bruce Campbell’s (1992) model bases the curriculum on student interests. Seven learning centers, a flexible schedule, student empowerment, teacher as facilitator, and implementation of multiple intelligences allow students to develop many skills by learning in diverse modes. The basics and other subjects are taught every day, and students are kept at appropriate skill levels; teachers work with students on a day-to-day basis. Campbell’s (1992) findings included: students developed increased responsibility and independence during the year, students identified as serious behavior problems showed rapid improvement All students developed and applied new skills, cooperative learning skills improved in all students, and academic achievement improved as measured by both classroom and standardized tests.

Guskin, Peng & Simon (1992) examine 5 patterns of giftedness that emerged from his look at research: analytic or cognitive ability, social skills, creative arts, verbal ability, and motor skills. Some of these patterns overlap with Gardner’s multiple intelligences and were used to determine whether the categories identified were taken into consideration when deciding on giftedness, a classroom teacher’s decision. The finding suggest that due to large classes and constraints upon the content and methods of instruction, teachers have little opportunity to learn about the diverse accomplishments and talents of their students. Explicit information about the unique experiences and abilities of their students is necessary information for teachers (Guskin, et al, 1992, p.32).

Teachers disagreed in relation to students in the creative arts, most often recommending special schools, while advanced school work was recommended for those with analytic or verbal ability, and those with social or motor skills were not thought to need much special programming (Ibid., 1992). Teachers predicted that those with motor or creative arts skills would not be as successful as those with verbal, analytic, or social
skills. Teachers are sensitive to multiple intelligences if they are exposed to a sufficient range of information about individual students, and this information about ability patterns is of more importance than gender, social class, and racial data (Ibid., 1992).

Guskin, Peng, and Simon (1992) found that teachers’ reactions to ability patterns appeared to be magnified when the pattern was inconsistent with race, gender, or social class stereotypes. The research also indicated that if teachers are exposed to an adequate range of information about individual strengths, this will allow them to be sensitive to MI. In general, a teacher’s job entails identifying the strengths of her students in order to build upon them. However, this research indicates that teachers are not significantly reacting to the strengths of their students. When they are exposed to relevant information about students’ accomplishments, teachers are not sensitive to multiple intelligences of students nor biased against recognizing these talents in groups underrepresented in gifted programs (Guskin, et al., 1992).

MI respects a more localized, rather than global orientation of intelligence when dealing with different cultures; it allows for cooperative learning, self-directed learning, leadership roles, and greater academic achievement and retention due to enjoyment of the activities. The only way MI can be validated and successful is for educators to begin to open their minds to the possibilities surrounding this concept (Smerechansky-Metzger, 1995).

The research shows reduced motivation, academic progress, and enthusiasm by fourth or fifth grade students; perhaps if individuals unique intelligences, and therefore multidisciplinary learning was in place instead of learning based on linguistics and math/logical intelligences more interest in school would be maintained. Gardner’s concern that all students do not learn at the same speed or in the same way, requires that distinctive intelligences should be the basis for deciding school programs and structure. His proposals about curricular and cocurricular programs, the structure of school time, and the need for developmental consideration in all teaching, will enable all learners to be
recognized in schools. The guiding principal is what a student should be able to do as well as know, and specialists must, in order to do this, be used differently in schools. An assessment specialist provides regular updated intelligence evaluations of each student's strengths, weaknesses, and inclinations. These assessments would be made using observations and other valid instruments; these findings would be shared with curriculum and teaching specialists who use them to "broker" with students the most desirable courses and the most advantageous programs for developing dominant intelligences and strengthening those that are weaker (Jordan, 1996).

A spectrum of experiences in the curriculum come from non-school enterprises such as museum visits and business apprenticeships. Models and involvements with "school-community brokers" allow apprenticeships, mentorships, and community organization participation so students can experience beyond the classroom and encourage lifelong learning. Gardner acknowledges, "we have not been cognizant of the ways in which basic inclinations of human learning turn out to be ill-matched to the agenda of the modern secular school" (Jordan, 1996, p. 32). In a curriculum in which a student is required to pose and solve problems through the manipulation of different kinds of semantic, notational, and symbolic systems, inductive reasoning fosters an independence and confidence absent in the other procedure; immersion in an issue or work alleviates simplified interpretations of work. Students must see a relevance to themselves in the things they study, and take many viewpoints in assessment of great works. Students should be asked to see work from different vantage points such as historian, novelist, or geographer.

Process folios emphasize growth, not simply acquisition of specific knowledge. These evaluations are a record of the student's understanding of his or her own progress, teachers' and specialists' assessment of mastery of skills and processes in specific domains, and parental communication.
This differentiated view of learning addresses the growth paradigm labeled by Armstrong (1994), in which he recommends a more appropriate replacement for teacher focus from weaknesses to strengths. Remediation is replaced by what he calls "a varied set of interactions with real-life activities and events." Mainstream curriculum offerings encourage all students to use materials, strategies, and activities that would benefit students with many intelligences.

Transformation of Schools

Transformation of schools needs joy, quality, imagination and spirit, making schools more productive and more humane. No shortage of specific methods of improvement, broad outlines for improvement, and the short-lived improvement they produce is there if there is not thoughtful synthesis of theory and practice at the school level, a holistic approach to avoid piecemeal implementation.

What is required to improve schools is a long view, a sustained commitment, an intensely thoughtful approach, and a truly spiritual, egalitarian attitude. All this must be fused with definitive, practical, user-friendly systems that can be implemented in a variety of ways. Educational transformation, not reformation is required that is whole, thoughtful, humane, rigorous, idealistic, and practical; sound theory and proven practice or pragmatic idealism. We must move from the narrowly dualistic to the broadly holistic (Raebeck, 1992).

Our thinking is very much structured by the mechanistic, dualistic deterministic patterns popular in the West since Aristotle (Raebeck, 1992). We must develop "a high tolerance for ambiguity" (Tom Peters as cited in Raebeck, 1992). The brain is a holographic phenomenon that deals in parts and wholes, and all aspects of reality simultaneously (Raebeck, 1992). McChuhan (1965), predicted the demise of the schoolroom seen in the nineteenth century, as a valid system (Raebeck, 1992) High interest, sustained commitment and great challenge must be realized in the classroom.
Elements seen in the best middle-level schools are learning, the whole-child approach, advisory programs, integrated curriculum, block scheduling, an exploratory arts program, cooperative, competitive and autonomous activities, dynamic, engaging teaching/learning experiences, committed, and a visionary leadership/staff (Raebeck, 1992).

Howard Gardner (1983) says from age 8 to 14 it is recommended to begin the student in some area of specialization. The natural learning process ends at 7. The first years of school the student masters the notational systems of the culture.

Constructivism is the invention or creation of knowledge by children interacting within themselves and with their environment. In the invention of knowledge, the child is able to see relationships, to problem solve, to re-invent, to use logical thinking, and to make decisions (Berger, 1996). When language learning, a child constructs language through the environment, and the child takes time to acquire the language.

Many areas of inquiry that previously have been considered to be outside the scope of education, but which today contribute some of the most valuable insights to our field include anthropology, communication studies, critical thinking, gender studies, information theory, sociolinguistics, psycholinguistics, and problem solving strategies. A departure from traditional hypothesis-testing, laboratory approach methodologies, as well as from case study analysis, to more frequent use of descriptive and naturalistic research models and other ethnographic approaches is occurring (Morin, p.163).

School reform efforts of the last decade have produced arguments over the content of the curriculum. Shaped by the roles assigned to schools in theory, historical positions as the developers of intellectual competence, the teachers of respect for institutional authority, and the trainers of vocational competence, that debate has centered largely on the intellectual content of school learning. Acrimonious debate has occurred over the relative value of different types of learning, with some writers even characterizing it as a struggle between useful and ornamental knowledge (Vallance, 1985). Almost absent from
most reform discussions, though, has been any consideration of the role of the school as a principal socialization agent in a transitional society (Johnston, 1992).

Increasingly, the school is in the unique position of having both the resources and the compelling self-interest to assure that children are socialized, appropriately, into both vocational competence and a productive adulthood. The resources are those tangible elements that an affluent society can provide for specialized purposes: money, personnel, and technology. (Johnston, 1992).

To a large degree, then, it is the school’s ability to make itself indispensable in a transitional society where the obligations of adequate socialization are falling more heavily on institutions that will determine its continued existence in a form that most of us will recognize.

In rethinking educational reform, it will be necessary to examine the content of schools’ socialization curricula as well as their intellectual and vocational ones. As a minimum, it appears that this curricula might focus on one major domain, that is the production of the most important outcome, which is children who are bonded to theory, community, to each other, and to habits of productive effort (Johnston, 1992).

Spear (1992) asks the curriculum question concerning relevance to the present and future of grouping practices. He discusses appropriate grouping practices and looks at different ways of addressing individual needs, differentiating assignments, and learning strategies. Grouping practices, based on the belief that ability grouping helps students learn, is challenged in the belief that ability is varied and should not be limited to the commonly held definition. If Gardner’s notion of intelligence is applied to the practice of ability grouping, it would bring an increasingly complex set of variables, which would render ability grouping of students virtually impossible. It also points to the limitations of present grouping practices that frequently use only one criteria for grouping. Intelligence can take many forms; all of which are legitimate and important in our society and in our schools (Spear, 1992).
Gardner (1993) says of intelligences,
I think all 7 of the intelligences have equal claim to priority. In our society however, we have put linguistic and logical mathematical intelligence, figuratively speaking, on a pedestal,...if you do well in language and logic you will do well in IQ tests and Scholastic Aptitude Tests, but whether you do well once you leave school, is probably going to depend as much on the extent to which you possess and use the other intelligences...The purpose of school should be to develop intelligences and to help people achieve vocational and avocational goals that are appropriate to their particular spectrum of intelligences. People who are helped to do so, I believe, feel more engaged and competent and therefore more inclined to serve the society in a constructive way.... The design of my ideal school of the future is based upon two assumptions, the first is that not all people have the same interests and abilities, not all of us learn in the same way.... The second assumption is one that hurts, is the assumption that nowadays no one person can learn everything there is to learn.... choice is therefore inevitable....It is of utmost importance that we recognize and nurture all of the varied human intelligences, and all of the combinations of intelligences. We’re all so different largely because we are different combinations of intelligences. (Spear, 1992, p.255)

L.L. Thurstone in 1938, introduced multivariate analyses for measuring intellectual functioning because he did not believe that a single factor labeled the g factor, could measure a set of abilities, and multivariate tests to measure separate abilities was born. Gardner has followed a similar pattern but changed the semantic applications (Morgan, 1996). Other IQ tests, the revised Stanford-Binet, The Wechsler Intelligence Scale for Children-Revised in WISC-III and WPPSI-R demonstrate an improvement in instruments designed to measure intellectual functioning, but alternative approaches to assessing
intelligence, including the work of Gardner, offer commendable attempts to expand the number of ways that intellectual functioning can be examined and appreciated in the performance of learners.

Gardner (1993b) discusses the third wave of educational reform and his hope that it will address what we are trying to achieve in our schools. All researchers disagree on the issue of what kids should learn and how we should teach it. Gardner answered this way:

Schools should try to educate for understanding, which I define as having a sufficient grasp of concepts, principles, or skills so that you can bring them to bear on new problems and situations. There’s ample evidence in every corner of the curriculum that schools aren’t achieving this all-important goal. Curiously, this failure is not so much deliberate as unwitting.

Knowing how kids learn is key (Gardner, July 1993b).

Children with their intuitive understanding, persist in understandings received as young as 5 years old. Some students at the end of academic careers reverted to those intuitions when education failed them in giving answers to academic questions. “Test-text context” or reading a text, memorizing what’s in it, and taking a test that asks what has been learned when answered correctly, assumes an understanding; nobody asks that application of understanding to other situations to prove understanding. This phenomenon Gardner calls the “correct-answer compromise” (Gardner, 1993b). “Pressure for coverage”, the greatest enemy of understanding, and “short-answer assessments”, the result of coaching on facts, stand between schools and educating for understanding.

Cognitive Freudianism, the mind of the child in the cognitive realm when answers needed are not understood and require a reversion to intuitive explanation, occur with adults who suffer inadequate instruction and time to learn when the subject is counterintuitive.

“Institutional constraints” or the laws and regulations inherent in school culture, coupled with disciplinary constraints that require a student to think critically in different disciplines, not just generic ability to think critically, keep the student away from 3 kinds of
understanding: intuitive understanding of the child, the scholastic learner who possesses
the knowledge that can be used in very explicit contexts, and the knowledge necessary to
know when to use expertise and when not to use it. That expertise constitutes
understanding (Ibid., 1993b).

Apprenticeships, children’s museums, and adoption of multiple perspectives when
teaching, can result in true understanding. Project Zero, exploring understanding, has
found the importance of “generative ideas” or ideas that are central to a topic and that will
genrate students’ interests. Understanding goals, or a general goal for a course or for a
discipline, accompanied by performances of understanding that involve daily assessment of
what is known through debate, analysis, and criticism and teachers and administrators who
believe in this approach, will enable this difficult process (Ibid., 1993 b).

Project Spectrum developed intelligence-fair assessment measures to identify and
describe the various intellectual strengths exhibited by students, and the evaluation
measures doubled as part of the classroom curriculum. “As in other initiatives, we
deliberately blur the traditional line between curriculum and assessment, thus enabling
students to be assessed in natural, familiar, and non-threatening contexts” (Blythe &
Gardner, 1990, p. 34).

Carried out in collaboration with Robert J. Sternberg at Yale University, the
Practical Intelligence for Schools project (PIFS) has developed meta-curricular units that
can be infused into the curriculum typically taught in middle school classes. The units
encourage students to identify their own intellectual strengths and abilities and to draw on
them as they tackle academic problems (Blythe & Gardner, 1990).

Blythe and Gardner (1990) offer a vision of an MI school that embraces MI theory
at all levels of operation. No such school exists as yet with the commitment to fostering
students’ understanding in several core disciplines and the use of that knowledge to solve
the problems and complete the tasks that they may confront in the outside community.
The school seeks to encourage the unique blend of intelligences in each of its students,
assessing their development regularly in intelligence-fair ways. The school draws
inspiration from the educational successes of non-school enterprises. Modeling the fresh
and engaging approach of children’s museums, the school creates an atmosphere in which
students feel free to explore novel stimuli and unfamiliar situations. In the spirit of
traditional apprenticeships, it promotes students’ sustained and guided efforts on
individual projects. Students and teachers collaborate in an environment that is at once
unconstrained and purposeful (Blythe & Gardner, 1990).

In the mornings students study the traditional subject areas but in untraditional
ways. Almost all the work in mathematics, social studies, reading and writing, and science
takes the form of student projects. Students explore particular aspects of material in depth,
addressing problems that confront professionals in the discipline. Students work through
these projects, keeping their drafts, revisions, final products, and observations in a
portfolio or “process-folio”. This documentation of the student’s creative growth serves as
a catalyst for her own reflections on herself as learner and fledgling artist. The student’s
work is assessed by examining the final product, her thinking about the final product, and
her plans for subsequent projects (Blythe & Gardner, 1990).

The second half of the day is a natural extension of the first. Excursions to the
community for further contextual exploring and learning, unlike field trips, are repeated
over the course of a year so students can continue projects begun in previous visits.
Teachers prepare students for these experiences by planning related in-class projects and
discussions and debriefing afterward in parallel ways. At the end of the year, parents
receive a short essay detailing the child’s intellectual profile, along with suggested home or
community activities that might foster growth in areas of particular strength or weakness.
Reports, video documentation of the students’ projects, and a record of the students’
preferences are used to choose 3 apprenticeships when the child reaches third grade.
Mornings are spent on basic core curriculum activities, and afternoons are spent pursuing
apprenticeships in the form of a physical activity, an academic discipline, and an art or craft (Blythe & Gardner, 1990).

The potential of multiple intelligences for schools is great because it is not a curriculum, and each school’s implementation can be culture-specific, context-specific, and school-specific. Faculty members working together may create strategies for their unique teaching situation, and this personalized, individualized education can reflect on teachers and students well (Hocrr, 1996).

**Indianapolis Public Schools’ Key School and The Key Renaissance Middle School**

“Virtually thousands of workshops have been given to school staffs on applying MI theory in classrooms, and at least one school, the Key School in Indianapolis, was designed from the ground up on the MI theory foundation established by Gardner” (Levin, 1994, p. 571).

The Key School, a K-5 magnet school in the inner city of Indianapolis, and the Key Renaissance School, a middle school extension of the Key School are schools of choice; the student population is selected from an applicant pool. Currently there are 100 students in the Key Renaissance School: 53% are Caucasian; 44% are African-American; and 3% are other. 42% of the students are on free or reduced-price lunch (Bolanos, 1994). At the Key School, Gardner’s *Theory of Multiple Intelligences* is a filter for much of the collaborative work; the 7 areas of intelligence are of equal importance for all students, and the focus is on a student’s strengths rather than weaknesses.

Curriculum and instruction is theme-based with the entire school community contributing to the conversation about possible themes. Wednesday afternoon planning sessions are the forum for sharing ideas during the implementation phase, which lasts for 12 weeks. Student projects should reflect the interests of the student and reveal the development of the student’s intelligence. Projects continue throughout the 13-year continuum of primary, intermediate, middle, and high school; the project serves as an exit-level performance at the high school level. During the high school years, the major
project is required each semester to demonstrate the student’s ability in areas called the
“human commonalities” by Ernest Boyer: shared life cycle, use of symbols, membership in
groups, values and beliefs, sense of time and space, producing and consuming, relationship
with nature, and sense of the aesthetic (Bolanos, 1994).

Community service is introduced at the middle level to prepare students to become
future leaders by learning to provide service for the common good. Pods offer enrichment,
not remediation in a chosen course, and at the middle level the teacher of the pod elective
class is also the adviser to the individual students in the group. Pod group members plan
and implement the community service projects and work together to raise issues and to
participate in the democratic process. Volunteer mentors give each student a specific
amount of time that hopefully evolves into an apprenticeship at the high school level
(Bolanos, 1994).

All classes are heterogeneously grouped, and students stay in the same class for 3
years; the grouping pattern is 5, 6, and 7 year olds at the primary level; 8, 9 and 10
year-olds at the intermediate level; and 11, 12 and 13-year-olds in the middle school. Over
3 years with the same teacher gives students the opportunity to experience all the familial
roles of the child: oldest, middle and youngest (Bolanos, 1994).

Developmental performance descriptors are the criteria for assessment at the Key
School. Patterned after a continuum theory of human development proposed by David
Feldman of Tufts University (Bolanos, 1994), criteria are written at three levels: universal,
cultural, and discipline-based. All the developmental performance descriptors are written
in terms of how the student applies knowledge; the descriptors are listed for all subject
areas and their sub-categories on the progress report. Assessment does not compare one
student to another; it is non-competitive. Teachers note if the student is making slow,
steady, or accelerated progress. Intrinsic motivation is a critical element in the Key School
culture. No extrinsic rewards are offered to the students. All the students are expected to
attain the school cultural level performance in all the applied areas before they advance to
the middle grades, and the beginning novice stage of the discipline-based level before they are permitted to advance to high school (Bolanos, 1994). Video portfolios provide exemplars of best work across the 7 areas of intelligence.

Applying Senge’s (1990) 5 aspects of a learning organization, each teacher must reach a stage in professional development where personal mastery is real, and each teacher is expected to have a vision of what is to be accomplished. These educators are expected to address these questions: What does every child need to learn? What should be taught and what is the best way to teach it? Who are the legitimate collaborators in the teaching/learning process? How will all this be evaluated? How will we be held accountable?

To give more than lip service to multiple intelligences theory requires an investment in a staff that not only is qualified to teach the particular disciplines, but a schedule allowing adequate time for them to teach what they know. The staff includes more specialists than normally is the case so the schedule is balanced to provide equitable time to all students with instruction across the 7 areas of intelligence. The Key School has equal emphasis on the 7 areas of intelligence, theme-based interdisciplinary curriculum, multi-aged, heterogeneous classes, projects, video portfolios, authentic assessment, and exit-level performance standards. Two specific strategies at the high school level help students become community leaders: requiring apprenticeships in a chosen area of strength and meeting a set of 8 performance standards to graduate. A profile portfolio must show their participation and applied knowledge regarding eight human commonalities identified by Ernest Boyer as the goals of general education: shared life cycle, use of symbols, membership in groups, values and beliefs, sense of time and space, producing and consuming, relationship with nature, sense of the aesthetic (Bolanos, 1994).

Criticism, Questions, Observations, Responses of to Multiple Intelligences

Perhaps the first thing to note about the research in Multiple Intelligence: The Theory in Practice (1993a) is that it addresses the practical problems of school
implementation. The idea Gardner developed that intelligence requires the approbation or acknowledgement of some population and cannot be self-proclaimed; the manifestations of any of the 7 types of intelligence he identifies appear within some kind of symbol system and that those symbol systems themselves function within some domain, are according to Eisner (1994) extremely reminiscent of earlier work done by psychologist Morris I. Stein and Shirley Heinze (1960) when they were addressing the nature of creativity.

Over thirty years ago, they said that a creative product is a novel product that is useful, interesting, or satisfying to some group in some point in time—their point being that creativity could manifest itself in the creation of useful products, interesting theories, and satisfying works such as poetry, painting, or music and that the assessment of the value of such works needed to be made by people other than those who made them. In addition, they pointed out that while the value of some works is recognized by groups at the time at which they were made, many other such works may be initially reflected only later to be accepted (Eisner, 1994, p. 556).

Eisner (1994) says Gardner’s work participates in a tradition of scholars to recognize the conditions needed to identify socially valued products and to acknowledge differences among people; differences in the ways intelligence is manifested received earlier recognition before Gardner related in a quote from John Dewey’s *Art as Experience* (1934):

> Any idea that ignores the necessary role of intelligence in production of works of art is based upon identification of thinking with use of one special kind of material, verbal signs and words. To think effectively in terms of relations of qualities is as severe a demand upon thought as to think in terms of symbols, verbal and mathematical. Indeed, since words are easily manipulated in mechanical ways, the production of a work of genuine art
probably demands more intelligence than does most of the so-called
thinking that goes on among those who pride themselves on being
‘intellectuals.’

Eisner demonstrates that Gardner is not the first to point out differing abilities in
problem solving, but he has, in Eisner’s opinion, been most responsible for heightening
public and professional awareness of this fact. The strong desire to find a common ability
called “g” and the belief that intelligence is fixed is, when tied to biology as Gardner has
done, necessarily determined by conditions surrounding learning, and determined by
educators’ efforts to change the contexts of learning. “It is far from clear how fixed the
biological underpinnings of an intelligence are” (Eisner, 1994). Eisner sees Gardner’s
work as a correction to notions of human ability that pervade education today since “the
variety of ways people can contribute are wasted within the present system” (Ibid., 1994).
An equitable approach to education that leads to new research have been provided by
Gardner.

My hope is that those prescribing uniform national standards, related to
uniform national goals, assessed by uniform national tests, will rethink the
implications of their own ideas in light of the perspectives that Howard
Gardner has provided, It would do us all a whole lot of good (Eisner,
1994, pp. 559-560).

Sternberg (1994) hoped for more tests of Gardner’s theory so “it would then be possible for both theorist and critics to become more concrete” (p. 561). His concern extends to educators who may accept Gardner’s theory as the “new panacea’ as was Bloom’s taxonomy some years back” (p. 561) who in the end will return to the three Rs after having high expectations from a theory that may not deliver. With no new evidence of the validity of the theory, Sternberg refers to other criticisms leveled at the theory previously, but continues that, basically, he likes the theory because it contributes a valuable service to our thinking about intelligence because we need to think about abilities
more broadly than we have. His belief that school reform is possible only when the psychology of the child is taken into account is addressed by Gardner's theory, but he also believes that formulating the problem of educational reform in terms of the whole child instead of in terms of hypothetical structures of abilities will produce superior outcomes. He proposes 10 reforms:

1. We need to move away from a conception of intelligence as constituting a fixed set of ability, regardless of the number, and toward a conception of intelligence as involving capitalization on strengths and compensation for and remediation of weaknesses.

2. We need to emphasize effort and each child's working up to his or her own potentials.

3. We should set high standards for our children and be demanding of them in what we expect from their schoolwork.

4. We need to take into account children's styles of learning and thinking.

5. We need to show children explicitly how they can use what they learn.

6. We need to encourage our children to take sensible risks.

7. We need to take maximal advantage of children's interests.

8. An expert is not the person who knows the most, but the person who best uses what he or she knows.

9. Do not look into predictive tests.

10. There are no panaceas.

Using our common sense to arrive at the most effective educational opportunities is, to Sternberg, what must happen now to improve the teaching and learning in our schools in addition to emphasis upon how children learn and think rather than on administrative structures.

Levin's (1994) concerns for Gardner's work on multiple intelligences addresses the problem that the chapters in the book, Multiple Intelligences: The Theory In Practice, are primarily focused less on schools and further development of the theory and its
possible uses and applications; a more accurate subtitle would have been “implications for practice” rather than applications to practice (Levin, 1994).

Fundamental organizational issues and assessment issues arise from his theory; Gardner’s own view about what a school might look like within an MI framework is well explicated. Group work and social interaction are necessary to an MI approach, but a uniform experience for all children is not. Special adult roles in school are needed, but no chapter develops in a full and coherent way such essential guidelines for practice as to how the school and classroom would be organized, how the adult specialists would interact and what training is required, how the school would coordinate the floes of assessment with curriculum and community brokership. Roles of school staff, parents, and students in making decisions when there are 2 differing points of view, and what is the balance between individual-centered classrooms and schools and a focus on common concerns and community? (Levin, 1994, p. 573)

Progressive education, “less a failure of ideas than a failure of implementation” (Ibid., 1994) is, according to Levin, a lesson for us. Homeostasis of school culture can be altered if the ideas and visions become a routine part of the educational experience of our children. Collaboration with schools to take responsibility for the actual changes will create a new reality. The expert and the school must work together and jointly take responsibility for what happens: “Precisely what is needed is for Gardner and his team to develop and replicate schools that employ the MI framework in their daily practices” (Ibid., 1994). Where, asks Levin, is the evidence of what has happened when MI has been applied in ordinary practice.

Perhaps we will learn more for the Authentic Teaching, Learning, and Assessment for all Students (ATLAS) Project in which Gardner is a coinvestigator with James Comer, Theodore Sizer, and the Education
Development Center. ATLAS is supported generously by the New American Schools Development Corporation (NASDEC) and is working with 3 school districts. Exactly how MI theory will enter the ATLAS model and how it will be used to transform project schools may answer some of these questions (Levin, 1994, pp. 574-575).

As scholars who have themselves trafficked in both theory and practice, Eisner, Sternberg, and Levin are appropriate commentators on this work. Eisner approaches the assignment from his vantage points in creativity and the arts, and with his special sensitivity to historical, philosophical, and contextual issues. Sternberg writes from his position as an innovative theorist of intelligence and as one who has also begun to work directly in American public schools. Levin, an authority in the economics of education, has spearheaded the important and innovative program of accelerated schools, which now includes in its ranks several hundred institutions all around the country (Gardner, 1994).

Several intelligence and measurement specialists have cautioned educators that MI theory still has relatively little research support (Matthews, 1988) and logistical issues such as increased cost, the need for intensive teacher/observer training, more involved scoring, balance of breadth and depth of coverage, and collection of assessment materials are frequently mentioned in discussions of potential problems with performance-based assessment (Plucker et al, 1996).

Having been trained in the 1960s as a developmental psychologist, particularly in the Jerome Bruner and Jean Piaget tradition, Gardner stresses those origins in his ideas. Gardner believes that genetic legacies influence options and ultimate achievements, but the importance of cultural or motivational factors is there. Both nature and nurture are more important than scientists had previously acknowledged. Hereditary is important, but the choices one makes and the distance one travels consequent to those choices, have everything to do with the culture in which one happens to live and the particular, often idiosyncratic experiences of one's own life (Ibid., 1996).
Gardner’s answer to Eisner’s questions on his position on the relation between artistry and intelligence:

I hold that no intelligence is of itself artistic or not. An intelligence is a biopsychological potential that is drawn on within a culture for a variety of purposes. It is a cultural—and sometimes an individual-choice as to whether an intelligence becomes mobilized artistically. (Ibid.,1994)

Eisner takes the position that, if an intelligence is not used artistically, it has not been marshaled in a fully intelligent manner. Where he rates the aesthetic use as superior, I would simply designate aesthetic use as an option. (Ibid., 1994)

Sternberg...calls me...to task for not providing an empirical test of the theory of multiple intelligences, and he warns of the dangers to educational reform in embracing such an untested theory. (Ibid., 1994)

In labeling multiple intelligences a theory, I have always taken care to note that it is less a set of hypotheses and predictions than it is an organized framework for configuring an ensemble of data about human cognition in different cultures. Still, I bristle at the notion that educational work in the vein should grind to a halt while some kind of decisive scientific test is carried out. (Ibid., 1994)

The theory is based on empirical findings and, like Darwin’s synthesis or Sternberg’s proposal, it will survive or be overthrown on the basis of future reflection on, and reorganizations of, the same and new bodies of data. (Ibid., 1994)

My own view is that MI theory has proved catalytic in schools all over the country precisely because it allows individuals (particularly parents and
teachers), in a nonthreatening way, to look more carefully at children, to examine their own assumptions about potential and achievement, to consider a variety of approaches to teaching, to try out alternative forms of assessment— in short, to begin the fundamental kind of self-transformation that is necessary if schooling is to improve significantly. It is one thing to proclaim commandments: but even Moses (and his Co-author) would have had little hope for success in the absence of powerful entry points for the audience and the gradual buildup of a supporting social movement. (Ibid., 1994)

It is for others, over the long run, to judge the power of MI theory as a contribution to the study of cognition. But there is already much accumulating evidence that MI theory constitutes precisely the kind of flexible but powerful entry point to the changes that all agree are needed in American educational circles. And the fact that so much of the energy has come from practitioners themselves indicates that there might even be the elements of a social movement, rooted in the valuing of the individuality of every human being (Ibid., 1994).

Mitchell (1994) reviewed Gardner’s Multiple Intelligences: The Theory in Practice. She indicated that the book is not well focused. Furthermore, she noted that Gardner and his associates seem less aware of practical issues or educational politics than they should be. Perhaps in general, Gardner needs to focus upon real-world ideas which are a bit more practical (Smerechansky-Metzger, 1995).

Gardner (1996) addresses misconceptions about MI theory: you can’t get from MI to psychometrics-as-usual, there is no “MI approach” to education, the theory takes no position on the sources of different intellectual profiles, the psychometric view of intelligence is too narrow, substituting one form of scholasticism for the rich set of capacities that comprise the human mind.
Gardner is a proponent of teaching the classical disciplines and teaching to the highest standards. This belief in MI and pursuit of a rigorous education is compatible, and more students can be reached and given opportunity to demonstrate what they have understood when MI is applied (Ibid., 1996).

Eight criteria laid out explicitly in Chapter 4 of Frames of Mind ranging from the existence of populations that feature an unusual amount of a certain intelligence, to localization of an intelligence in particular regions of the brain, to susceptibility to encoding in a symbolic system makes MI theory more than a parade of personal preferences (Gardner, 1996).

As I envision them, the intelligences have emerged over the millennia as a response to the environments in which humans have lived. They constitute, as it were, a cognitive record of the evolutionary past. If my list of intelligences is close to the mark, it will mean that my colleagues and I have succeeded in figuring out what the brain has evolved to do—to use a current phrase, that we have carved nature at its proper joints.

To be sure, culture has not evolved simply to fit nature, but the kinds of skills that we expect individuals to achieve do reflect the capacities that individuals actually possess. The challenge confronting educators is to figure out how to help individuals employ their distinctive intellectual profiles to help master the tasks and disciplines needed to thrive in the society (Gardner, 1996, pp. 3-4).

Gardner says there is no generalized memory, but there is critical thinking using one or more intelligences, and there is creativity in one, or in more than one, domain. Transfer of skill cannot be taken for granted. The use of one set of intellectual skills does not necessarily enhance others. It is not possible to assess an individual intelligence or an individual's intelligences with reliability, but performance of a task can be assessed. We cannot, however, be certain which particular intelligence worked to solve the task.
Intellectual profiles of students should be done with caution, and labeling with little empirical evidence is unwarranted (Ibid. p.5).

It is very difficult, if not impossible, to prove empirically a theory of cognitive functioning like multiple intelligences. The psychometric, correlational and cognitive processing approaches have all been shown to be ambiguous and arbitrary when one is attempting to analyze complex real-world behavior and attributes. Perhaps experimental data, difficult to collect, and ambiguous and arbitrary in analysis, are not even appropriate as tools in the confirmation of a theory of intelligence. From a practical perspective, if intelligence is observed to be differentially distributed among multiple domains, more a profile of various abilities than a unitary and general innate quality of a person, IQ is useless in identification of giftedness. A system that takes into account an individual's aptitudes across MI's 7 domains would make more sense in terms of identifying who needs special programming, and what to do with these individuals, than a system that measures IQ and puts the high scorers together with a hodgepodge of "enriched" programming (Matthews, 1988).

Cultural differences, including those attributable to ethnicity, language, race and socio-economic status, constitute an important and contentious topic in the field of special education. MI theory was developed with cultural differences very much in mind, and in fact an important factorial-inclusion criterion for Gardner in developing the theory was cross-cultural relevance. (Ibid., 1988)

The issue of relative culture-fairness of MI and IQ can best be understood by considering the theoretical underpinnings of each approach. Subtests are chosen for inclusion in IQ tests not because they are theoretically the best possible tests of certain well-defined intellectual abilities, but because they work well psychometrically to differentiate the individuals in the normative sample. This automatically biases the test against those individuals whose experience deviates from the norm in such a way as to make them less likely to answer the questions in the conventional way: in an
American-normed test, all those who are not middle-class, American-born, raised in the English language, and/or white (Matthews, 1988).

When intelligence is defined as factorial along cross-culturally determined and well-demarcated lines, as with MI, it becomes clear that certain subtests are more applicable than others to any particular domain. Subtests are chosen first because of their theoretical, contextual and cross-cultural validity, and are only then validated psychometrically. A subtest such as Comprehension on the WISC-R, with its obvious culture loading with questions like “What is the thing to do when you see a robbery taking place?”, would be unlikely to be considered useful in any of the MI domains. The theoretical underpinnings of the MI profile predispose it to greater culture-fairness than has been the case with IQ (Matthews, 1988).

Some people disagree with the use of the word intelligences. Brown University professor Ted Sizer, founder of the Coalition of Essential Schools, feels that we need the traditional IQ score. He thinks Gardner is ignoring some essential questions about intelligence (Woo, 1995; Jasmine, 1996).

Denis Doyle, a senior fellow at Hudson Institute and the founder of Doyle Associates, a change-management consulting firm, feel that developing verbal and mathematical capacity is the major job of the schools and that anything else is a cruel hoax worked on students, especially the disadvantaged (Doyle, 1994; Jasmine, 1996).

Christopher Cross, president of the Council for Basic Education in Washington, D.C., feels that it is entirely proper for schools to put the most emphasis on linguistic and logical mathematical skills since they are the most important ones in our society. He also fears that the intelligences will be used as just one more elaborate tracking system and that no one should be excluded from the common body of knowledge that must be passed along to all students in our schools (Cross, 1994; Jasmine, 1996).

Morgan critiques, based on reading Frames of Mind and an article written by Gardner in 1987 in Educational Researcher, that the novelty in Gardner’s proposal is that
each factor is a separate construct that would qualify as an intelligence, but he argues that they are more realistically cognitive styles than new intelligences. There are similarities apparent in literature that appeared in the 1950s and 1980s, according to Morgan, that are, “so striking that it is surprising how cognitive style theory could have gone unnoticed by Gardner and associates.” (Morgan, 1996, p. 264). Multiple intelligence descriptors used by Gardner allow for a broad semantic diversity, according to Morgan, but do not entitle a theory of intelligence to emerge. Experience, the essence of what we provide learners, must be at the center of learning, a tenet that Morgan faults Gardner’s theory with accepting credit for positing.

Morgan delineates the semantics Gardner applies in his theory, and concludes that multiple intelligences is a reframing of cognitive styles into 7 areas of intelligence. He finds counterparts in cognitive style literature to build his case against the originality of Gardner’s thinking of new intelligences against his evidence that they are rewarmed semantics, but cognitive styles, in spite of the label “intelligence”, since multiple intelligences does not qualify as an intelligence theory (Morgan, 1996).

In consideration of the relationship between multiple intelligences and diverse learning styles, Howard Gardner sums up much of the newer research, applications, and pedagogy, when he says, near the end of Frames of Mind:

...it is a principal assumption of this study that individuals are not all alike in theory cognitive potentials and their intellectual styles and that education can be more properly carried out if it is tailored to the abilities and needs of the particular individuals involved. Indeed, the cost of trying to treat all individuals the same, or of trying to convey knowledge to individuals in ways uncongenial to their preferred modes of learning, may be great: if at all possible, it is advisable to devise methods for assessing the intellectual profiles of individuals (Gardner, 1994, p.385).

Further, Gardner sums up the need to pay attention to environment:
...I have urged that educators pay close heed to the biological and psychological proclivities of human beings and to the particular historical and cultural context of the locales where they live...Knowledge is according and will-I hope-continue to accrue about what human beings are like, when considered in relative isolation and as members of a functioning cultural entity (Gardner, 1994, p. 393).
CHAPTER III

Methodology

This study examines the changes in traditional curriculum when multiple intelligences in middle school language arts classes are implemented. What happens to language arts classes' topics, themes, assessments, and approaches to integrating the curriculum when multiple intelligences is applied? What happens to goals, organization, role of the teacher, content, instructional strategies, classroom management, materials, and assessment when multiple intelligences is put into action (Snyder, Bolin & Zumwalt, 1992). Data collected will include several different sources: classroom observations, questionnaires, and interviews with teachers.

The researcher played an active role in the study and compiled and analyzed data to develop the story line. The researcher spent 2 months visiting the classrooms involved in the study, made several observations in all the classrooms and observed and recorded in the schools on a weekly basis. Members of the language arts staffs were interviewed in sessions that lasted between thirty minutes and one and a half hours. The purpose was to discover the nature of what takes place in language arts classrooms where multiple intelligences has been implemented that represent change in the curriculum. Notes were taken on observations of the curriculum presented during all observations and all interviews. The researcher recorded via audio tapes during the interviews, and made notes during the observations.

Because of the subjective nature of this study, interviews were both structured and non-structured, scheduled and unscheduled; the interview process was conducted in a directive and nondirective manner including open and closed questions.
Triangulation of data included observations, interviews, questionnaires, analysis, audios, written descriptions, quotes, comparisons and results. Past, present and future plans for multiple intelligences were discussed with teachers including in-service courses taken, and reading and purposeful activity designed to continue implementation of multiple intelligences. Categories, comparisons and concepts were noted, sorted and organized to establish the degree of change in curriculum since multiple intelligences application. These descriptions are presented in Chapter 4. Chapter 5 presents the theoretical conclusions and findings of the dynamics of application of multiple intelligences to language arts curriculum. Data was interpreted in relation to the phenomena of the study. Conclusions were drawn and observations verified, and a grounded theory developed that explained the relationship of multiple intelligences to language arts curriculum change and development.

At the conclusion of this dissertation, implications for the future based on the findings in the study are presented. This is divided into implications of the study for educators, curriculum directors and future research.

Overview

1. Use of an informative, small sample, observations and interviews so inductive (observations of particular cases may be generalized to a class of cases), analysis can flow. A specific, concrete observation of multiple intelligences theory applied to curriculum so conclusions that are concrete and generalizable can be made.

2. Through words, narratives, individual quotes, personal response of the researcher, a pattern of curriculum will emerge that reflects the ten implications for curriculum Gardner predicts or, where implementation is ineffective, curriculum will show minor or no changes that reflect multiple intelligences implementation.

3. These elements of curriculum are, in Gardner's words, what should happen to curriculum when multiple intelligences is applied, so these elements will be assessed in
each observed setting: Howard Gardner on “Implications for Curriculum” (Gardner, 1993a).

A. Educate for understanding
B. Foreshortening of curriculum
C. Abandon effort to cover everything—move toward “uncoverage”. “Less is more”.
D. Define at outset the kinds of concepts one wishes students to understand and kinds of performances one wishes students to exhibit upon completion of school.
E. “End states” and final exhibitions become the basis on which curricula and assessments to be used en route are then devised.
F. Introduce explicitly to students early on in careers so these concepts and performances can be revisited numerous times during school.
G. Education for understanding entails the necessity for a “spiral curriculum” in which rich, generative ideas are revisited time and again across a student's career in school. This requires considerable deep commitment among teachers and considerable continuity in student learning.
H. Curriculum coordination—certainly across the school and possibly across the nation—seems to be indicated—continuity among years.
I. “Core knowledge” some materials all students should know, but not a canonical list of books or principles, but a consensus around certain very rich or generative concepts such as evolution or democracy.
J. Attention to kinds of performances that can reveal understanding, i.e., application of those concepts to newly encountered biological phenomena or political occurrences.
K. Gardner proposes a way to improve arts education by anticipating the elements on the scene: the philosophical notions of education, the psychological accounts of learning, the practices of the past, and the ecology of the educational system: the
assigned curricula, the school administration, processes of certification and licensure, the decision-making processes (Gardner & Perkins, 1989a). These elements will be considered in evaluating the middle school language arts curricula.

**Subjects**

Workshops in multiple intelligence theory have proliferated. In districts where teachers have readily embraced the tenets of the theory because it makes sense and leads children to success in the classroom, implementation of multiple intelligences may necessitate reduction in quantity of work covered in the classroom, but allow for a depth of understanding, student ownership of work, and collaboration among teachers and students.

Five districts where multiple intelligences has been implemented to varying degrees will be studied. Data collection will be limited to middle school language arts classes where multiple intelligences has been implemented.

**Instrument**

Fidelity perspective, mutual adaptation and curriculum enactment are the 3 research approaches for studying how curriculum is shaped throughout the evolving constructs of teachers and students (Snyder, Bolin & Zumwalt, 1992).

Just because an innovation had been adopted one could not assume it was being implemented in every classroom. As teachers were found to have different levels of concerns, they were also found to be using the innovation at different levels. After developing operational definitions of different levels of use, researchers generated a list of behavioral indicators of each level of use. The 8 levels for defining levels of use are: 0 (nonuse), I (orientation), II (preparation), III (mechanical use), IVA (routine), IVB (refinement), V (integration), VI (renewal). Assessment of levels of use (LoU), through a focused interview correlated .98 with direct observations (146). When, later, the initial implementation level (IV) was further differentiated into a routine (IVA) and refinement
level (IVB) the level IV numeration was kept to preserve the theoretical parallelism between SoC and LoU (Hall & Loucks, 1976).

The Concerns Based Adoption Model (CBAM) has been developed, validated, and expanded as new dimensions of the adoption and implementation of innovations in schools have become evident.

The concept of “concerns” was developed to describe individuals’ perceptions, feelings, motivations, frustrations, and satisfactions as they progress through different states in the process of implementation of an innovation (Hall & Loucks, 1976). Seven stages of concerns progressing from unrelated concerns (stage 0) to self-concerns (stage 1 and 2) to task concerns (stage 3) to impact concerns (stages 4, 5, 6) have been verified through analysis of focused interviews in a series of cross-sectional and longitudinal studies. There are 7 specific stages:

Stage 0 (Awareness): Little concern about or involvement with the innovation is indicated.

Stage 1 (Informational): A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner, such as general characteristics, effects, and requirements for use.

Stage 2 (Personal): Individual is uncertain about the demands of the innovation, his/her adequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment. financial or status implications of the program for self and colleagues may also be reflected.

Stage 3 (Management): Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.
Stage 4 (Consequences): Attention focuses on impact of the innovation on students in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

Stage 5 (Collaboration): The focus is on coordination and cooperation with others regarding use of the innovation.

Stage 6 (Refocusing): According to Hall, Wallace, and Dosett (1973 as cited in Snyder, Bolin & Zumwalt, 1992), the focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation. (as cited in Snyder, et al, 1992).

Gardner’s Implications for Curriculum (A-K) listed on pages 81 and 82 will be used to assess implementation.

A third dimension was added to CBAM framework: innovation Configuration (I-C). In working on level of use (LoU), it became apparent that users had different ideas about what “doing the innovation” meant. “Teachers often adapt the programs to their own needs, making changes that may leave out key components and can lead to decreased results” (Hall & Loucks, 1981, pp. 46-47). The I-C instrument was developed to measure the forms and patterns of the innovation in practice, It requires identifying the essential operational components of an innovation, as well as acceptable and unacceptable variations (Snyder, 1992). Having a good picture of current use makes it possible to make “databased decisions about what the curriculum should look like” (Hall & Loucks, 1981).

What exemplary teachers are doing, what most teachers are doing and what teachers with the best outcomes are doing, and adaptation of Gardner’s original list of essential components and variations will force a configuration analysis and descriptions of actual use of multiple intelligences will form a starting point for in-service work aimed at “facilitating the desired operational forms of the innovation” (Hall & Loucks, 1981, p. 54).
Rationale for Use of an Initial Questionnaire

There are 4 questions that needed to be answered:

1. After review of a statement of purpose, hypothesis, and significance of the study with the proposed sampling group, can this study work in the 5 districts?

2. Is there a population of teachers in the districts implementing multiple intelligences?

3. Who directs curriculum decisions in the districts, and will they and the teachers be cooperative/knowledgeable/enthusiastic about this study?

4. Will this study reflect change from multiple intelligences implementation, or other educational reform prevalent from local and state governance?

The questionnaire (Appendix B) was designed to examine how each language arts teacher integrates the curriculum. This was asked of all middle school language arts teachers in districts targeted for data collection, coded for responses that indicated multiple intelligences implementation in the classroom and personal preferences for curriculum integration; it formed an excellent basis for sampling choice.

The language arts teachers in 12 language arts classrooms in 5 different districts' middle schools form a subgroup of the population which on the basis of available information can be judged to be representative of the population. The primary data available are:

a. Results of a questionnaire concerning curriculum integration based on Robin Fogarty's work, The Mindful School How to Integrate the Curricula, (Appendix A, Questionnaire A) sent to language arts teachers from targeted districts. Using their responses, twelve language arts teachers were chosen to participate in this study.

b. Results of a questionnaire (Appendix A, Questionnaire B) sent to 12 selected middle school language arts teachers from a field of 150 teachers; the questions were composed after extensive reading of Howard Gardner's works on Multiple Intelligences with emphasis on curricular change.
c. Interviews with 4 teachers to establish time frames and logistics of the study and willingness to participate. The direction of each meeting can be understood by examining the areas of focus planned chronologically.

d. Observations over a two month period of 4 classrooms participating in the study. Data analysis will include audio tapes of interviews and written notes on observations. Written descriptions, quotes, summary of analysis of what took place at the school, teaching methodologies presented and their relationship to multiple intelligences will be noted.

Research Procedure

This study will compare, build theory, and propose generalizations about curriculum change in middle school language arts classes when multiple intelligences is implemented. Through informal and formal conversation with participants, observations as it is experienced by them, and data collection, through interpretational analysis (constructs, themes, and patterns to describe and explain the phenomenon), Structural analysis (patterns inherent in discourse, text, events, or other phenomena with little or no inference made as to the meaning of the patterns), and reflective analysis (intuition and judgment to portray or evaluate the phenomenon) (Leedy, 1997). Classroom observations and teacher interviews will provide information to assess frameworks, pedagogy, assessments and curriculum integration in these classrooms.

One 28 question questionnaire sent to each of the 12 participating language arts teachers assesses the level of implementation of major components of multiple intelligences taken from the works of Howard Gardner and contemporary articles on the subject. These questions were devised to cover all the areas asked in the research questions. The following questionnaire questions apply to the 13 research questions. When added together, their means give an overall mean for each of the 13 research questions with ranking of Very high: 4.5-5; High: 3.5-4.4; Medium: 2.5- 3.4; Low: 1.5- 2.4; and Very low: 1- 1.4
Domains of Inquiry

Student Performance.
9, 12, ten, 11, 13
Research Question 4, 7, 8, 9, 13

Pedagogy.
19, 28, 2, 14, 24, 17, 23
Research Question 2, 3, 6, 7, 9, ten, 11, 12, 13

Curriculum.
20, 18, 25, 16, 21, 22, 15, 4, 3, 1
Research Question 1, 3, 7, 8, 9, ten, 11, 12, 13

Assessment.
8, 27, 26, 5, 6, 7,
Research Question 3, 4, 7, 8, 12, 13
CHAPTER IV

Results

The problem addressed is how do middle school teachers’ interpretations of multiple intelligences theory affect language arts curriculum in respect to pedagogy, assessment, subject integration, interdisciplinary approach and purpose? This chapter will provide responses to the questions asked, and present a theoretical model that looks at implementation levels and their effect on curriculum.

Section A of Chapter 4 will deal with teachers’ ratings of their implementation of MI based on self-reporting in questionnaire A resulting in a numbered implementation from 1 to 3 based on the CBAM scale with one the lowest implementation, 2 a medium implementation, and 3 the highest implementation.

Section B of Chapter 4 will include the thirteen research questions arranged according to means in ascending order, with applicable Questionnaire B questions’ means, teacher ratings of questions effect on curriculum, and a discussion of the effect of the change on curriculum.

Section C of Chapter 4 will coordinate teacher interviews with the broad domains of inquiry: student performance, pedagogy, curriculum, and assessment in relation to research questions. The levels of implementation will be grouped around research questions with means for groups. Connections and disconnections among research questions, questionnaire, and reading will be discussed.

Section D will discuss expectations for curriculum when MI theory is implemented and findings discussed in previous sections.
Section A Teachers' Ratings of Implementation of MI Theory.

There are 8 levels of implementation for multiple intelligences: 0 (nonuse), I (orientation), II (preparation), III (mechanical use), IVA (routine), IVB (refinement), V (integration), VI (renewal). For reporting purposes in this study, 0, I, and II were eliminated by administering the first questionnaire (Appendix B, questionnaire A); teachers who fell below I, II or III rating were not included in the study. The 12 selected teacher/participants rated accordingly based on their reported implementation of multiple intelligences which included experience teaching MI courses and workshops, degrees taken which emphasized MI theory, years of implementation of MI theory, district employment where MI is the foundation of the entire school curriculum, and philosophical basis in MI theory. Three represents the highest implementation and one the lowest: Mechanical Use (III) and Routine (IVA) rates 1 (Low implementation of MI), and 4 teachers from two districts achieved this rating or 33% of the participants. Refinement (IV B) rates 2 (Moderate implementation of MI), and two teachers from one district achieved this rating or 16% of the participants. Integration (V) and Renewal (VI) rates 3 (High implementation of MI), and 6 teachers from three districts achieved this rating or 50% of the participants.

This reporting will begin with 6 teachers who received the highest (3) rating for implementation: Participants D, E, I, F, H, G, then to the 2 teachers who received the medium rating for implementation (2): Participant A and B, then on to the four teachers who received the lowest rating for implementation (1): Participants C, J, K, L, so the reporting will occur in descending order.

The responses of participants rated highest in implementation (3) include Participant D who has created and facilitated MI workshops. She concentrated on MI while completing her MA and Ed.S. in magnet education and processfolio used eight years ago. Her district is committed to MI theory and curriculum. "I have also created and facilitated MI workshops." "I first came across MI in my graduate work, eight years ago."
"It (MI theory) has also strengthened my philosophy and methods. It has broadened my focus and practice." "My MA and Ed.S. concentrated on MI in magnet education and processfolio use."

Participant E rated 3 on the implementation of MI, and has taught and participated in MI workshops for the past 6 years. In addition to reading on her own, she has developed a survey, making learning accessible to anyone and including everyone. "(I have participated in and) taught them (multiple intelligences workshops)" "[MI theory] Gave me a scaffolding from which to work and to which to connect other concepts, i.e. Math A Way of Thinking, themes, portfolios, plan-so-review (High Scope), learning styles, individual projects, demonstrations of knowledge. [MI theory] Made me realize all students can learn-learn differently, but can learn- so if they're not learning I have to look at how I'm teaching and vary my efforts/approaches." "Taught MI classes for 5-6 years now as a grad level course- intro and advanced. Read Gardner/ Armstrong/ Campbell/etc. and developed a survey of sorts. This coincided with the rest of my thinking: it includes everyone; it makes learning accessible to anyone."

Participant F who rated 3 on the implementation of MI teaches at a school based entirely on the precepts of MI theory, and reports that MI is second nature to her because it seems the most natural thing to do. [Her school] has been at the forefront of the MI movement since its inception. She has also read on her own and participated in MI workshops.

"[Her school] has been at the forefront of the multiple intelligences movement since its inception. The use of multiple intelligences has become second nature to me. Using MI in the classroom seems the most natural thing to do."

Participant H who rated 3 on implementation of MI theory has facilitated MI workshops, reads and researches on her own, and uses multiple intelligences in the classroom as a daily, ongoing practice. "Realizing the varied natures of learning I have attempted to create scenarios that are for that variety."
"I have facilitated an MI workshop for the IRA and through the experience have enhanced my usage." ...I am looking at integration, the use of multiple intelligences in my classroom are routine, there is also a refinement there. I really am a person who uses multiple intelligences in the classroom because of student's strengths being varied and I want to see what they have learned, not just try to test them in a way that would be easiest for me. I'm not interested in that. I really am interested in what they have learned and the application of those skills are important."

Participant A who rated 3 on the MI implementation scale has taught 7 intelligences techniques, has read extensively, and teaches in a school where MI is the basis for instruction and curriculum development.

"[I have read] Gardner, Lazear, and Tribes. I have taught 7 intelligences techniques in our district and was at a school where it was part of our plan."

Participant A who rated two on the MI implementation theory scale has attended workshops and taken graduate courses where MI understanding is stressed. She applies MI on a daily basis in her classroom. "[MI theory] It makes me more aware of my presentation, how best to reach each learner, and use a variety of approaches so I challenge as many students in a lesson as I can." "I took a course on multiple intelligences when I was completing my masters plus credits. It was a number of years ago, but I recall that it did help me become better focused on the learning styles of my students."

"I would like to think that I am in the refinement/integration area. I've been teaching a long time and I try to use it in my teaching when I prepare to be aware of the the children and their needs...need the visual...need the auditory and all that. The ones you want to stimulate more provocative questions so I'd like to think I'm in refinement."

Participant B who rated two on the MI implementation scale has attended an extended workshop, done reading, and continuously added to and improved her application of MI theory in the classroom since her first introduction to MI theory.
“It has created a true comprehension of what is really going on in classroom ‘give and take’. Through this, I can truly modify my teaching and make adjustments so that the most needs can be met.”

“I’ve done a great deal of reading on my own and attended one 3 day workshop. Every time I read, hear, or talk about the topic- I see more and more places where I can work, I think a common misunderstanding is that one is “stuck with” certain intelligences. I am most fascinated with the methods that use the intelligences for modification and adaptation. It could open so many doors for children and adults alike.”

Participant C who rated one on the MI implementation scale has done a masters project dedicated to MI and extensive reading, but does not apply MI on a daily basis in the classroom. “My masters project was dedicated to this! Extensive reading! I enjoy trying different approaches to the delivery of concepts and the assessment of concepts!

“I don’t use MI in everyday routine I’ll be honest with you, um, more spread out intermittently I use it a lot with assessment or I’ll try to use it with my delivery of instruction but I don’t put it on a daily basis.”

Participant C has attended workshops, faculty meetings, and read books and articles dedicated to understanding and applying MI theory.

Participant J who rated one on the implementation scale has watched videos and attended an instructional workshop including passive, not active events in her studies. She has read about the theory on her own, including *Multiple Intelligences in the Classroom* by Thomas Armstrong, Howard Gardner’s MI’s and any MI articles.

“As I plan unit, theme or lesson, I try to incorporate activities that would include as many of the MI’s as possible.”

She has attended faculty meetings devoted to the subject, attended 2 workshops encompassing information shared, but not active participation. “I think the workshops, books and information shared at faculty meetings has given me a better understanding of the MI’s, and has helped me to work towards a holistic (sic) approach in my classroom.
Participant K who has rated a one on the implementation scale has participated in multiple intelligences workshops, and read about the theory on her own. MI has influenced my teaching by recognizing that we all learn differently through many ways and that should be celebrated."

Her reaction to these workshops: "Our ILA curriculum is designed around the multiple intelligences. The current series we use is D.C. Heath which includes follow up activities and projects which allow the multiple intelligences to be utilized and celebrated! I have also implemented and designed my own follow-up activities to the novels we read together in class which compliments (sic) our theme units. I’d love for you to see the activities I designed for a novel we just read. Please contact me immediately as we are currently working on theme."

Participant K has read about MI theory and designed activities to apply to lessons which incorporate MI theory. Teaching has been influenced by her exposure to MI. Faculty meeting lectures and follow-up discussions have enhanced her understanding of MI.

Participation in multiple intelligences workshops for participant L who rated one on the implementation scale includes inservice from her principal. She has seen a video, and she has read about the theory on her own.

"The multiple intelligences reinforces my belief that everyone has a different learning style. It allows me to use a variety of evaluations, materials, and use of methods to appeal to the students’ learning styles. It does not limit evaluation, but gives a more accurate picture of a students’ (sic) learning process.

Her participation in workshops and reading on her own are assessed in her words: "I have read a variety of articles about brain compatible classroom. Educational Leadership dedicated its March 1997 issue to how children can learn, and other articles written using Howard Gardner’s ideas. My principal has been very instrumental in educating our staff. My classroom is evolving using the multiple intelligences and portfolio
assessment. This is my second year at [ ] school. I still have more to learn and improve in my curriculum."

Participant L has participated in MI inservice workshops, read on her own and varied evaluations, materials and methods to enhance student learning through MI techniques.

Participant G chose not to respond to this question but teaches in a school based on MI theory so is included in a scale with a 3 rating.

Section B Teachers' Responses.

Now that we have seen teachers' ratings for implementation of multiple intelligences theory in the language arts middle school classroom, we go on to their responses to 28 questions in Likert-type questionnaire B (Appendix)

Section B of Chapter 4 will include the 13 research questions with the overall mean and applicable Questionnaire B questions' means, teacher ratings of questions' effect on curriculum, information from observations, and a discussion of the effect of the change on curriculum. Questions 5, 9, 12, 2, 13, 4, 6, 7, 8, and 11 rated an overall mean of high in MI classroom implementation and will be discussed next in descending order according to research question overall mean, and finally Questions 3 which rated an overall mean of medium in MI classroom implementation will be discussed followed by 1 which rated an overall mean of low in MI classroom implementation.

The rating system applied to all means for discussion of questions and results was 4.5-5 Very High (VH) 5, 3.5-4.4 High (H) 4, 2.5-3.4 Medium (M) 3, 1.5-2.4 Low (L) 2, 1-1.4 Very Low (VL) 1.

Research Question 5.

How do teachers integrate the curriculum when MI is implemented using certain favored integrations?
Research question 5, how do teachers integrate the curriculum when MI is implemented using certain favored integrations resulted in: Shared 4, Webbed 4, Integrated 4, Connected 3, and Nested 3, out of 10 models for curriculum integration.

The shared curriculum model comes from sharing ideas within the disciplines rather than introducing an idea or theme from outside the curriculum. The commonalities of two curricula are the key to shared integration of curriculum. The coupling of similar disciplines makes deep learning of concepts easier and more transferable. Two teachers can plan a strong lesson together. Flexibility and compromise are important parts for successful implementation as well as trust and teamwork. Dialogue and conversation is necessary for in-depth treatment of subject matter.

The webbed curriculum begins with a theme that is necessarily generic decided upon across a team. The theme is used as an overlay to the different subjects which can span the entire student curriculum. This theme generates high interest, and the approach facilitates teamwork and student motivation as they see subjects united by a common idea. Activities can become more important than concept development if caution is not used.

The integrated model requires that the major disciplines come together and a commonality in subject matter content be found. Teams decide upon the priorities to teach, and selectively abandon elements of the traditional curriculum. The day for teachers and students is integrated raising motivation and interest in ideas as more is learned. Highly skilled staff with confidence and skill in a discipline is essential for this integration to succeed. This model requires interdepartmental teams with blocks of planning and teaching time in common which can mean restructuring of schedules. Many resources must be available.

The connected model makes connections within each subject area, connecting one topic to the next, connecting one concept to another, connecting a skill to a related skill, and connecting daily and semester ideas to the next. Deliberate relationships are made within the curricula. The connected model of integration allows the students to connect
ideas within a discipline to review, edit and assimilate ideas gradually. The model, however, does not allow a stretch across disciplines.

The nested model takes advantage of natural combinations of learning targets. Many targets come out of one lesson, be it a social skill, a conceptual target, or a thinking skill. Student learning is enhanced and enriched. Students may be confused if the nesting is not executed carefully. Students are performing many learning tasks at the same time (Fogarty, 1991). 5 have been selected as favored ways for language arts teachers implementing MI in their classrooms to integrate their curriculum.

Research Question 10.

Do teachers put away the didactic lecture approach of the traditional classroom rated an overall mean of 4.5 or very high, and was best answered with questions 19, 28, 18, and 2.

Questionnaire response 19, we brainstorm in the MI classroom, with a mean of 4.8 and no teachers rating it 1, 2 or 3, but 3 teachers giving it a 4 and 9 teachers giving it a 5, a very high rating and salient feature of the MI landscape in the classroom in teachers of high implementation of 3 with a 4.8 mean, medium implementation of 2 with a 4.5 mean and low implementation of 1 with a mean of 4.7.

Question 28, I give attention to all kinds of performances that can reveal understanding rated an overall mean of 4.6 with no teacher rating it 1 or 2, 1 teacher rating it 3, 2 teachers rating it 4, and 9 teachers rating it 5. Highest teacher implementers of 3 gave it a mean of 5, medium rated implementers gave it a mean of 4.5; lowest teacher implementers gave it a mean of 4.2.

Question 18, consider possibilities in the MI classrooms that rated an overall mean of 4.5 with no teacher rating it 1 or 2, 2 teachers rating it 3, 2 teachers rating it 4, and 8 teachers rating it 5. Highest teacher implementers of 3 gave it a mean of 4.5, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5.
Question 2, when MI is implemented the delivery of material changes, which was
given an overall mean of 4.3 with no teacher rating the question 1 or 3, but 1 teacher
rating it 2, 5 teachers rating it 4, and 6 teachers rating it 5. Teachers with a high
implementation of 3 gave it a mean of 4.5, teachers with a medium implementation rating
of 2 gave it a mean of 5, and teachers with a low implementation of 1 gave it a mean of
4.5 which are very high ratings, indicating a great affect in the MI classroom.

Teachers rated brainstorming in the MI classroom at a very high mean of 4.8 with
75% of teachers rating it at 5, and 25% rating it at 4. Teachers rated giving
attention to all kinds of performances that can reveal understanding at a mean of
4.6 with 75% rating it at 5, 16% rating it at 4, and 8% rating it at 3.

Consideration of possibilities in the MI classroom rated a mean of 4.5 with 66%
rating it at 5, 16% rating it at 4, and 16% rating it at 3. When MI is implemented delivery
of material changes received a high mean of 4.3 with 50% of teachers giving this a 5 and
41% giving it a 4. Only one teacher gave it a 2 rating

Research Question 9.
Is real life experience reinforced by a progressive curriculum that is student
centered rated an overall mean of 4.4 or high, and is answered by questionnaire questions
28, 20, 12, ten, and 23.

Question 12, students can apply what is learned when MI is applied, received a
mean of 4.5 with 58% of the teachers giving it a 5 and 33% giving it a 4 and rated a mean
of 4.5 with no teachers rating it at 1 or 2, 1 teacher rating it at 3, 4 teachers rating it at 4
and 5 teachers rating it at 5. Teachers with an implementation of 3 rated a mean of 4.8;
level 2 teachers rated the question with a mean of 4.5, and level 1 teachers rated the
question with a mean of 4. The question, students can apply what is learned when MI is
applied, received a mean of 4.5 with 58% of the teachers giving it a 5 and 33% giving it a
4.
Question 10, students can find evidence and examples for their research when MI is applied, received an overall mean of 4.4 with no teachers rating it at 1, 1 teacher rating it at 2, 1 teacher rating it at 3, 2 teachers rating it at 4, and 8 teachers rating it at 5. Highest teacher implementers of 3 gave it a mean of 4.6, medium rated implementers gave it a mean of 4, lowest teacher implementers gave it a mean of 4.2. The question students can find evidence and examples for their research when MI is applied, received a mean of 4.4 with 66% of teachers rating it as 5.

Question 28, I give attention to all kinds of performances that can reveal understanding, rated an overall mean of 4.6 with no teachers rating it 1 or 2, 1 teacher rating it 3, 2 teachers rating it 4, and 9 teachers rating it 5. Highest teacher implementers of 3 gave it a mean of 5; medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.2.

Question 20, we select appropriate activities for the MI classroom, rated a mean of 4.6 with no teacher rating it 1, 2, or 3, but 5 teachers rating it 4, and 7 teachers rating it 5. Highest teacher implementers of 3 gave it a mean of 4, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5. Teachers rated selection of appropriate activities for the MI classroom at a mean of 4.6 with 58% rating it at 5, and 41% rating it at 4. This is a very high mean with most teachers agreeing to its implementation.

Question 23, I translate the material to be taught from one intelligence to another, rated an overall mean of 3.8 with no teacher rating it 1, 2 teachers rated it 2, 2 teachers rated it 3, 5 teachers rated it 4, and 3 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4.5, medium rated implementers gave it a mean of 4, and lowest teacher implementers gave it a mean of 2.5. The question, translation of the material to be taught from one intelligence to another, rated a mean of 3.8 with 25% rating it at 5, 41% rating it at 4, 16% rating it at 3, and 16% rating it at 2.
Real life experience is reinforced by a progressive curriculum that is student centered. Teachers rated giving attention to all kinds of performances that can reveal understanding at a mean of 4.6 with 75% rating it at 5, 16% rating it at 4, and 8% rating it at 3.

**Research Question 12.**

Do students specific intelligences form the basis for curriculum choices, assessment and pedagogy rated an overall mean of 3.7 which ranks high, and is answered with questionnaire questions 19, 28, 20, 18, 8, 23, 4, 3, and 1.

Question 23, I translate the material to be taught from one intelligence to another rated an overall mean of 3.8 with no teacher rating it 1, 2 teachers rated it 2, 2 teachers rated it 3, 5 teachers rated it 4, and 3 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4.5, medium rated implementers gave it a mean of 4, and lowest teacher implementers gave it a mean of 2.5. Translation of the material to be taught from one intelligence to another rated a mean of 3.8 with 25% rating it at 5, 41% rating it at 4, 16% rating it at 3, and 16% rating it at 2.

Question 20, we select appropriate activities for the MI classroom, rated a mean of 4.6 with no teacher rating it 1, 2, or 3, but 5 teachers rated it 4, and 7 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5. Teachers rated selection of appropriate activities for the MI classroom at a mean of 4.6 with 58% rating it at 5, and 41% rating it at 4. This is a very high mean with most teachers agreeing to its implementation.

Question 19, we brainstorm in the MI classroom, with a mean of 4.8 and no teacher rating it 1, 2 or 3, but 3 teachers rated it a 4 and 9 teachers rated it a 5, a very high rating and salient feature of the MI landscape in the classroom in teachers of high implementation of 3 with a 4.8 mean, medium implementation of 2 with a 4.5 mean and low implementation of 1 with a mean of 4.7
Question 28, I give attention to all kinds of performances that can reveal understanding, rated an overall mean of 4.6 with no teacher rating it 1 or 2, 1 teacher rated it 3, 2 teachers rated it 4, and 9 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 5, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.2.

Question 18, we consider possibilities in the MI classroom, rated an overall mean of 4.5 with no teacher rating it 1 or 2, 2 teachers rated it 3, 2 teachers rated it 4, and 8 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4.5, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5.

Question one relating to curriculum content changes had an overall mean of 2.3, and teacher choices of 4 teachers gave it a 1 rating, 4 teachers gave it a 2, 2 teachers gave it a 4, and 1 teacher gave it a 5. Teachers with a high MI implementation rating of 3 gave the question an overall mean of 2.3, medium rating teachers of 2 implementation gave it a mean of 2, and lowest rating implementers of 1 gave it a mean of 2.2.

Ratings of question 3 dealing with choice of curriculum changes had an overall mean of 2.3 with 5 teachers rating it at 1, 3 teachers rated it at 2, 1 teacher rated it at 3, 1 teacher rated it at 4, and 2 teachers rated it at 5. Teachers with an implementation rating of 3 gave the question an overall mean of 3, teachers with an implementation rating of 2 gave it an overall mean of 1, and teachers with an implementation of 1 gave it an overall mean of 2.

Question 4 pertains to changes in curriculum chronology, and rated an overall mean of 2.5 with 3 teachers giving it a rating of 1, 4 teachers rated it at 2, 2 teachers rated it at 3, 2 teachers rated it at 4, and 1 teacher rated it at 5. Teachers with a high implementation 3 gave it an overall mean of 2.8, teachers with a medium implementation rating of 2 gave it a mean of 1.5, and teachers with a low implementation of 1 gave it a mean of 2.5.
Question 8, assessment is aimed at students’ genuine understanding rather than passing a test, had an overall teacher mean of 4.4 with no teacher rating it low at 1, 1 teacher rated it 1, one teacher rated it 3, 2 teachers rated it 4, and 8 teachers rated it 5. Teachers with a 3 MI implementation rating gave the question a mean of 4.5, teachers with a medium implementation rating gave it a 5, and teachers with a 1 implementation rating gave it a 4.

Teachers rated brainstorming in the MI classroom at a very high mean of 4.8 with 75% of teachers rating it at 5, and 25% rating it at 4.

Teachers rated giving attention to all kinds of performances that can reveal understanding at a mean of 4.6 with 75% rating it at 5, 16% rating it at 4, and 8% rating it at 3.

Consideration of possibilities in the MI classroom rated a mean of 4.5 with 66% rating it at 5, 16% rating it at 4, and 16% rating it at 3.

The change in curriculum when multiple intelligences is applied, showed a 2.3 mean of a possible 5.

Curriculum content change showed a mean of 2.3 of a possible 5 when MI is applied, and the curriculum chronology change showed a mean of 2.5 of a possible 5 when MI is applied. These were indicated as the lowest means of all the applications in the 28 question questionnaire. One teacher gave curriculum change a high implementation, but 33% gave it the lowest implementation rating and another third the second lowest implementation rating. Two teachers gave curriculum changes the highest implementation on the scale, but 5 or 42% gave it the lowest rating of one. Curriculum chronology had a slightly higher mean of 2.5 than the other curriculum questions, but only one teacher gave it the highest rating of 5, and 25% gave it the lowest rating of one.

Direct curriculum changes concerning content, change and chronology had a very weak rating.
Research Question 2.

How has middle school subject matter in language arts changed since multiple intelligences has become a focus and guiding principle rated an overall mean of 4.4 which is high.

The questions that pertain to research question 2, how has middle school subject matter in language arts changed since multiple intelligences has become a focus and guiding principle, are questionnaire responses questions 9, 19, 28, 20, 27, 25, 12, 18, 8, 10, 11, 13, 2, and 14.

Questionnaire response 19, we brainstorm in the MI classroom, had a mean of 4.8 and no teacher rating it 1, 2 or 3, but 3 teachers giving it a 4 and 9 teachers giving it a 5, a very high rating and salient feature of the MI landscape in the classroom in teachers of high implementation of 3 with a 4.8 mean, medium implementation of 2 with a 4.5 mean and low implementation of 1 with a mean of 4.7.

Question 28, I give attention to all kinds of performances that can reveal understanding, rated an overall mean of 4.6 with no teacher rating it 1 or 2, 1 teacher rated it 3, 2 teachers rated it 4, and 9 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 5, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.2.

Question 20, we select appropriate activities for the MI classroom, rated a mean of 4.6 with no teacher rating it 1, 2, or 3, but 5 teachers rated it 4, and 7 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5. Teachers rated selection of appropriate activities for the MI classroom at a mean of 4.6 with 58% rating it at 5, and 41% rating it at 4. This is a very high mean with most teachers agreeing to its implementation.

Question 27, the kinds of end states and final exhibitions expected of students are defined at the outset received a mean of 4.3 with no teacher rating it 1 or 2, 1 teacher
rated it 3, 6 teachers rated it 4 and 5 teachers rated it 5. Teachers with a 3 level of implementation gave it a mean of 4.6, teachers with a 2 level gave it a 3.5, and teachers with a 1 level gave it a 4.5.

Question 25, concepts students should understand are delineated at the outset of the learning period, rated a mean of 4.2 with no teacher rating it at 1 or 2, 2 teachers rated it at 3, 6 teachers rated it at 4 and 4 teachers rated it at 5. Teachers with an implementation level of 3 rated the question with a mean of 4.3, teachers with an implementation level of 2 rated the mean at 4.5, and teachers with an implementation level of 1 rated the mean at 3.7.

Question 10, students can find evidence and examples for their research when MI is applied received an overall mean of 4.4 with no teacher rating it at 1, 1 teacher rated it at 2, 1 teacher rated it at 3, 2 teachers rated it at 4, and 8 teachers rated it at 5. Highest teacher implementers of 3 gave it a mean of 4.6, medium rated implementers gave it a mean of 4, and lowest teacher implementers gave it a mean of 4.2.

Question 11, students can generalize material learned when MI is applied received a mean of 4.4 with no teacher rating it at 1 or 1, but 1 rated it at 3, 5 rated it at 4, and 6 rated it at 5. Teachers with a high implementation of 3 gave the question a mean of 4.6, medium implementers gave it a mean of 4.5, and teachers with a low implementation of 1 gave it a mean of 4.

Question 8, assessment is aimed at students’ genuine understanding rather than passing a test, had an overall teacher mean of 4.4 with no teacher rating it low at 1, 1 teacher rated it 1, one teacher rated it 3, 2 teachers rated it 4, and 8 teachers rated it 5. Teachers with a 3 MI implementation rating gave the question a mean of 4.5, teachers with a medium implementation rating gave it a 5, and teachers with a 1 implementation rating gave it a 4.

Question 13, students can represent what is learned when MI is applied rated a
mean of 4.4 with no teacher rating it at 1 or 2, but 1 teacher rated it at 3, 5 teachers rated it at 4, and 6 teachers rated it at 5. Teachers with an implementation of 3 rate its mean at 4.6; teachers with an implementation of 2 rate its mean at 4, and teachers with an implementation of 1 rate its mean at 4.2.

Question 12, students can apply what is learned when MI is applied, rated a mean of 4.5 with no teacher rating the question 1 or 2, but 1 teacher rated it 3, 4 teachers rated it 4 and 7 teachers rated it 5. The mean for level 3 implementers was 4.8, level 2 implementers' mean was 4.5, and the level 1 implementers' mean was 2.4.

Question 18, we consider possibilities in the MI classroom, rated an overall mean of 4.5. The mean for level 3 implementers was 4.5, level 2 implementers' mean was 4.5, and the level 1 implementers' mean was 4.5.

Question 2, when MI is implemented my delivery of material changes, rated a mean of 4.3. The mean for level 3 implementers was 4.5, the level 2 implementers' mean was 5, and the level 1 implementers' mean was 4.

Question 14, materials in my classroom appeal to all intelligences, rated a mean of 4.2. The mean for level 3 implementers was 4.6, the level 2 implementers' mean was 4.5, and the level 1 implementers' mean was 3.2.

Research Question 13.

The curriculum is knowledge rich, constructivist, person-centered and thematic rated an overall mean of 3.9 which is high, and is answered by questionnaire questions 9, 19, 28, 20, 27, 25, 26, 16, 21, 22, 3, and 1.

Ratings of question 3 dealing with choice of curriculum changes, had an overall mean of 2.3 with 5 teachers rating it at 1, 3 teachers rated it at 2, 1 teacher rated it at 3, 1 teacher rated it at 4, and 2 teachers rated it at 5. Teachers with an implementation rating of 3 gave the question an overall mean of 3, teachers with an implementation rating of 2 gave it an overall mean of 1, and teachers with an implementation of 1 gave it an overall mean of 2.
Questionnaire response 19, we brainstorm in the MI classroom, with a mean of 4.8 and no teacher rating it 1, 2 or 3, but 3 teachers giving it a 4 and 9 teachers giving it a 5, a very high rating and salient feature of the MI landscape in the classroom in teachers of high implementation of 3 with a 4.8 mean, medium implementation of 2 with a 4.5 mean and low implementation of 1 with a mean of 4.7.

Question 28, I give attention to all kinds of performances that can reveal understanding rated an overall mean of 4.6 with no teacher rating it 1 or 2, 1 teacher rated it 3, 2 teachers rated it 4, and 9 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 5, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.2.

Question 20, we select appropriate activities for the MI classroom rated a mean of 4.6 with no teacher rating it 1, 2 or 3, but 5 teachers rated it 4, and 7 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5. Teachers rated selection of appropriate activities for the MI classroom at a mean of 4.6 with 58% rating it at 5, and 41% rating it at 4. This is a very high mean with most teachers agreeing to its implementation.

Question 1 relating to curriculum content changes with an overall mean of 2.3, and teacher choices of 4 teachers giving it a 1 rating, 4 teachers giving it a 2, 2 teachers giving it a 4, and 1 teacher giving it a 5. Teachers with a high MI implementation rating of 3 gave the question an overall mean of 2.3, medium rating teachers of 2 implementation gave it a mean of 2, and lowest rating implementers of 1 gave it a mean of 2.2.

Question 27, The kinds of end states and final exhibitions expected of students are defined at the outset received a mean of 4.3 with no teacher rating it 1 or 2, 1 teacher rated it 3, 6 teachers rated it 4 and 5 teachers rated it 5. Teachers with a 3 level of implementation gave it a mean of 4.6, teachers with a 2 level gave it a 3.5, and teachers with a 1 level gave it a 4.5.
Question 25, concepts students should understand are delineated at the outset of the learning period, rated a mean of 4.2 with no teacher ratings of 1 or 2, 2 teachers rated it at 3, 6 teachers rated it at 4 and 4 teachers rated it at 5. Teachers with an implementation level of 3 rated the question with a mean of 4.3, teachers with an implementation level of 2 rated the mean at 4.5, and teachers with an implementation level of 1 rated the mean at 3.7.

Question 21, we set up a sequential plan for the MI classroom rated an overall mean of 3.4 with no teacher ratings of 1, 3 teachers rated it 2, 2 teachers rated it 3, 6 teachers rated it 4, and 1 teacher rated it 5. Highest teacher implementers of 3 gave it a mean of 3.6, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 2.5.

Question 22, we implement the plan, rated a mean of 3.4 with no teacher ratings of 1, 3 teachers rated it 2, 6 teachers rated it 3, 2 teachers rated it 4, and 1 teacher rated it 5. Highest teacher implementers gave it a mean of 3.6, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 2.5.

Question 26, the kinds of end states and final exhibitions expected of students are defined at the outset, has a mean of 4.3 with no teacher rating of 1 or 2, 1 teacher rated it 3, 6 teachers rated it 4, and 5 teachers rated it 5. Highest teacher implementers gave it a mean of 4.6, medium rated implementers gave it a mean of 3.5, and lowest teacher implementers gave it a mean of 4.5.

Question 16, units focus on a specific topic, rated a mean of 4.0 with 1 teacher rating of 1, no teacher rated it 2, 3 teachers rated it 3, 3 teachers rated it 4, and 5 teachers rated it 5. Highest teacher implementers gave it a mean of 4, medium rated implementers gave it a mean of 4, and lowest teacher implementers gave it a mean of 3.7.

Teachers rated brainstorming in the MI classroom at a very high mean of 4.8 with 75% of teachers ratings of 5, and 25% rated it at 4.
Students ability to explain a topic in a different way when MI is applied, received a high mean of 4.8 with 75% ratings of 5, and 25% ratings of 2.

Teachers rated selection of appropriate activities for the MI classroom at a mean of 4.6 with 58% ratings of 5, and 41% ratings of 4. This is a very high mean with most teachers agreeing to its implementation.

Teachers rated giving attention to all kinds of performances that can reveal understanding at a mean of 4.6 with 75% ratings of 5, 16% ratings of 4, and 8% ratings of 3.

Defining the kinds of end states and final exhibitions expected of students at the outset received a mean of 4.3 with 41% ratings of 5, 50% ratings of 4, and 8% ratings of 3.

Delineating concepts students should understand at the outset of the learning period received a mean of 4.2 with 33% of teachers rating of 5, 50% ratings at 2 and 8% ratings at 3.

Defined kinds of performances to be exhibited upon completion of the lesson defined at the outset rated a mean of 4.2 with 33% ratings of 5, 50% rating of 4, and 16% ratings at 3.

Curriculum content change shows a mean of 2.3 of a possible 5 when MI is applied, and the curriculum chronology change shows a mean of 2.5 of a possible 5 when MI is applied; these were indicated as the lowest means of all the applications in the 28 question questionnaire. One teacher gave curriculum change a high implementation, but 33% gave it the lowest implementation rating and another third the second lowest implementation rating. 2 teachers gave curriculum changes the highest implementation on the scale, but 5 or 42% gave it the lowest rating of one. Curriculum chronology had a slightly higher mean of 2.5 than the other curriculum questions, but only one teacher giving it the highest rating of 5, and 25% gave it the lowest rating of one.
Direct curriculum changes concerning content, change and chronology had a very weak rating.

**Research Question 4.**

Has assessment through portfolios, progress reports, profiles and emphasis on genuine understanding allowed students to learn to explain, find evidence and examples, generalize, apply and represent a topic in a different way rated a 4.4 which is high.

Research question 4, has assessment through portfolios, progress reports, profiles and emphasis on genuine understanding allowed students to learn to explain, find evidence and examples, generalize, apply and represent a topic in a different way, is answered in question 8, assessment is aimed at students' genuine understanding rather than passing a test with an overall teacher mean of 4.4 with no teachers rating it low at 1, 1 teacher rated it 1, one teacher rated it 3, 2 teachers rated it 4, and 8 teachers rated it 5. Teachers with a 3 MI implementation rating gave the question a mean of 4.5, teachers with a medium implementation rating gave it a 5, and teachers with a 1 implementation rating gave it a 4.

Question 10, students can find evidence and examples for their research when MI is applied received an overall mean of 4.4 with no teacher rating of 1, 1 teacher rated it at 2, 1 teacher rated it at 3, 2 teachers rated it at 4, and 8 teachers rated it at 5. Highest teacher implementers of 3 gave it a mean of 4.6, medium rated implementers gave it a mean of 4, and lowest teacher implementers gave it a mean of 4.2.

Question 11, students can generalize material learned when MI is applied, received a mean of 4.4 with no teacher rating of 1, but 1 rating of 3, 5 ratings of 4, and 6 ratings of 5. Teachers with a high implementation of 3 rated the question at a mean of 4.6, medium implementers gave it a mean of 4.5, and teachers with a low implementation of 1 gave it a mean of 4.

Question 12, students can apply what is learned when MI is applied, rated a mean of 4.5 with no teacher rating it at 1 or 2, 1 teacher rated it at 3, 4 teachers rated it at 4 and 5 teachers rated it at 5. Teachers with an implementation of 3 rated a mean of 4.8; level
2 teachers rated the question with a mean of 4.5; level 1 teachers rated the question with a mean of 4.

Question 13, students can represent what is learned when MI is applied, rated a mean of 4.4 with no teacher rating of 1 or 2, but 1 teacher rated it at 3, 5 teachers rated it at 4, and 6 teachers rated it at 5. Teachers with an implementation of 3 rated its mean at 4.6, teachers with an implementation of 2 rate its mean at 4, and teachers with an implementation of 1 rated its mean at 4.2.

Assessment through portfolios, progress reports, profiles and emphasis on genuine understanding allowing students to learn to explain, find evidence and examples, generalize, apply and represent a topic in a different way, had a very high mean over 5 questions that applied to this area of application. Assessment aimed at genuine understanding rather than passing a test received a mean of 4.4 with 66% of the teachers’ ratings of 5. Students can find evidence and examples for their research when MI is applied, received a mean of 4.4 with 66% of teachers’ ratings of 5. Students can generalize material learned when MI is applied received a mean of 4.4 with 50% of the teachers’ ratings of 5, and 41% gave it a 4. Students can represent what is learned when MI is applied, received a mean of 4.4 with 50% of the teachers’ ratings of 5 and 41% gave it a 4. Students can apply what is learned when MI is applied received a mean of 4.5 with 58% of the teachers’ ratings of 5, and 33% ratings of 4.

Research Question 6.

What material does the teacher use to appeal to all the intelligences? What evidence of this material is evident in the classroom? These questions rated a mean of 4.2 which is high.

Research question 6, what materials does the teacher use to appeal to all the intelligences. and what evidence of these material is evident in the classroom, are answered with question 14, materials in my classroom appeal to all intelligences, with an overall teacher response mean of 4.2. No teacher rated this question with a low 1 or 2, 3
teachers rated it 3, 4 teachers rated it 4, and 5 teachers rated it 5. Teachers with implementation at 3 rated a mean of 4.6, teachers at the 2 level gave it a mean of 4.5, and teachers at a 1 level gave it a 3.2 mean.

The materials the teachers use to appeal to all the intelligences include large handmade posters, televisions, tape decks, Apple II computers and printers, Mac computers and printers, pictures of the students, globes, handmade pictures, dictionaries, thesauri, and chalkboards, and writing centers with books on appropriate subjects to take home and read or use for research on the topic. The bulletin boards offer encouragement such as “Yes you can”, and “Always reach high”, or “It’s not how smart you are, but HOW you are smart”. Journals are arranged in a display for books being read so students can input each day as their reading progresses. There are easy chairs around a table laden with puzzles, musical instruments and generous portions of school supplies. Two large tables with various stuffed animals, cinderblocks and basket holders strewn around the area provide time away from the main groups of students where the individual may choose another area of concentration for a change. Maps and pictures with essays hang from a clothes line attached by clothes pins. There are pins if a student chooses to display work.

Two teachers on the seventh grade level representing language arts and social studies, gave students the opportunity to read the results of their I-Search projects with the entire seventh grade in attendance in the cafetorium to act as an audience with invited parents, teachers and administrators. It had a celebratory ambiance with food from international cookbooks provided by the students representing each country they included in their ethnic heritage.

Another observation took place in the eighth grade language arts classroom, which is surrounded with posters to initiate a writing idea, but are also beautiful and appealing to all ages and interests: music, modern art, bucolic scenes, urban frenzy, emotionally appealing scenes of fear, happiness, agony, wonderment and confusion. There is an E-Mate available for each student, a computer and printer, plenty of paper to use,
Warriner’s grammar books on a shelf, a poetry book for each student, dictionaries, thesaurus, and bright lighted plants. The teacher has an island consisting of her desk filled with appealing objects, pictures with uplifting sayings, family memorabilia and a podium in front of a board with a pull-down screen.

Each student had an individual sheet with “The Highwayman” by Alfred Noyes for taking notes as the class began. All students also had a book of poetry with the poem opened to that page for reading and line identification.

Research Question 7.

Does this theory affect the number of facts learned in the belief that broad coverage will cause an overabundance of facts, lost to the student as soon as the test is over and superficiality as opposed to in-depth learning, was answered with a high rating of 4.3.

Research question 7, does this theory affect the number of facts learned in the belief that broad coverage will cause an overabundance of facts lost to the student as soon as the test is over and superficiality as opposed to in-depth learning, is answered by questionnaire questions: 12, 8, 13, 24, and 1.

Question 12, students can apply what is learned when MI is applied rated a mean of 4.5 with no teacher rating the question 1 or 2, but 1 teacher rated it 3, 4 teachers rated it 4 and 7 teachers rated it 5. The mean for 3 level implementers was 4.8, level 2 implementers’ mean was 4.5, and level 1 implementers’ mean was 2.4.

Question 8, assessment is aimed at students’ genuine understanding rather than passing a test with an overall teacher mean of 4.4 with no teachers rating it low at 1, 1 teacher rated it 1, one teacher rated it 3, 2 teachers rated it 4, and 8 teachers rated it 5. Teachers with a 3 MI implementation rating gave the question a mean of 4.5, teachers with a medium implementation rating gave it a 5, and teachers with a 1 implementation rating gave it a 4.

Question 13, students can represent what is learned when MI is applied rated a
mean of 4.4 with no teacher ratings of 1 or 2, but 1 teacher rated it at 3, 5 teachers rated it at 4, and 6 teachers rated it at 5. Teachers with an implementation of 3 rated its mean at 4.6, teachers with an implementation of 2 rated its mean at 4, and teachers with an implementation of 1 rated its mean at 4.2.

Question 24, I abandon the effort to cover everything and move toward uncoverage: “Less is more.” rated an overall mean of 4.1 with 1 teacher rating of 1, no rating as 2, 2 teachers rated it as a 3, 3 teachers rated it as a 4, and 6 teachers rated it as a 5. Teachers who implement MI at the 3 level gave it a mean of 4.3, teachers who implement at a 2 level gave it an overall mean of 4, and teachers who implement at a 1 level gave it a mean of 3.7.

Question 1 relating to curriculum content changes with an overall mean of 2.3, with 4 teachers gave it a 1 rating, 4 teachers gave it a 2, 2 teachers gave it a 4, and 1 teacher gave it a 5. Teachers with a high MI implementation rating of 3 gave the question an overall mean of 2.3, medium rating teachers of 2 implementation gave it a mean of 2, and lowest rating implementers of 1 gave it a mean of 2.2.

Multiple intelligences theory affects the number of facts learned, but that is in addition to the prerequisite facts dictated by a curriculum, which does not preclude those facts in the belief that broad coverage will cause an oversubundance of facts, lost to the student as soon as the test is over and superficiality as opposed to in-depth learning. Because of the emphasis on application of facts which earned a mean of 4.5, the reason for fact learning shifts to real-life application and more facts are part of the learning. 58% of the teachers gave this question the highest application of 5, 33% gave it a 4 rating, and 8% gave it a 3. No teachers rated it below 3 making a strong statement about application of facts when MI is implemented.

Students ability to represent what is learned when MI is applied received a high mean of 4.4 in teacher ratings. 50% gave it the highest implementation rating of 5, 41% gave it a rating of 4, and 12% gave it a 3. No teacher estimated this lower than 3. High
representation of what is learned gave testimony to deep learning and understanding of material to be able to take the material learned and represent it in another way. Rote learning did not enable further representation other than cursory learning.

Teachers gave a high mean score of 4.1 to teacher movement toward the policy that less is more when teaching and the effort to cover everything, supposedly in the entire array of a lesson available to the teacher, but not mandated by the curriculum. 50% gave this a 5 rating, 25% gave it a 4, 16% gave it a 3 and one teacher rated it at one.

A changed curriculum when MI is implemented received a very low mean of 2.3. 8% gave it a one, 8% gave it a 2, and the rest of the teachers rated it at 3 or below.

Research Question 8.

Are curricula and assessments used based upon what end states and final exhibitions are desired from the student, rated a high 4 overall mean.

Research question 8, are curricula and assessments used based upon what end states and final exhibitions are desired from the student, is answered by questionnaire questions 9, 8, 11, 13, 27, 25, 26, and 5, 6 and 7.

Question 9, students can explain a topic in a different way when MI is applied rated an overall mean of 4.8 with teachers at level 3 implementation rating a mean of 4.8; teacher level 2 rated a mean of 5; teacher level 1 rated a 4.5. No teacher rated the question 1, 2 or 3 and 3 rated it 4, and 9 rated it 5.

Question 8, assessment is aimed at students' genuine understanding rather than passing a test, received an overall teacher mean of 4.4. No teacher rated it low at 1, 1 teacher rated it 1, one teacher rated it 3, 2 teachers rated it 4, and 8 teachers rated it 5. Teachers with a 3 MI implementation rating gave the question a mean of 4.5; teachers with a medium implementation rating gave it a 5, and teachers with a 1 implementation rating gave it a 4. Assessment aimed at genuine understanding rather than passing a test received a mean of 4.4. 66% of the teachers rated it 5.
Question 11, students can generalize material learned when MI is applied received a mean of 4.4 with no teacher rating of 1, but 1 rated it at 3, 5 rated it at 4, and 6 rated it at 5. Teachers with a high implementation of 3 gave the question a mean of 4.6, and medium implementers gave it a mean of 4.5, and teachers with a low implementation of 1 gave it a mean of 4.

Question 13, students can represent what is learned when MI is applied rated a mean of 4.4 with no teachers rating of 1 or 2, but 1 teacher rated it at 3, 5 teachers rated it at 4, and 6 teachers rated it at 5. Teachers with an implementation of 3 rate its mean at 4.6, teachers with an implementation of 2 rate its mean at 4, and teachers with an implementation of 1 rate its mean at 4.2.

Question 27, The kinds of end states and final exhibitions expected of students are defined at the outset received a mean of 4.3 with no teacher rating of 1 or 2, 1 teacher rated it 3, 6 teachers rated it 4 and 5 teachers rated it 5. Teachers with a 3 level of implementation gave it a mean of 4.6, teachers with a 2 level gave it a 3.5, and teachers with a 1 level gave it a 4.5.

Question 25, concepts students should understand are delineated at the outset of the learning period rated a mean of 4.2 with no teacher rating of 1 or 2, 2 teachers rated it at 3, 6 teachers rated it at 4 and 4 teachers rated it at 5. Teachers with an implementation level of 3 rated the question with a mean of 4.3, and teachers with an implementation level of 2 rated the mean at 4.5, and teachers with an implementation level of 1 rated the mean at 3.7.

The effect MI has on choice is answered by question 26, the kinds of performances to be exhibited upon completion of the lesson are defined at the outset with an overall mean of 4.2 with no teacher rating of 1 or 2, but 2 rated it at 3, 6 rated it at 4, and 4 rated it at 5. Teachers with an implementation rating of 3 gave it an overall mean of 4.5, teachers with a rating of 2 gave it a 3.5 mean, and teachers with a rating of 1 gave it a mean of 4.
Question 5, assessment through portfolios is common practice rated a mean of 3.8 with 1 teacher rating it 1, 1 teacher rated it 2, 3 teachers rated it 3, 2 teachers rated it 4 and 5 teachers rated it 5. Teachers rating 3 in implementation of MI rated the question at a mean of 4, teachers rating 2 in implementation of MI rated the question at a mean of 3, and teachers rating 1 in implementation of MI rated the question at a mean of 2.

Question 6, assessment through progress reports is common classroom practice rated an overall mean of 3.6 with 1 teacher rating it 1, 1 teacher rated it 2, 4 teachers rated it 3, 1 teacher rated it 4, and 5 teachers rated it 5. Teachers rating 3 in implementation of MI rated the question at a mean of 4.6, teachers rating 2 in implementation of MI rated the question at a mean of 3, and teachers rating 1 in implementation of MI rated the question at a mean of 3.

Question 7, assessment through student profiles is common classroom practice rated an overall mean of 2.8 with 4 teachers rating it 1, 1 teacher rated it 2, 3 teachers rated it 3, 2 teachers rated it 4, and 2 teachers rated it 5. Teachers rating 3 in implementation of MI rated the question at a mean of 4, teachers rating 2 in implementation of MI rated the question at a mean of 2.5, and teachers rating 1 in implementation of MI rated the question at a mean of 4.

Curricula are based upon what end states and final exhibitions are desired from the student. Students' ability to explain a topic in a different way when MI is applied received a high mean of 4.8 with 75% rating it 5, and 25% rating it 2.

Students can generalize material learned when MI is applied received a mean of 4.4 with 50% of the teachers giving it a rating of 5 and 41% giving it a 4.

Concepts students should understand are delineated at the outset of the learning period was given a mean rating of 4.2 with 33% rating it at 5, 50% rating it at 4, and 16% rating the question at 3.
Teachers gave the kinds of performances to be exhibited upon completion of the lesson as defined at the outset a mean of 4.2 with 33% rating it at 5, 50% rating it at 2, and 16% rating it at 3.

The second part of question 8, assessments are based upon what end states and final exhibitions are desired from the student, finds assessment through portfolios as common practice rating a mean of 3.8 with 41% rating it at 5, 16% rating it at 4, 25% rating it at 3, 8% at 2, and 8% at one.

Assessment through progress reports is common classroom practice rated a mean of 3.6 with 41% rating it at 5, 8% rating it at 4, 33% rating it at 3, 8% rating it at 2, and 8% rating it at one.

Assessment through student profiles as common classroom practice rated a mean of 2.8 with 16% rating it at 5, 16% rating it at 4, 25% rating it at 3, 8% rated it at 2 and 33% rated it as one, an overall low rating with little indication of implementation.

Research Question 11.

How has MI theory changed how the teacher looks at students and their potential rated a mean of 4.1 which is high.

Research question 11, how has MI theory changed how the teacher looks at students and their potential, is answered with questions 19, 28, 18, 17, 23, 21, and 22.

Questionnaire response 19, we brainstorm in the MI classroom, with a mean of 4.8 and no teacher rating of 1, 2 or 3, but 3 teachers rated it 4, and 9 teachers rated it 5, a very high rating and salient feature of the MI landscape in the classroom in teachers of high implementation of 3 with a 4.8 mean, medium implementation of 2 with a 4.5 mean, and low implementation of 1 with a mean of 4.7.

Question 28, I give attention to all kinds of performances that can reveal understanding rated an overall mean of 4.6 with no teacher rating of 1 or 2, 1 teacher rated it 3, 2 teachers rated it 4, and 9 teachers rated it 5. Highest teacher implementers of
3 gave it a mean of 5, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.2.

Question 18, we consider possibilities in the MI classroom rated an overall mean of 4.5 with no teacher rating of 1 or 2, 2 teachers rated it 3, 2 teachers rated it 4, and 8 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4.5, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5.

Question 20, we select appropriate activities for the MI classroom rated a mean of 4.6 with no teachers rating of 1, 2, or 3, but 5 teachers rated it 4, and 7 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4, medium rated implementers gave it a mean of 4.5, and lowest teacher implementers gave it a mean of 4.5. Teachers rated selection of appropriate activities for the MI classroom at a mean of 4.6 with 58% rating it at 5, and 41% rating it at 4. This is a very high mean with most teachers agreeing to its implementation.

Question 23, I translate the material to be taught from one intelligence to another rated an overall mean of 3.8 with no teachers rating of 1, 2 teachers rated it 2, 2 teachers rated it 3, 5 teachers rated it 4, and 3 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4.5, medium rated implementers gave it a mean of 4, and lowest teacher implementers gave it a mean of 2.5. Translation of the material to be taught from one intelligence to another rated a mean of 3.8 with 25% rating it at 5, 41% rating it at 4, 16% rating it at 3, and 16% rating it at 2.

Question 17, I ask key MI questions rated a mean of 3.8 with no teachers rating of 1, 1 teacher rated it 2, 3 teachers rated it 3, 5 teachers rated it 4, and 3 teachers rated it 5. Highest teacher implementers of 3 gave it a mean of 4, medium rated implementers gave it a mean of 3.5, and lowest teacher implementers gave it a mean of 3.7.

Question 21, we set up a sequential plan for the MI classroom rated an overall mean of 3.4 with no teacher rating of 1, 3 teachers rated it 2, 2 teachers rated it 3, 6
teachers rated it 4, and 1 teacher rated it 5. Highest teacher implementers of 3.6 gave it a mean of 4.5, medium rated implementers gave it a mean of 2.5, and lowest teacher implementers gave it a mean.

Question 22 we implement the plan rated a mean of 3.4 with no teacher rating of 1, 3 teachers rated it 2, 6 teachers rated it 3, 2 teachers rated it 4, and 1 teacher rated it 5. Highest teacher implementers of 3.6 gave it a mean of 4.5, medium rated implementers gave it a mean of 2.5, and lowest teacher implementers gave it a mean.

Teachers rated brainstorming in the MI classroom at a very high mean of 4.8 with 75% of teachers rating it 5, and 25% rating it 4. Teachers rated giving attention to all kinds of performances that can reveal understanding at a mean of 4.6 with 75% rating it at 5, 16% rating it at 4, and 8% rating it at 3.

Teachers rated selection of appropriate activities for the MI classroom at a mean of 4.6 with 58% rating it 5, and 41% rating it 4. This is a very high mean with most teachers agreeing to its implementation.

Consideration of possibilities in the MI classroom rated a mean of 4.5 with 66% rating it 5, 16% rating it 4, and 16% rating it 3.

Translation of the material to be taught from one intelligence to another rated a mean of 3.8 with 25% rating it 5, 41% rating it at 4, 16% rating it 3, and 16% rating it 2.

Teachers rated asking key MI questions at a 3.8 mean with 25% reporting a 5 implementation, 41% rating it 4, 25% rating it at 3, and 8% rating it 2.

Setting up a sequential plan for the MI classroom rated a 3.4 mean with 8% giving it a 5, 50% rating it 4, 16% rating it 3, and 25% rating it a 2.

Implementation of the plan received a mean of 3.4 with 8% rating it a 5, 16% rating it a 4, 50% rating it a 3, and 25% rating it a 2.

Translation of the material to be taught from one intelligence to another rated a mean of 3.8 with 25% rating it 5, 41% rating it at 4, 16% rating it 3, and 16% rating it 2.
Setting up a sequential plan for the MI classroom rated a 3.4 mean with 8% rating it a 5, 50% rating it a 4, 16% rating it a 3, and 25% rating it a 2. Implementation of the plan received a mean of 3.4 with 8% rating it a 5, 16% rating it a 4, 50% rating it a 3, and 25% rating it a 2.

Research Question 3.

How does multiple intelligences change curriculum content, delivery, choice and chronology rated a mean of 3.1 which is in the medium range.

Research question 3, how does multiple intelligences change curriculum content, delivery, choice and chronology is answered with question 1, when MI is implemented classroom curriculum content changes with an overall mean of 2.3 and 4 teachers rated it at 1, 4 teachers rated it at 2, 2 teachers rated it at 3, 1 teacher rated it at 4, and 1 teacher rated it at 5. Teachers with an overall implementation of 3 gave it a mean of 2.3, teachers with an implementation of 2 gave it a mean of 2, and teachers with an implementation of 1 gave it a mean of 2.2.

How does multiple intelligences affect delivery is answered by question 2, when MI is implemented my delivery of material changes which was given an overall mean of 4.3 with 5 teachers rating the question 1 or 3, but 1 teacher rated it 2, 5 teachers rated it 4, and 6 teachers rated it 5. Teachers with a high implementation of 3 gave it a mean of 4.5, teachers with a medium implementation rating of 2 gave it a mean of 5, and teachers with a low implementation of 1 gave it a mean of 4.5 which are very high ratings indicating a great affect in the MI classroom.

The effect MI has on choice is answered by question 26, the kinds of performances to be exhibited upon completion of the lesson are defined at the outset with an overall mean of 4.2. No teacher rated it 1 or 2, but 2 rating it at 3, 6 rated it at 4, and 4 rated it at 5. Teachers with an implementation rating of 3 gave it an overall mean of 4.5, teachers with a rating of 2 gave it a 3.5 mean, and teachers with a rating of 1 gave it a mean of 4
The effect of MI has on chronology of curriculum is answered by question 4, MI implementation changes curriculum chronology with an overall mean of 2.5. 3 teachers rated it 1, 4 teachers rated 2, 2 teachers rated it 3, 2 teachers rated it 4, and 1 teacher rated it 5. With teacher implementation of 3 a mean of 2.8 was earned, with a 2 implementation of mean of 1.5 was earned, and with a 1 implementation a mean of 2.5 was earned.

Multiple intelligences changes curriculum content to an extent that students can explain a topic in a different way when MI is applied which has the highest mean of 4.8 and 75% of teachers rated it 5, and 25% rated it at 4 on the Likert scale of 1 to 5. This is the highest application for the entire questionnaire. Here the difference between the how and what when discussing curriculum in the classroom becomes essential. Curriculum content change rates very low (what), but students’ ability to explain a topic in a different way rates highest of all change (how), leaving the impression that teacher delivery and relationship to the students changes to cause this effect. This is borne out in teachers’ reporting: When MI is implemented delivery of material changes received a high mean of 4.3 with 50% of teachers giving this a 5 and 41% giving it a 4. Only one teacher rated it 2.

Because the kinds of exhibitions and outcomes are defined at the outset, choice is guided by those earlier decisions, as well as a concern for the curriculum guides which can be inferred from the low application of curriculum change. The kinds of performances to be exhibited upon completion of the lesson are defined at the outset reached a mean of 4.2. 30% rated it a 5, 50% rated it a 4, and 20% rated it a 3.

The curriculum chronology is found to have little effect when MI is implemented with a mean of 2.5 and only one teacher giving it a rating of 5.

Research Question 1.

What is the curriculum now and what was it before multiple intelligences rated a medium 2.3 mean.
The questions that pertain to research question one, what is the curriculum now and what was it before multiple intelligences, are 1 relating to curriculum content changes with an overall mean of 2.3, and teacher choices of 4 teachers giving it a 1 rating, 4 teachers giving it a 2, 2 teachers giving it a 4, and 1 teacher giving it a 5.

Teachers with a high MI implementation rating of 3 gave the question an overall mean of 2.3; medium rated teachers of implementation gave it a mean of 2; lowest rated implementers of 1 gave it a mean of 2.2.

Ratings of question 3 dealing with choice of curriculum changes had an overall mean of 2.3 with 5 teachers rating it 1, 3 teachers rated it 2, 1 teacher rated it 3, 1 teacher rated it 4, and 2 teachers rated it 5. Teachers with an implementation rating of 3 gave the question an overall mean of 3, teachers with an implementation rating of 2 gave it an overall mean of 1, and teachers with an implementation of 1 gave it an overall mean of 2.

Another question relating to question 1, pertains to changes in curriculum chronology rated an overall mean of 2.5 with 3 teachers rating it 1, 4 teachers rated it 2, 2 teachers rated it 3, 2 teachers rated it 4, and 1 teacher rated it 5.

Teachers with a high implementation 3 gave it an overall mean of 2.8, teachers with a medium implementation rating of 2 gave it a mean of 1.5, and teachers with a low implementation of 1 gave it a mean of 2.5.

The change in curriculum when multiple intelligences is applied, shows a 2.3 mean of a possible 5. Curriculum content change shows a mean of 2.3 of a possible 5 when MI is applied, and the curriculum chronology change shows a mean of 2.5 of a possible 5 when MI is applied. These were indicated as the lowest means of all the applications in the twenty-eight question questionnaire. One teacher gave curriculum change a high implementation, but 33% gave it the lowest implementation rating and another third the second lowest implementation rating. Two teachers gave curriculum changes the highest implementation on the scale, but 5 or 42% gave it the lowest rating of one. Curriculum
chronology had a slightly higher mean of 2.5 than the other curriculum questions, but only one teacher giving it the highest rating of 5, and 25% gave it the lowest rating of one. Direct curriculum changes concerning content, change and chronology had a very weak rating.

Section C: Four Domains of Study

Section B examined the 13 research questions with regard to means, teacher ratings of questions effect on curriculum, and discussion of the effect on change in curriculum giving a specific picture of how multiple intelligences effects curriculum in language arts classes at a middle school level.

Section C of Chapter 4 will coordinate quotations from teacher interviews with the broad domains of inquiry: student performance, pedagogy, curriculum, and assessment, in relation to research questions' overall means either supporting or disproving changes in curriculum when MI is implemented. Connections and disconnections among research questions, questionnaire responses, and expectations for curriculum when MI is implemented will be discussed.

First the domain of inquiry will be given with the research question and the mean for the question. The overall mean resulting from addition of all listed questionnaire questions' means, and divided by the number of questions, will give an overall mean for questionnaire B's selected questions. The quotations pertinent to the domain of inquiry follow a factual interpretation of the quotation, and finally a discussion of implementation levels of questions examining the domain of inquiry will conclude the section.

Student Performance.

Student performance is effected by the student centered progressive curriculum reflecting real life experience. This statement relates to Research Question 9 with a very high overall mean of 4.6.

Five questionnaire questions relate to student performance:

28 I give attention to all kinds of performances that can reveal understanding 4.6
We select appropriate activities for the MI classroom  4.6

Students can find evidence and examples for their research when MI is applied  4.4

Students can generalize material learned when MI is applied  4.4

Students can apply what is learned when MI is applied  4.5

These responses are within very high to high means, and tell of a student centeredness in producing the curriculum and learning about life through the curriculum. The overall mean for those 5 questions is 4.5, which is a very high implementation effect. Some teacher quotations further enlighten this topic:

There are different teacher-student relationships and student-student relationships, and improved social skills and interpersonal/intrapersonal skills lead to higher learning:

I don’t know about you but I think[ when social interaction is going on] that’s when some of the finest learning goes on.

There are some in here who really despise each other and you wouldn’t know it. They fight out on the playground constantly. That’s because in here it is theirs, they each have a part in it. You try to create. You can’t always do it. I’ve tried to move this [multiple intelligences] into math, and it’s been harder, but it works beautifully. [...]I would hope that there is a better relationship and better rapport and better learning going on because you’re trying to deal with everybody’s needs. That’s hard to do.

Teachers are concerned with application of learning to students’ lives:

Research today shows that the students in high school and middle school will have 3 different and distinct careers in their lives, and that’s because of technology. Things are changing so quickly, that what they know for the first fifteen years of their career will be obsolete, and won’t even be there for some of them, so, so what we are seeing is 3 careers.

My hope, and my intent, what I feel my purpose is, is to help them think through to solutions, and to use what they know are their best tools available. And for each person it is varied, though with Gardner we know we all have the same intelligences, but some we have worked more to the fore than others, and that’s their strength and they have to know how to get to that strength and utilize it.

In the beginning of the year we do some work on intelligences and I tell them what I think the intelligences are, and we put them on the board, and I ask them, ‘what do you think, how are you smart?’ So we begin to
put it on the board and we usually end up having them all there, and then I ask them to list the top 3 that they think they are primarily. Then I ask them if there was one you would like to develop more, what is it, because we have them all, we just don't choose to develop them. Then I tell them during the year to target an intelligence they don't think they have an intelligence in, and try that and see if that doesn't open up a new avenue to them, because the solution of problems is going to be the main thrust for their lives.

Certain questions measure how student performance relies on curriculum choice.

Student performance is reliant upon curriculum choices, assessment and pedagogy as expressed in Research Question 12 with an overall mean of 4.6

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<td>19</td>
<td>We brainstorm in the MI classroom</td>
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<td>20</td>
<td>We select appropriate activities for the MI classroom</td>
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<td>28</td>
<td>I give attention to all kinds of performances that can reveal understanding</td>
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<td>18</td>
<td>We consider possibilities in the MI classroom</td>
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<td>8</td>
<td>Assessment is aimed at genuine understanding rather than passing a test</td>
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<td>I translate the material to be taught from one intelligence to another</td>
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The overall mean for these 9 questions related to student performance is 4.2, a high rating, lowered from the highest rating by the 3 curriculum choices which have low effect in regard to student performance.

Teachers and students talk to each other and create strong, clear goals so there is more teacher-student interaction:

Certainly working with multiple intelligences enhances your relationship with your students because you are functioning on a number of different levels...you are functioning with them on many levels, I don’t just mean the teacher himself or herself. So there’s a lot of interaction in areas there might not have been before.

I have classified children ... I like to do things with them. You know, let’s walk through this, talk to each other, you know...how do we
go from here to there? I’m just consciously trying to use... it’s interesting a few years ago I had a mother call me to say her son said if I could just figure out what she wants, but every couple of days she changes things.

Certain questions pertain to student performance. The overall mean for the 5 questions is a very high 4.5; the highest rated changes are in student performance in areas of production, application, and explication of material learned in an MI classroom. 9 Students can explain a topic in a different way when MI is applied 4.8 12 Students can apply what is learned when MI is applied 4.5 10 Students can find evidence and examples for their research when MI is applied 4.4 11 Students can generalize material learned when MI is applied 4.4 13 Students can represent what is learned when MI is applied 4.4

Research Question 4 with means of 4.4 measured how assessment through portfolios, progress reports, profiles and emphasis on genuine understanding allowed students to learn to explain, find evidence and examples, generalize, apply and represent a topic in a different way. (Perkins and Blythe, 1994), question 7 with a mean of 4.3 measured how this theory affects the number of facts learned in the belief that broad coverage will cause an overabundance of facts lost to the student as soon as the test is over, and superficiality as opposed to in-depth learning, question 8 with a mean of 4 answered how curricula and assessments are used based upon what end states and final exhibitions are desired from the student, question 9 with a mean of 4.4 answered how real life experience is reinforced by a progressive curriculum that is student centered, and question 13 with an overall mean of 3.9 answered the question is the curriculum knowledge rich, constructivist, person-centered and thematic?

Curriculum.

Research question 13 measured curriculum and had a mean of 4.4 The following list presents those questions that measured curriculum, followed by their mean rating. 9 Students can explain a topic in a different way when MI is applied 4.8 19 We brainstorm in the MI classroom 4.8
I give attention to all kinds of performances that can reveal understanding. 4.6

Concepts students should understand are defined at the outset 4.2

The kinds of performances to be exhibited upon completion of the lesson are defined at the outset 4.2

The kinds of end states and final exhibitions expected of students are defined at the outset 4.3

Units focus on a specific topic 4.0

We select appropriate activities for the MI classroom 4.6

We set up a sequential plan for the MI classroom 3.4

We implement the plan 3.4

When MI is implemented curriculum content changes 2.3

When MI is implemented choice of curriculum changes 2.3

The overall mean for these twelve questions is 3.9, a high effect lowered by curriculum questions.

New MI techniques are changing teachers’ classroom approaches and celebrating differences keeping teachers and students interested while learning:

Well just to be aware the variety you have in your classroom; how are you going to address those needs. How are you going to reach all those kids. You’ve got to just use a variety of techniques and tools and again, it’s more interesting for me. I’ve been doing this a long time so I don’t want to get stale.

Research question 1 measured curriculum and had a medium mean of 2.3. The following list presents those questions that measured curriculum change, followed by their mean rating.

3 When MI is implemented choice of curriculum changes 2.3

2 When MI is implemented my delivery of material changes 4.3
When MI is implemented curriculum content changes 2.3

MI implementation changes curriculum chronology 2.5

The overall mean for these 4 questions is 2.8 which is a medium effect upon curriculum

Curriculum guides are moving into a less directional mode to allow variability in the pedagogy and content of language arts classes:

Just recently we completed the short story, “The Masque of the Red Death” by Edgar Allen Poe and it is a difficult story. I read it to them and I explained it to them. [...] I gave them a variety of choices that [were different] and there are questions they need to answer but they can either do a pencil and paper in terms of a song, a paper, art, or they can do a skit [with] really creative videos or dioramas [...]. [...] if I were looking at the old curriculum guide I would say it changed [...] It [the curriculum guide] was very delineated if you would look at it.

You know you do this this way the nouns here...you do this...you do that...and it was very boxing. You were boxed in.

Curriculum guidelines are followed:

I’m told what to do from September to the end of the year. I say here’s what we have to do. How can we get this all in? Do you mind if I hand out some dittoes. Maybe 2; I hand out 4...they hate it.

Research question 2 is answered by question 19 with a mean of 4.8.

We brainstorm in the MI classroom 4.8

Students, given the learning parameters, are asked to direct and control their own learning, including the pace of learning:

Some of them are [special ed students]. Some others were in group too, but they were behind. They all work at their own pace. If they want to get involved in the music and drawing and map-making, then they’re responsible for the reading [The Hobbit] at home, or vice versa; they can split it or do anything they want. It gives them a little control over the whole thing. They have to get down to business. They can’t play all the time. If they do vocabulary, they work here or at home, if they play music, they switch off; just because you opted for one [MI approach] does not mean you are stuck with it.
More material is covered when MI is applied:

There isn’t less material; if anything, I cover more material. That hasn’t changed drastically at all...if anything there is more depth...the depth of it, the quality of it, the substance of it. We’ve moved from polished cotton to velvet.

Research question 3 measures how curriculum content and performances are changed with MI. The overall mean is 3.3.

1 When MI is implemented curriculum content changes  2.3
2 When MI is implemented my delivery of material changes  4.3
4 MI implementation changes curriculum chronology  2.5
26 The kinds of performances to be exhibited upon completion of the lesson are defined at the outset  4.2

The overall mean for these 4 questions is a medium rating of 3.3

Classrooms combine children of differing abilities:

With the heterogeneous grouping it is very difficult [to let each child express himself or herself]; I have a 142 IQ in here, I have a 72 IQ in here.[ ]...and this makes it possible. The moving and changing makes it possible to do it.

[...]when they choose something and that’s their thing, but where the others see that’s fun they’ll grab it. Like the map guy went over by the music.

All intelligences are used to teach literature, and dittoes are eliminated or held to a minimum:

When they saw the thickness of the book, they panicked. They thought it would be dittoes. I said, no, no, no it’s not going to work like that. Let’s think up some ideas. First they found the songs, songs with no tune to them taken from The Hobbit. So what do you do with them? The keyboards my son’s… []But then they started bringing in the tambourines, and it became an event.

Research question 7 with a mean of 3.8 measures student understanding and application of what is learned through these questions followed by their mean rating:

8 Assessment is aimed at genuine understanding rather than passing a test  4.4
Students can apply what is learned when MI is applied 4.5

Students can represent what is learned when MI is applied 4.4

I abandon the effort everything and move toward uncoverage: Less is more 4.1

The overall mean for these 4 questions is a high 4.3

Curriculum becomes deeper:

There's much more depth to what I can present and what is assessed when I use intelligences, rather than a straight form of regurgitation of facts...there's much more depth to the material. Students are forever bringing in ar2rk that impressed them about something we talked about in class, or something they have done. So I think there is a richness to it.

All students become interested in activities and learning increases

"[...]Which proves we have them all. At the beginning he figures, which will be easier? I don't know what they think when they choose these things, but this is all moveable.

As I said in the beginning they are not stuck with anything.

The overall mean for these 9 questions is a high 3.5 rating for effect on curriculum.

We select appropriate activities for the MI classroom 4.6

We consider possibilities in the MI classroom 4.5

Concepts students should understand are devised at the outset 4.2

Units focus on a specific topic 4.0

We set up a sequential plan for the MI classroom 3.4

We implement the plan 3.4

Units focus on a specific objective 3.1

MI implementation changes curriculum chronology 2.5

When MI is implemented choice of curriculum changes 2.3

Research Question 1, 3, 7, 8, 9, ten, 11, 12, 13 all specifically respond to questions pertaining to curriculum.

1. What is the curriculum now? What was it before multiple intelligences?
3. How does multiple intelligences change curriculum content, delivery, choice, and chronology.

7. Does this theory affect the number of facts learned in the belief that broad coverage will cause an overabundance of facts, lost to the student as soon as the test is over and superficiality as opposed to in-depth learning?

8. Are curricula and assessments used based upon what end states and final exhibitions are desired from the student?

9. Is real life experience reinforced by a progressive curriculum that is student centered?

10. Do teachers put away the didactic lecture approach of the traditional classroom?

11. How has MI theory change how the teacher looks at students and their potential?

12. Do students specific intelligences for the basis for curriculum choices, assessment and pedagogy?

13. Is the curriculum knowledge rich, constructivist, person-centered and

Assessment.

Research Question 4 with a mean of 4.4 is measured by the following questions:

8 Assessment is aimed at genuine understanding rather than passing a test 4.4

10 Students can find evidence and examples for their research when MI is applied 4.4

11 Students can generalize material learned when MI is applied 4.4

12 Students can apply what is learned when MI is applied 4.5

13 Students can represent what is learned when MI is applied 4.4

The overall mean for these 5 questions is a high 4.4

Teachers are concerned with activities chosen by students to assess their intelligences:
basically from what they choose to do and their assessments. That tells me what they like to do. If one person picks to do a diorama...if another chooses to do a skit...if another chooses to do an essay which I was really surprised; a lot of kids wanted to do the essay... that pen and paper... you know write the essay.

[...] I say you are really going to do that? You can do something else.

Teachers do take interests and performances into account for direction

I haven’t gotten to the point where I’m including the students in creating curriculum. I mean, I definitely take into consideration their interests and what I think they need to learn and by looking at different writing assignments, and how they are performing in the class, that sort of directs me, but they don’t have a direct say like they don’t know they’re molding it. They are indirectly...[creating the curriculum].

Research Question 8 with a mean of 4 is answered with the following questions:

5  Assessment through portfolios is common classroom practice  3.8
6  Assessment through progress reports is common classroom practice  3.6
7  Assessment through student profiles is common classroom practice  2.8
8  Assessment is aimed at genuine understanding rather than passing a test  4.4
9  Students can explain a topic in a different way when MI is applied  4.8
11 Students can generalize material learned when MI is applied  4.4
13 Students can represent what is learned when MI is applied  4.4
25 Concepts students should understand are devined at the outset  4.2
26 The kinds of performances to be exhibited upon completion of the lesson are defined at the outset  4.2
27 The kinds of end states and final exhibitions expected of students are defined at the outset  4.3

Discrete parts of student participation increase learning when it is part of a pre-planned whole:
But to see the learning that was going on was so neat and they did their presentations and then when they were all finished, I said, Okay, now let's go back and see how this whole thing developed. You can be proud of this...Look what I have here...and we sat down and they said, "I did that?' "We did that?"

The following six questions aimed at assessment rated an overall mean of 3.8.

8 Assessment is aimed at genuine understanding rather than passing a test 4.4

27 The kinds of end states and final exhibitions expected of students are defined at the outset 4.3

26 The kinds of performances to be exhibited upon completion of the lesson are defined at the outset 4.2

5 Assessment through portfolios is common classroom practice 3.8

6 Assessment through progress reports is common classroom practice 3.6

7 Assessment through student profiles is common classroom practice 2.8

The following research questions 3, 4, 7, 8, 12, 13 pertained to the question of assessment.

3. How does multiple intelligences change curriculum content, delivery, choice, and chronology.

4. Has assessment through portfolios, progress reports, profiles and emphasis on genuine understanding allowed students to learn to explain, find evidence and examples, generalize, apply and represent a topic in a different way. (Perkins and Blythe, 1994).

7. Does this theory affect the number of facts learned in the belief that broad coverage will cause an overabundance of facts, lost to the student as soon as the test is over and superficiality as opposed to in-depth learning?

8. Are curricula and assessments used based upon what end states and final exhibitions are desired from the student?
12. Do students specific intelligences for the basis for curriculum choices, assessment and pedagogy?

13. Is the curriculum knowledge rich, constructivist, person-centered and thematic?

These quotations from interviews highlight teachers’ thinking on assessment.

Well what I have done—when I had done a similar story “The Tell-Tale Heart” you know little rubric things to assess them I had them create.
Yes, hand created things are part of the assessment process not necessarily pencil and paper test to...

The only thing I have them do pencil and paper is vocabulary tests.

Presentations, the writing of lyrics for songs, the production of music for an assessment. We have just finished a unit on Night which is Elie Weisel’s book about his experiences in concentration camps during the Holocaust, and for their assessment they were given a number of choices for their assessment. They could write lyrics, they could perform music, they could put on a skit, they could act it out. They could write a test, which becomes something a number of students like to do, cause they like that form and that organization. Other students were allowed to create poetry, personal poetry for it, some made movie posters, some made art work for it, and this became their assessment which for me is very gratifying because as a teacher it varies what I look at, it varies what I have to respond to, and that’s wonderful cause that keeps me excited, and it keeps me fresh in what I’m doing, plus it allows them to work within their strengths.

“I think it’s a combination and variation that we do… a lot of paper and pencil thing. We have writing portfolios. Their given tests at the end of chapters, but we also do things like skits and presentations and again working in groups like the literature circles. We just did some skits on feudalism in social studies and the children were allowed to, you know, select something that they wanted to print and bring into the class and some of them were wonderful, but I had more fun with the video camera just videotaping them as they were preparing the 3 days before their presentation. Because just watching them in their groups and coming up with ideas: ‘No, let’s try this.’ ‘Let’s do it this way.’ and there was noise and confusion and paper and everything all over.

Pedagogy.

Research question 5 is addressed in this teacher’s words which indicate a movement by the teacher into a holistic approach to disciplines:
...I talk to many teachers, and I think we departmentalize everything. See we work with what we call connections, we connect everything. They have these themes that go constantly through things. It’s so hard to do. Until you realize it isn’t that hard to do if you let them [the students] do it. But sometimes we get hung up...oh if we do that we won’t get finished, we won’t get through.
The only thing I know is what I have to do and they know what I have to do. I present it to them as that.

Research question 6 with an overall mean of 4.4 is addressed by question 14, do materials in my classroom appeal to all intelligences.

Teachers see a movement away from fact learning and more application of skills

[...]I want to see what they have learned, not just try to test them in a way that would be easiest for me. I’m not interested in that. I really am interested in what they have learned and the application of those skills are important.

Research question 10 with an overall mean of 4.7 is measured by these questions:

2 When MI is implemented my delivery of material changes 4.3
18 We consider possibilities in the MI classroom 4.5
19 We brainstorm in the MI classroom 4.8
28 I give attention to all kinds of performances that can reveal understanding 4.6

The overall mean for these 4 questions is a very high 4.5.

Teacher’s world view has changed in relation to teaching mission:

We’re supposed to be helping them to succeed and not only academically. They need to survive in this classroom so they can go out into that world and say, ‘Hey, I accomplished something today, and I am proud.’

Classroom management is less traditional, and initiative has changed, alternate classroom activities are welcome, students interact and direct their activities.

We just did some skits on feudalism in social studies and the children were allowed to...select something that they wanted to print and bring into the class and some of them were wonderful, but I had more fun with the video camera just videotaping them as they were preparing the 3 days before their presentation. Because just watching them in their groups
and coming up with ideas: ‘No, let’s try this.’ ‘Let’s do it this way.’ and there was noise and confusion and paper and everything all over.

Teachers’ goals are different because their approach is different:

You know just do that, we’ll do different than that, but I tell the kids you know we’re going to do different things. They set a goal for the month and at the end of the month, we look at those sheets again. They write down what they want to achieve for that month. One thing I say...that’s okay just one thing; you don’t have to do a lot of things. Then at the end of the month, I give them back their papers and I say, “think, about what you have achieved. This month, did you reach your goal? Do you want to use the same goal for a second month?”

Research Question 11 with a mean of 4.3 is addressed in these questions.

17 I ask key MI questions 3.8
18 We consider possibilities in the MI classroom 4.5
19 We brainstorm in the MI classroom 4.8
20 We select appropriate activities for the MI classroom 4.6
21 We set up a sequential plan for the MI classroom 3.4
22 We implement the plan 3.4
23 I translate the material to be taught from one intelligence to another 3.8
28 I give attention to all kinds of performances that can reveal understanding 4.6

Teachers and students talk to each other and create strong, clear goals so there is more teacher-student interaction.

Certainly working with multiple intelligences enhances your relationship with your students because you are functioning on a number of different levels...you are functioning with them on many levels, I don’t just mean the teacher himself or herself. So there’s a lot of interaction in areas there might not have been before.

Teachers are inclusive of all learners of different abilities:

We have heterogeneous groups and so you have such a mixture in your class that are so...I’m constantly adjusting and rearranging do I want to present this...how can I present this better...you know ...can I do it
better? Am I reaching all the children? So I'm constantly changing what I'm doing in the classroom so being a teacher, [...] you go home and think about the kids... did I talk to this child today... did I reach them... did he understand that point? This kind of thing.

The mean for the following seven questions is a high 4.2 which related to teachers' estimate of change in delivery of material.

19 We brainstorm in the MI classroom 4.8

28 I give attention to all kinds of performances that can reveal understanding 4.6

2 When MI is implemented, my delivery of material changes 4.3

14 Materials in my classroom appeal to all intelligences 4.2

24 I abandon the effort to cover everything, and move toward uncoverage: Less is more 4.1

17 I ask key MI questions 3.8

23 I translate the material to be taught from one intelligence to another 3.8

Research Questions 2, 3, 6, 7, 9, 10, 11, 12, 13 all related to changes in pedagogy.

2. How has middle school subject matter in language arts changed since multiple intelligences has become a focus and guiding principle?

3. How does multiple intelligences change curriculum content, delivery, choice, and chronology.

6. What materials does the teacher use to appeal to all the intelligences? What evidence of these materials is evident in the classroom?

7. Does this theory affect the number of facts learned in the belief that broad coverage will cause an overabundance of facts, lost to the student as soon as the test is over and superficiality as opposed to in-depth learning?

9. Is real life experience reinforced by a progressive curriculum that is student centered?

10. Do teachers put away the didactic lecture approach of the traditional classroom?
11. How has MI theory change how the teacher looks at students and their potential?

12. Do students specific intelligences for the basis for curriculum choices, assessment and pedagogy?

13. Is the curriculum knowledge rich, constructivist, person-centered and thematic?

These quotations from interviews give teachers' views on change.

"There's much more depth to what I can present and what is assessed when I use intelligences, rather than a straight form of regurgitation of facts...there's much more depth to the material. Students are forever bringing in ar2ik that impressed them about something we talked about in class, or something they have done. So I think there is a richness to it. There isn't less material; if anything, I cover more material. That hasn't changed drastically at all...if anything there is more depth...the depth of it, the quality of it, the substance of it. We've moved from polished cotton to velvet."

I guess you would have to say I am not a traditional teacher; I would have to say I am not the sage on the stage, but the guide on the side. And so my relationship with students has always been good and strong because they don't see me as a person who is constantly judgmental; they see other material that's been created in the same intelligences of their strength, and they make the comparisons themselves without me making the comparisons. Certainly working with multiple intelligences enhances your relationship with your students because you are functioning on a number of different levels...you are functioning with them on many levels, I don't just mean the teacher himself or herself. So there's a lot of interaction in areas there might not have been before.

Language arts is the perfect venue...the perfect venue, because it pervades every other discipline. If you aren't artful with your language, you can't explain the math problem, you can't work through the science experiment. So I have the perfect avenue to show them how it fits in every avenue of their lives. I like that.

This is a district that really likes to see you try new things. Sometimes new things that are not going to work, and that's fine. You know a teacher has her or his own repertoire, and it is made up of many things: it is a palette. You might keep something from Bloom's Taxonomy, you might keep something from anticipatory set, something like that. But this is not a theory. This is based upon what each of us has inside of us.

"I would like to think that I am in the refinement/integration area. I've been teaching a long time and I try to use it in my teaching when I prepare to be aware of the the children and their needs...need the visual...need the
auditory and all that. The ones you want to stimulate more provocative
questions so I'd like to think I'm in refinement.
Well, we have heterogeneous groups and so you have such a mixture in
your class that are so... I'm constantly adjusting and rearranging do I want
to present this...how can I present this better...you know...can I do it
better? Am I reaching all the children? So I'm constantly changing what
I'm doing in the classroom so being a teacher, you know what that's like,
you go home and think about the kids...did I talk to this child today...did I
reach them...did he understand that point? This kind of thing. So even
within my social studies groups, I know I have a range and have to appeal
to him differently. So at the board we do work. I give them study sheets
just a lot of different things. Also it keeps my job more interesting. I don't
want to do the same thing every day. So I don't know if that's really what
you meant. I want to change and keep fresh for myself and reach all the
kids, too.

Well, there are days when there's a teacher at the front of the
classroom and other days facilitating with students working in groups.

Well just to be aware the variety you have in your classroom; how
are you going to address those needs. How are you going to reach all those
kids. You've got to just use a variety of techniques and tools and again, it's
more interesting for me. I've been doing this a long time so I don't want to
get stale.

I don't use MI in everyday routine I'll be honest with you, um,
more spread out intermittently I use it a lot with assessment or I'll try to
use it with my delivery of instruction but I don't put it on a daily basis.

Our curriculum guide if you've seen it is very open. It gives us a lot
of freedom.
It reminds me a lot of cooperative learning, you know, more of a facilitator
role you have as a teacher. It reminds me a lot of cooperative learning, you
know, more of a facilitator role you have as a teacher. It's Mrs. ___ sitting
on the couch back here with the kids all around her sort of facilitating.

You know I think you have to look at everything almost a gestalt.
Something that you see as one big picture and what brings to mind last
year. We did "Meet the Authors" and they researched an author, and a mini
I-Search then put on a talk show with the whole group. Throughout that
maybe I did not teach them about a particular author or how to write a
certain thing, but it came about in the process.

Section D Expectations for Curriculum

Section C examined 4 broad domains of inquiry: student performance, pedagogy,
curriculum, and assessment in relation to research questions, highlighting teacher
interviews to examine factual events in teachers' own words.
Section D will discuss expectations for curriculum when MI theory is implemented and findings discussed in previous sections.

These elements of curriculum, expectations of what should happen to curriculum when multiple intelligences is applied, are based on the researcher’s reading connected to multiple intelligences. The eleven tenets discussed come from Howard Gardner on Implications for Curriculum (Gardner, 1993a). This discussion of each possible finding in an examination of curriculum when MI is implemented is based on findings from sections B and C in this dissertation.

To answer the question, do teachers educate for understanding, it was found that the highest implementations in MI middle school language arts classes center around understanding through appealing to individual students’ strengths and specific intelligences. Subject matter has changed with MI implementation reflecting real life experience for greater student interest and involvement in their own learning.

To answer the question is there a foreshortening of curriculum it was found that change in curriculum when MI is implemented rated the lowest of all the research questions from highest to lowest implementers in the middle school language arts classes. Teachers stay within the curriculum guidelines, but evidence suggests that they add to, rather than foreshorten the curriculum.

To answer the question do teachers abandon effort to cover everything- move toward “uncoverage” and adopt a “Less is more” philosophy toward curriculum it was found that teachers with a high and medium implementation rate this question at a mean of 4.3 and 4 respectively, but low implementation teachers rate it at a medium 3.7 mean, so the higher the teacher implementation of MI, the higher the value placed on this philosophy.

To answer the question do teachers define at the outset the kinds of concepts students should understand and the kinds of performances students should exhibit upon completion of school it was found that teachers rated this question at a mean of 4.3 which
is a high rating, with high implementers rating it at 4.6, medium implementers rating it at 3.5, and low implementers rating it at a mean of 4.5. High implementers rate this question in the very high implementation range of 4.6, placing a high emphasis on this approach to learning and building curriculum. Medium implementers were in the medium range with this question which was much lower than the low implementers who rated the question in the very high category along with the high implementers.

To answer the question are “end states” and final exhibitions the basis on which curricula and assessments are devised it was found that MI implementation does not highly effect the amount covered; there is little evidence of a reduction of coverage, perhaps because concentration on end states tightens the curriculum and requires the same amount of coverage.

To answer the question do teachers pay attention to kinds of performances that can reveal understanding, i.e. application of those concepts to newly encountered world events it was found that the move away from a conception of intelligence as constituting a fixed set of ability, regardless of the number, and toward a conception of intelligence as involving capitalization on strengths and compensation for and remediation of weaknesses is very evident in this research.

The emphasis is on each child’s working up to his or her own potentials and comes with the high standards for children that are best when set by the student and teacher in a collaborative manner to input the students’ strengths in each intelligence. Each child’s style of learning and thinking is enabled through their intelligences and how they can use what they learn is part of goal setting.

Understanding children’s intelligences will allow teachers to take maximum advantage of children’s interests. Predictive tests have given way to less formal testing, but traditional testing is necessary for teachers, and the challenge is marrying the 2 processes: appealing to all intelligences and readying students for the traditional testing expected in schools across the nation.
CHAPTER V

Summary, Conclusions and Recommendations

Introduction

The purpose of this dissertation was to conduct a qualitative study of middle school language arts classrooms where teachers are actively providing instruction based on multiple intelligences and to identify the connections that relate curriculum change to multiple intelligences.

Summary

The potential of multiple intelligences for schools is great because it is not a curriculum, and each school's implementation can be culture-specific, context-specific, and school-specific. Faculty members working together may create strategies for their unique teaching situation, and this personalized, individualized education can reflect on teachers and students well (Hoerr, 1996). Results from this study found personalized, individualized education that was specific to the goals of the school in terms of students needs for now and their future, cultural reflections on what surrounds the students, and context found in curriculum guides.

Separating curriculum into the how and what produces two answers to the question what has happened to curriculum since MI has been implemented into the middle school language art curriculum. The what has not changed; teachers are loyal to, and dependent upon, their curriculum guides often acting as contributing designers of their guides. The how has changed because teachers are collaborating with each other. The study of curriculum integration consistently came up with the same conclusion: teachers are sharing curriculum integration, getting into other disciplines to enhance student
learning in their own discipline, and collaborating in the teaching process. This allows interaction and expansion from one discipline to another benefiting students and teachers by finding commonalities among disciplines. By integrating the curriculum through the shared approach, teachers are enhancing the existing curriculum and allowing for deep learning of concepts. There is no evidence in this study of changed content of the curriculum as evidenced in questions 4 (means 2.5), 3 (means 2.3), and 1 (means 2.3), all very low means.

The how of curriculum including how teachers teach the material, who inputs the curriculum focus, and how assessment will occur has undergone remarkable change when MI is implemented. Students are featured in what they can do as a result of their learning and in their input into curriculum focusing as evidenced in questionnaire B questions with their means in parentheses: 9 (4.8), 19 (4.8), 20 (4.6), 12 (4.5), 18 (4.5), 8 (4.4), ten (4.4), 11 (4.4), and 13 (4.4).

The other how of curriculum, teachers' delivery is changed, received a high mean in question 2 (4.3), and materials in classrooms are chosen to appeal to all intelligences received a mean of 4.2 for question 14, showing that teachers' changes in classroom presentations are in high evidence along with student changes in abilities to explain what they have learned, but not due to curriculum content changes.

Subject matter still focuses on classical and humanistic traditional curriculum, as content shows no evidence of change: question 1 (2.3) which is very low, but a progressive overlay is evident in teachers' approach to focus on material as students are expected to brainstorm and input real life needs: 19 (4.8), help select appropriate classroom activities; 20 (4.6), consider possibilities in the classroom; 18 (4.5), and attend to concepts at the beginning of units to devine what is in need of focus; 25 (4.2), all very high implementations out of a possible mean of 5.

MI does not change curriculum content: 1 (2.3), choice, 3 (2.3), or chronology, 4 (2.5) to any degree as these low means suggest. Curriculum delivery is affected by MI
implementation: 2 (4.3), 24 (4.1), 17 (3.8), 23 (3.8), but to a lesser degree as shown by
the medium to high means. This is not the essence of change in MI language arts
classrooms, although it had the highest effect in the area of curriculum change. So we see
teachers changing what they can control, delivery, but leaving the administrative area of
prescribed curriculum alone.

Specific methods of assessment, profiles, progress reports and portfolios were low
in implementation: student profiles, 7 (2.8), progress reports, 6 (3.6), portfolios 5 (3.8), all
combine to very low implementations of these methods of assessment in the MI language
arts classroom in middle school.

The effects on the students as represented by change in their abilities and skills
working with the newly learned material was very high: expresses genuine understanding 8
(4.4), explains topics in a different way 9 (4.8), can apply what is learned 12 (4.5), can
generalize 11 (4.4), and represent what is learned 13 (4.4). Application and explanation of
what is learned were very high when implementation of MI occurred. Assessment among
these participants has not arrived at alternate assessment techniques, but adjusted content
and delivery has made changes in students’ abilities.

Number of facts learned has a high affect when MI is applied, but it progressively
becomes more a factor as implementation of MI gets stronger: 24 (4.1) with a high level
of implementation with teachers rating it at 4.3, medium level of implementers rating it at
4 and low implementers rating it at a low 3.7. End states and final exhibitions do greatly
effect the curriculum and assessments with a mean of 4.3 for question 27, but interestingly
high implementers at 4.6, medium implementers at a low 3.5, and low implementers at a
very high of 4.5. This discrepancy among implementers usually followed a pattern of high,
medium, low, but here is an unusual contradiction perhaps fueled by assessments guided
by exhibitions where traditional testing is also very much in evidence.

Of the 14 highest mean for questions, 10 are student centered concerning change,
or student initiated, and only 4 teachers focused on outlining teacher change when MI is
implemented. Students rank high as participants in the most effective areas of MI implementation. Student centering is featured in these top 14 questions. Curriculum, while not determined by students, becomes focused through the lens of their input.

Brainstorming requires all students to freely advise, suggest, or complement the classroom curriculum. Question 19 with a mean of 4.8, is the second highest ranked question of 28 questions. Teachers' delivery of material changes rated 4 or 5 for 11 of 12 teachers. Asking MI questions and translating material from one intelligence to another were ranked high.

In interviews, teachers spoke of students' potentials and their high interest in teaching to them. Teachers sensed the importance of understanding the changing needs in educating students for possibly three different, lifetime, careers, all perhaps related, due to technology. A repetitive theme among the teachers is the need to teach children to become lifelong learners, and love knowledge acquisition, which gives MI importance since it seizes the approach that each student finds his strengths making learning a personal, pursuable task.

Assessment changes were rated very high: 28 (4.6); pedagogy rated high: 2 (4.3); curriculum changes rated very low as to change when MI is implemented: 4 (2.5), 3 (2.3), 1 (2.3).

The classrooms observed were arranged in groups, but rows were the chosen arrangement in two classrooms. Grouping was mentioned by all the teachers for students' interests, but not for ability grouping. Goal sheets were favored either for a single assignment, a weekly predictor, or a monthly guideline. Writing portfolios, journals and diaries were the preferred manner to express results from the literature studied. Skits, presentations, literature circles and writing centers enabled students to personalize their assessments. Musical instruments, and large areas for production either kinesthetically, spatially, or artistically, were provided in the classroom. There was a hominess with plants, couches and generous chairs to encourage students to look at the classroom in a
more personal manner. Costumes, cushions on the floor, stuffed animals and generous supplies available to all, were seen often along with puzzles to work, clotheslines with pins to hang work, and hand created artifacts marking these classrooms. All classrooms had computers, printers, software, and paper for student use; one had a personal Macintosh Emate for each student. Projectors and screens were available in each classroom.

**Relevant Literature and the Results**

Chapter Two reviewed eight areas: review of relevant literature; multiple intelligences, development of intelligences, middle school curriculum, pedagogy, assessment and multiple intelligence, transformation of schools, Key School and Key Renaissance School, and criticism, questions, observations, and responses to multiple intelligences. Twelve middle school language arts teachers in 5 districts were asked their perceptions of their practice based upon changes in that practice after multiple intelligences training. The findings of this effort, the implications of those findings, and recommendations for their use are presented in this chapter as similarities, differences, inconsistencies and confirmations of research results when compared to the 8 areas of review.

**Curriculum.**

Gardner encourages teaching the classical disciplines and teaching to the highest standards reaching farther than classrooms have been able to go, so limited by appeal to two intelligences instead of the array available through MI. The sharing approach to teaching as opposed to teaching separate pieces of knowledge or all academic skills, ties the curriculum to the real world. It is meaningful and relevant and prepares students for the world they face. “MI theory provides a context for structuring thematic curricula.” (Armstrong, 1994, p.62). A shared curriculum also requires a theme as a basis for uniting the disciplines being shared.

The participants in this study did not change their curriculum, but they experienced more depth where student interests and needs and intelligences warranted it following
Gardner's advice, "The theory of multiple intelligences should not be used to dictate a course of study or career, but it constitutes a reasonable basis on which to make suggestions and to choose electives." (Gardner, 1993a)

Curriculum content, chronology and curriculum choice change is of least difference in this study of the MI classroom. Sequential planning, plan implementation and a specific objective are of little consequence in these MI classrooms. Student profiles are not common classroom practice. All possibilities for learning are considered, initiated by students and teachers, but a more traditional approach is enhanced by MI, not changed by it.

"We find that the assessment of intelligences can play a crucial role in curriculum development." (Gardner, 1993a); the related questions in questionnaire B all rated very high in implementation among the highest and medium and lowest implementers of MI. Focus on a specific objective or topic; ask key MI questions; consider the possibilities; brainstorm; select appropriate activities; set up a sequential plan; implement the plan (Armstrong, 1994, pp. 58-60), all rated very high in implementation in this study, reiterating teachers' enthusiasm in bringing students into the planning of what will be learned with regard to the existing curriculum guide.

Curriculum planners in the 1990s rely on an extensive understanding of the nature of knowledge and the processes through which students can acquire knowledge: authority, divine revelation, experience, reason, and intuition. We have always known there are different kinds of knowledge and different human needs for knowledge. Structure, order, and configuration were observed in things to be learned. Experience and intuition are two processes often left out or left until last in the traditional classroom, but MI changes that paradigm putting these ways of learning foremost to increase student participation in their personal learning experiences.

When visiting a school where multiple intelligences is implemented, Gardner looks for signs of personalization, evidence that all involved take such differences among human
beings seriously, evidence that they construct curricula, pedagogy, and assessment insofar as possible in the light of these differences (Gardner, 1995, p.208).

Schools are places where, in Gardner’s words, (1995) differences among youngsters are taken seriously, knowledge about differences is shared with children and parents, children gradually assume responsibility for their own learning, and materials that are worth knowing are presented in ways that afford each child the maximum opportunity to master those materials and to show others (and themselves) what they have learned and understood (Gardner, 1995, p.208).

The participants in this study address other abilities and talents besides the linguistic and logical-mathematical intelligences in their classrooms. They acknowledge a wide variety of valuable and independent domains for a shift in instructional conditions, and assess each intelligence through appropriate means, not necessarily traditional testing, but often in unison with traditional testing. They value the highly individualized ways in which people learn. (Blythe & Gardner, 1990, p.34). The shared curriculum model, favored method of curriculum integration for the participants in this study, comes from sharing ideas within the disciplines rather than introducing an idea or theme from outside the curriculum. The commonalties of two curricula are the key to shared integration of curriculum. The coupling of similar disciplines makes deep learning of concepts easier and more transferable. Two teachers can plan a strong lesson together. Flexibility and compromise are important parts for successful implementation as well as trust and teamwork. Dialogue and conversation is necessary for in-depth treatment of subject matter. These attributes are strong among the 12 involved participants and part of the reason for MI success in their classrooms. Planning, sharing ideas, and overlapping strengths are all qualities MI enables in the classroom.

MI allows teachers to combine performance, which often acts as an assessment, and analysis, which is conducive to discussion enabling students’ skills in performance and
appreciation of the subject. The personal and linguistic growth of the child, enhanced by improvised drama, imaginative writing, personal response to literature, and informal classroom discussion, coupled with textual analysis, study of genres, and literary periods, emphasize English as a humanistic subject; this division between purposes indicates an uncertainty about whether to teach performance skills or appreciation (McNeil, 1996). There was no contradiction indicated by these participants; performance skills fit into assessment, while appreciation is expressed in whatever language the students’ intelligences speaks best.

The political nature of curriculum planning in the field of language arts has divided English teachers between utilitarian and humanistic purposes, but when content is geared to real life and individual intelligences, both purposes are served; the student’s interest is there as they have helped to plan what they will learn, and their needs, based on experience, keep the curriculum useful and life enhancing. Writing in language arts classes, for instance, should flow from a student’s desire and choice, and be connected to issues in the students’ own environments in the MI classroom.

The Project Approach, which ensures meaningful and relevant engagement in units of study chosen by teachers and children, depends on the needs of the school and school system. Study can be interdisciplinary or shared, as was favored by the participants in this study, or adapted to explore one angle of the curriculum if the local school district demands a separate focus on other skills and domains of learning. Classroom observations indicated that students were more likely to participate in and complete activities that were “mindful” rather than the typical worksheets that were used in previous classroom assignments. The project approach asks the student to construct learning.

Assessment.

Teachers in this study rated assessment changes when MI is applied as high, but held on to the need to continue traditional testing approaches embraced by their districts for the sake of uniformity among students and demands for understandable grades from a
traditional, measurable source. Supplementing this approach, they were able to enter the realm of alternate assessments. Gardner addresses misconceptions about MI theory, “You can’t get from MI to psychometrics-as-usual, there is no ‘MI approach’ to education, the theory takes no position on the sources of different intellectual profiles, the psychometric view of intelligence is too narrow, substituting one form of scholasticism for the rich set of capacities that comprise the human mind.” (Gardner, 1996, pp.2-3). While the narrow view of intelligence is enforced with standardized testing, it is a part of districts’ standards, and sometimes shows the MI implementation as a means to great advances in scoring on these tests.

Gardner is hopeful that the conversations about intelligence will result in a “wider acceptance of the notion that intelligence deserves to be pluralized.” (Jordan, 1996, p.35). Societies choose their bases for sorting, and abilities measured by current cognitive tests are simply one of many bases for sorting, so our own social order is partially a function of the kinds of cognitive abilities measured by psychometric tests (Sternberg, 1996). In the districts studied, assessment implementation is aimed at results like finding evidence, genuine understanding, application of learning, but to some do not measure practical intelligence that predicts success in school as well as measures of practical intelligence that predict performance on the job. Meaningful correlation with psychometrically measured intelligence perhaps will come with more MI classrooms. Ultimately, the problem is not with the test, but with how they are used. The movement to more student centered assessment that comes with MI practice uses testing as part of the learning process when students perform based on what they have learned, or produce artifacts valued by society that have emanated from their learning.

Implementers of MI in this research base their assessments upon end states and final exhibitions desired from the student, measuring diverse abilities that reflect diverse intelligences. Originally intended to increase fairness by reducing the subjectivity of
judgments about children, tests can still serve that purpose when coupled with predictors that measure diverse abilities rather than only unitary aspects of abilities.

Teaching changes when the concern is what students do with knowledge as well as what they know. How students process information as a result of their cognitive strengths takes the attention away from curricular content to how students learn and process domain-specific knowledge to assess which pedagogies and instructional methodologies would maximize students' learning potential. This change in teaching from the what to the how is essential to this study, highlighting teachers' concern for curriculum to focus students' intelligences.

Hopefully, the middle school experience will include MI implementation because the adolescent's world becomes wider due to a larger society at hand, higher because developmentally the youth can deal with abstract forms of reasoning, hypothetical and theoretical and speculative thinking. It is at this stage of development that the student needs to explore strengths to understand personal intelligences developing those areas most in need of cultivation. Exploration helps focus attention on areas of interest and highest learning.

Gardner’s theory, along with an acceptance of the belief that children are different, has far-reaching implications for teaching and learning in classrooms and schools where difference is not only valued but viewed as an asset for the community of learners (Burchfield, 1996). Where teachers are not asking for uniformity, students of all abilities and intelligences can share their special expertise, offering diversity and growth to the learning community.

So often in the observations and interviews teachers frequently mentioned the availability of skits, readings, performances on musical instruments and oral presentations as assessment alternatives. Rogers’ et al. (1995) suggests that drama allows students to develop and exhibit a range of skills and to demonstrate literary understandings in "unschooled" ways (Gardner, 1991).
Teachers in this study gave students' abilities to explain a topic in a different way the highest ranking in the roster of 28 questions. Gardner has argued extensively that standardized tests and schools in general tend to focus on two types of thinking even though the questions asked present students with reactive rather than generative problems (Gardner, 1991, p.20). This high mean moves MI implementation away from linguistic-mathematical emphasis into the realm of generative thinking. Schools not only allow standardized tests to assess them according to these limited dimensions, they also follow suit with curriculum development and with emphasis on math and English which focuses on analytic approaches to thinking about literature (Ibid., 1991). Gardner maintains that in taking this narrow approach schools ignore reality, both historical and contemporary, but with the growth of MI implementation, the approach narrows the gap between student learning and student reality.

Non-written texts are capable of providing the same potential for enabling the construction of meaning as written texts, yet their production is rarely sanctioned in English/language arts classes. Throughout history artists have engaged in “transmediation” (Suhor, 1984) that is, they have interpreted one type of text through another and have been culturally valued as means of constructing meaning and have been respected and revered by the public as well as by the artists themselves. The appreciation of non-written interpretations of life and literature has not, however, broken through the barriers of the English/language arts classroom, where writing has established exclusive rights as a unique mode of learning; such a view is not simply wrong, but potentially disabling to students as well when, as Gardner has argued, students’ most potent means of thinking may come through areas other than the logical and linguistic realms (Ibid. 1984).

The move away from standardized measures of achievement and ability to authentic assessment techniques, including portfolio and performance-based assessment, raise questions about the reliability and validity of a battery of instruments based on MI theory, including teacher checklists and performance-based assessments. It's important
that schools help people feel more "engaged and competent, and therefore more inclined to serve society in a constructive way." And that, he says, might be the last best thing schools can do for students (Black, 1994, p.27).

Specific methods of assessment have not taken over the traditional pencil and paper test, but have supplemented the assessment process, and given the student the focus on learning necessary to set new goals. While standardized tests do not take into account such factors as motivation and effort that often drive outstanding achievement, schools fail students when they do not help them to discover and master talents that would benefit society. One of the assessment techniques that enhances this goal is the project approach, an approach mentioned among participants.

Student Performance.

Student performance, which showed very high change in the MI classroom, arises from teachers’ beliefs that all students can learn when MI is implemented. Students become constructionists when asked to organize what is encountered for regularity and relatedness. Improvement of memory processes occurs with organization. According to Bruner (1963), knowledge has an internal connectedness, a meaningfulness, and appreciation and understanding requires an internal context into which the new knowledge must fit to be remembered. Teachers who integrate the curriculum in a shared approach, which participants in this study chose as the first, favored approach, do unitary work among two disciplines which is managed for connectedness leading to an understanding of disciplines as related.

There is a new faith in the possibilities each student possesses given the correct environment. The heritability of intelligence is a question entirely distinct from that of the modifiability of intelligence (Ibid.,1963). MI implementers begin with the policy that every student can learn if accessed through their predominant intelligences, and interviews quoted in this study support this belief.
Gardner continues that these articles of faith and beliefs extend into the scientific realm where fixed genetic endowment and parental social status were believed to determine the human mind and development; people can evolve in different ways today given some modeling from school environments to name one. MI acts as a basis for belief that all can learn given access to their intelligences (Gardner, 1991).

Peter Drucker claims that schools concentrate more on problems than on strengths. As a result “people don’t know what they do well because they are not encouraged to think that way. That’s probably my greatest strength as both a teacher and consultant- I immediately look for that.” He generalizes to others the method of his own learning. “I realized that I, at least, do not learn from mistakes. I have to learn from successes.” (Beatty, 1998, p.9). In other works Drucker calls education the 4th landmark of the future, but making educated people productive is first among the challenges of our age, and making them content is another matter (Ibid., 1998). The curriculum developed with MI as the foundation is grounded in enabling students to be productive through their own construction of their learning; student contentedness should arise out of success when using their individual intelligences.

Constructivism is the invention or creation of knowledge by children interacting within themselves and with their environment. In the invention of knowledge, the child is able to see relationships, to problem solve, to re-invent, to use logical thinking, and to make decisions (Berger, 1996). When language learning, a child constructs language through the environment, and the child takes time to acquire the language.

If Gardner’s notion of intelligence is applied to the practice of ability grouping, it would bring an increasingly complex set of variables, which would render ability grouping of students virtually impossible. It also points to the limitations of present grouping practices that frequently use only one criteria for grouping. Intelligence can take many forms, all of which are legitimate and important in our society and in our schools (Spear, 1992).
Student performance effected by the student centered progressive curriculum reflecting real life experience averaged a very high overall mean. In a curriculum in which a student is required to pose and solve problems through the manipulation of different kinds of semantic, notational, and symbolic systems, inductive reasoning fosters an independence and confidence absent in the other procedure; immersion in an issue or work alleviates simplified interpretations of work. Students must see a relevance to themselves in the things they study, and take many viewpoints in assessment of great works. Students should be asked to see work from different vantage points such as historian, novelist, or geographer. In its essence, the middle school is a device of democracy whereby nurture may cooperate with nature to secure the best results possible for each individual adolescent as well as for society at large.” (Lounsbury, 1992, p.14).

Pedagogy.

The movement among the participating teachers to a holistic approach to disciplines begins with a vision of their students as participants in the focus of what will be taught. Applying Peter Senge’s (1990) 5 aspects of a learning organization, each teacher must reach a stage in professional development where personal mastery is real, and each teacher is expected to have a vision of what should be accomplished. These educators are expected to address certain questions: What does every child need to learn? What should be taught and what is the best way to teach it? Who are the legitimate collaborators in the teaching/learning process? How will all this be evaluated? How will we be held accountable?

The teachers focus on what people can do, not on what they can’t do. Students are expected to brainstorm topics to be studied on a daily, monthly or yearly basis, and follow through with their needs, intelligences, and goals relevant to each topic. As in the lesson from Miss Elsa, Peter Senge’s teacher at a progressive school, MI teachers devise ways to make students responsible for their own learning. She gave him a notebook and required him to record what he expected to learn at the beginning of each week and then to check
his expectations against the results at the end of the week (Senge, 1990). This hands-on responsibility for one's education is seen in the MI classroom and spoken by teachers as essential to creating lifelong learners with abilities and appetites to keep learning. Gardner suggested some positive ways to use education: The cultivation of desired capabilities, approaching a concept, subject matter, or discipline in a variety of ways, and the personalization of education (Gardner, 1995).

The heart of the MI perspective "in theory and in practice- inheres in taking human differences seriously" (Gardner, 1995, p. 208). The personalization of education was evident in each teacher's interview and reinforced with observations where students were known so well teachers could cite intelligences that were developed and ones in need of attention. No teacher expected students to learn the same material the same way.

Most of the change teachers see is student centered: their ability to explain in a different way, and their application of what is learned. The teacher-student relationship is very evident and essential to learning in the MI classroom: brainstorming together, selecting appropriate activities together, and considering possibilities in the MI classroom. Finally, the teachers' attention to all performances that can reveal understanding as well as different goals for assessment (understanding instead of test-passing) is important.

Multiple intelligences has become understood and applied through private enterprise resulting from curiosity, in-service courses for teachers, and common sense application of a theory that works as well as academic course sources. It is also a philosophy about education with direction for student learning and pedagogy and school concern for cognitive development. All participants in this study have done work on their own to learn about MI and be able to implement MI in the classroom. It is a natural response to their belief that this works in their classroom and creates a new paradigm for their students' learning. Participants are open to reading and taking courses, as well as developing courses to teach to others.
In 4 observations in two districts teachers highly value the possibilities of MI, always looking for application of each student's intelligences. Little if any administrative support was mentioned or apparently needed except as initiators of inservice courses.

In individual testimony concerning MI training in 5 districts a great amount of teacher initiative was taken after initial course work that inspired the teachers to continue their own research. No teacher in this study was indifferent to the possibilities her own research and study of MI would produce.

A comparison of district responses to the questionnaire showed only one district to produce all high implementers of MI; this school within the district from which all came is centered around MI.

A comparison of teachers’ level of implementation of MI and their responses to the questionnaire showed high implementers giving the highest ratings to 23 questions, medium implementers giving 5 questions the highest implementation, and low implementers giving the questions lower ratings than the other participants.

Teaching activities in the multiple intelligences classroom vary from lecture to cooperative learning, and instructional strategies are as personalized as the students in any classroom. “MI theory represents a model of instruction that has no distinct rules other than the demands imposed by the cognitive components of the intelligences themselves.” (Armstrong 1994, p.57). This allows teachers to become implementers of MI in their classrooms with little budgetary demands, or other high stake changes such as books, furniture or supplies. The teacher who reads and understands the intelligences can access that learning with creativity, networking and student input.

Viewing children through the MI lens means identifying a child’s talent and helping nurture it. Rather than focusing on the mismatch between student and school, the focus is on the child’s many intelligences and on finding ways to bring them alive. This approach means that curriculum, instruction, and assessment need to be designed to elicit success in all of the areas of a child’s talents, not just the two which correspond most
readily with standardized tests (Hoerr, Fall 1994). What the student can do well, how it can be assessed fairly, and how to enable the student to learn at an optimal level is the MI teacher’s first concern.

In the interviewing process, teachers were concerned with students’ ability to apply what they learned to their lives. Student input in areas of focus is a beginning in that direction helping the teacher spotlight curriculum areas of interest and applicability to students and their lives.

Instructional change cannot be done piecemeal; it must be part of a greater change in how we view teaching and learning, so the teacher’s effort to make wholesale changes in the conceptions of classroom process will make the difference. The introduction of multiple intelligences activities must be accompanied by large changes in the values of the classroom, and concomitant changes in what students believe to be appropriate and acceptable ways of thinking and communicating in an English class.

Multiple intelligence activities, like “writing to learn” opportunities, small groups, portfolios, and other pedagogical methods, are not in and of themselves educational panaceas, but activities that may present excellent learning opportunities when used thoughtfully in the midst of a comprehensive reconceptualization of teaching and learning (Ibid., 1994).

Media is beginning to ask these questions because reform movements are so far afield from their original purpose mainly because those decisions are in the hands of the wrong people. Jacques Steinberg (1997) a reporter for the New York Times raises the question multiple intelligences answers: “Why do public debates on the teaching of math or reading or science seem so disconnected from what happens in the classroom? And why is there never a middle ground?” (p.1)

He examines the issues firing the experimental curriculums debate: politics, ideology, educational reformers and personal greed. “Today there is precious little educational research done by anyone who is not advocating a particular point of view-
leaving little middle ground.” (Steinberg, 1997, p.1). In the same article, Jerome T. Murphy, the dean of the Harvard Graduate School of Education, believes those interested in content and those interested in process must be heard;

You get stereotypes...‘the scientists have their heads in the clouds and don’t care about kids.’ That’s a fallacy. But the other stereotype, that ‘all teacher educators are interested in is process,’ is false, too. The contributions of both are essential to writing a good curriculum. (Steinberg, 1997, p.14).

“It is hard to make nature fit a paradigm” says Thomas Kuhn the creator of the term “paradigm shift” in The Structure of Scientific Revolutions then it is almost impossible to make education fit into an isolated discipline divorced from a multitude of related areas of research, methodologies, and perspectives (Morrin, 1994, p 163). Recommendations

The results of this study highlighted the following areas as needing further investigation. Teachers rated themselves during informal conversations and formal interviews as high implementers of MI in the classroom, but observations and self-reporting showed some of them as too highly rated. What some perceive as high implementation of a curriculum approach is sometimes less than high. Teachers expectations from curriculum guide direction are very high, but the MI approach allows for implementation with no interference, but rather an enhancement of, the curriculum in place. Does this happen in disciplines other than language arts when MI is implemented?

There is a need to examine language arts curriculum in the middle school where the theory of multiple intelligences has been applied for its intrinsic inclusionary philosophy that changes the classroom from an elitist, exclusionary paradigm where linguistic/mathematical intelligences are favored, to a democratic model, the original
intent of our nation’s founding fathers, where all intelligences are favored. Whose purposes are best examined in deciding on curriculum: educators or society at large?

Theoretical and Practical Significance of the Findings

Implementation of Multiple Intelligences in the middle school language arts classroom comes from teachers and administrators who have an inclusionary focus on the children believing that all children, when tapped for their specific intelligences can learn and produce results valued by society. The mathematical-linguistic emphasis on traditional classrooms has left out many creative, bright students with potential that is not examined and cultivated, creating a society which cherishes abilities in those areas in an academic arena, but which bear no correlation to success in the world after academia. MI champions presentation of content that has bearing to students’ real life production, in a manner that is useful to all intelligences.

Districts move toward more inclusive testing through an understanding of multiple intelligences and its intrinsic value for true assessment of students of all abilities would make schools a truer democratic model.

Teachers have taken the banner of MI and unfurled with great enthusiasm the specific intelligences and their application to learning. This has been done with the help of administrators or as a grassroots effort working independently and absorbing the works of Howard Gardner, or enrolling in workshops, courses and inservice classes. Teachers relate to MI because it makes sense. Teachers, assessing what works, what doesn’t; where there are holes in children’s learning, where it is intact; what to act upon as dictated by curriculum designers and what to ignore as wasted time have embraced multiple intelligences. They don’t make choices arrogantly or defensively; teachers have their students’ best interests at heart. They will go to great lengths to be what they most want to be: great teachers who make a difference in their students’ lives. Their students’ success is their key to successful professional practice, so reading and studying this approach to teaching presents a paradigm in the classroom that gives each student a special niche.
Districts would move ahead in multiple intelligences through inservice courses aimed at understanding and implementing multiple intelligences at all levels and providing group support for those teachers who have chosen this implementation.

When an approach to education makes sense, fills the learning gap in their classrooms, and is grounded soundly within the parameters of the best of educational research, teachers respond generously with time, personal investigation, and most importantly, implementation of that approach.
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Appendix A
Questionnaires A and B
Please examine these approaches to integrating the curricula. Which is closest to your organizational method? Second? Third? There is no right or wrong, better or worse choice, and your answers are confidential.

**Traditional**
Discipline plans its topics and content in isolation from the other disciplines.
The contents of language arts topics and contents.
Sequence and time allotment.
Grammar.
Research.
Genre Study.
Writing: The Essay.
Communications.
Critical Analysis.
Think ahead. List the concepts for an upcoming semester and rank them according to curricular requirements.
Think again. List curricular priorities by topic, then rank by concepts.

**Connected**
Think of units, topics, or concepts within a discipline that you've just finished teaching and jot down a connection.
Discipline connects particular topics, units, or concepts with connecting organizers. These frameworks provide common focal points for integrating ideas.
Nineteenth Century: topic, unit, concept to American Voice: concept, skill, attitude.
Twentieth Century: topic, unit, concept.

**Nested**
Think back to a topic, unit, or concept taught and relate the number of skills, concepts, and attitudes carried along in related areas.
Using a content piece as the first target, 2 other instructional focal points are designated that can be nested in a single lesson or unit of study.
Debate (social skill).
Argument and Evidence (thinking skill).
Persuasive Writing (content).

**Sequenced**
Two teachers from different disciplines list 5 topics each. Then they sequence them to parallel their teaching. Students make connections between the two disciplines.

**Shared**
Two disciplines that seem to have natural relationships are scrutinized for concepts and ideas that overlap. The topics and units from 2 related disciplines offer possibilities for integrations by identifying basic concepts, skills, and attitudes that overlap.

**Webbed**
A theme is designated as the central idea and used as an overlay to the various content areas for an interdisciplinary approach with alignment to outcomes. The theme provides a
lens to frame and view content. The theme acts as an umbrella that is visible to students as they work in content areas.

**Threaded**
Interdisciplinary or grade-level teams target a thinking skill or cooperative skill, etc., and thread that skill through curricular content in all disciplines. This amiable teaching model does not water down content in each discipline, but renders positive consensus for the teachers.

**Integrated**
Interdisciplinary or grade-level team brings conceptual priorities together, looking for overlaps in concepts, skills, and attitudes as well as content concepts. Team members look beyond the topics to the concepts, skills, and attitudes they target in their separate disciplines. Overlapping ideas that emerge as common ground among the disciplines emerge as the content pieces.

**Immersed**
The immersed learner reads and learns through personal area of interest and reflects this in input and output modes. This learner funnels learning through a personal area of interest and uses a refined selection process that screens input and seeks the areas that have connections.

**Networked**
The learner networks with other experts in order to execute the pet project. The learner is propelled by an area of interest to search out experts both inside and outside the field to extend and enrich the field.

- Have you participated in multiple intelligences workshops?
- Have you read about the theory on your own?
- How has your understanding of the multiple intelligences influenced how you teach?
- If you have participated in workshops or done reading on your own, please specify the extent and your reaction to these personal efforts.
Questionnaire to determine the impact of Howard Gardner’s theory of multiple intelligences (MI) on change in middle school language arts curriculum.

Please indicate lowest application as 1 and highest as 5.

1. When MI is implemented classroom curriculum content changes
   \[1\] \[2\] \[3\] \[4\] \[5\]

2. When MI is implemented delivery of material changes
   \[1\] \[2\] \[3\] \[4\] \[5\]

3. When MI is implemented choice of curriculum changes
   \[1\] \[2\] \[3\] \[4\] \[5\]

4. MI implementation changes curriculum chronology
   \[1\] \[2\] \[3\] \[4\] \[5\]

5. Assessment through portfolios is common classroom practice
   \[1\] \[2\] \[3\] \[4\] \[5\]

6. Assessment through progress reports is common classroom practice
   \[1\] \[2\] \[3\] \[4\] \[5\]

7. Assessment through student profiles is common classroom practice
   \[1\] \[2\] \[3\] \[4\] \[5\]

8. Assessment is aimed at students’ genuine understanding rather than passing a test
   \[1\] \[2\] \[3\] \[4\] \[5\]

9. Students can explain a topic in a different way when MI is applied
   \[1\] \[2\] \[3\] \[4\] \[5\]

10. Students can find evidence and examples for their research when MI is applied
    \[1\] \[2\] \[3\] \[4\] \[5\]

11. Students can generalize material learned when MI is applied
    \[1\] \[2\] \[3\] \[4\] \[5\]

12. Students can apply what is learned when MI is applied
    \[1\] \[2\] \[3\] \[4\] \[5\]

13. Students can represent what is learned when MI is applied
    \[1\] \[2\] \[3\] \[4\] \[5\]

14. Materials in my classroom appeal to all 7 intelligences
    \[1\] \[2\] \[3\] \[4\] \[5\]

15. Units focus on a specific objective
    \[1\] \[2\] \[3\] \[4\] \[5\]

16. Units focus on a specific topic
    \[1\] \[2\] \[3\] \[4\] \[5\]

17. I ask key MI questions
    \[1\] \[2\] \[3\] \[4\] \[5\]

18. We consider possibilities in the MI classroom
    \[1\] \[2\] \[3\] \[4\] \[5\]
19. We brainstorm in the MI classroom
   ___1___2___3___4___5

20. We select appropriate activities for the MI classroom
   ___1___2___3___4___5

21. We set up a sequential plan for the MI classroom
   ___1___2___3___4___5

22. We implement the plan
   ___1___2___3___4___5

23. I translate the material to be taught from one intelligence to another
   ___1___2___3___4___5

24. I abandon the effort to cover everything and move toward uncoverage:
   "Less is more."
   ___1___2___3___4___5

25. Concepts students should understand are delineated at the outset of
   the learning period
   ___1___2___3___4___5

26. The kinds of performances to be exhibited upon completion of the
   lesson are defined at the outset
   ___1___2___3___4___5

27. The kinds of end states and final exhibitions expected of students are
   defined at the outset
   ___1___2___3___4___5

28. I give attention to all kinds of performances that can reveal
   understanding
   ___1___2___3___4___5
Letters to Teachers and Administrators
To: Language Arts Teachers
From: Maureen Feeney
Re: Classroom Observation and Interview

Can we set a date for the observation and interview during May? I would like to schedule our meeting at your convenience.
I teach periods one, two and three at Eisenhower from 7:40 until 10:26 and can be available before class or after class until 11:50. After school interviews can take place any time after 2:51. If none of these times connect with good times for you, let me know your best date and time for the interview which should take 30 minutes, and the observation which will last 30 minutes also. When I get your date, I'll send you the interview questions so do not worry about what you need to know beforehand. The observation has nothing to do with you as a teacher, rather it will shed light on curriculum and delivery. Thanks!

Sincerely,

Maureen Feeney

Best Time and Day in May for Interview___________________________________________

Best Time and Day in May for Observation__________________________________________
Dear _____,
Thank you for participating in my initial questionnaire which determined language arts teachers who would be candidates for participation in my dissertation data collection. You were among 7 chosen from a field of teachers in Bergen County who implemented multiple intelligences to varying degrees within the middle school curriculum.

Your participation in my data collection is essential for its success, because I have opted for a quality data sampling rather than a quantitative impression. Each of the 7 teachers chosen is a part of a larger picture of the results coming from curriculum integration, length of multiple intelligences training, and personal interest or reading on the topic for classroom integration.

I have received permission from the superintendent in your district to ask you to participate; you are under no obligation to do this, but your support of my project is greatly appreciated, and I will share results and information from my research with you.

The enclosed questionnaire will take about fifteen minutes to complete and can be returned in the stamped, addressed envelope enclosed. One thirty minute interview at your convenience will be conducted and taped at your school before May 22, and one classroom observation will be done at your convenience when multiple intelligences is implemented in the lesson. All data collection will be completed by the end of June when summer recess begins. All results will be forwarded to you if requested.

The return of the questionnaire will be your decision to participate in this dissertation data collection.

Thank you.

Sincerely,
Maureen Feeney
Mr. _____, Superintendent

Dear _____

At the present time, I am engaged in doctoral study at Seton Hall University working towards an Ed.D. degree in administration and supervision.

Your district is being asked to participate in a doctoral dissertation research project. The purpose of the research is to define the impact of Howard Gardner's theory of multiple intelligences implementation on change in the middle school language arts curriculum. The results will provide insight into curriculum direction which will affect those responsible for curriculum design. Participating language arts teachers are asked to complete a survey which should take no more than fifteen (15) minutes. One classroom observation of multiple intelligences implementation will be done at the teacher's convenience, and one thirty to forty minute interview will be conducted and taped at the teacher's convenience. Your participation is voluntary. Let me assure you that all responses are completely confidential and anonymous. In no way will any data be presented so that an individual can be identified. All surveys have been coded, and the master key will be kept in a locked filing cabinet. Classroom observation and a teacher interview will be scheduled with teachers' convenience in mind. After the dissertation is completed, the master key and tapes will be destroyed. Teachers will be asked to complete and return the enclosed survey and mail it to me in an enclosed stamped, addressed envelope by April 18, 1999.

This project has been reviewed and approved by the Seton Hall University Institutional Review Board for Human Subjects Research. the IRB believes that the research procedures adequately safeguard the subject's privacy, welfare, civil liberties, and rights. The Chairperson of the IRB may be reached through the Office of Grants and Research Services. The telephone number is (973) 378-9809.

I have read the material above, and any questions I asked have been answered to my satisfaction. I agree to participate in this activity, realizing that I may withdraw without prejudice at any time.

______________________________
Participant's Signature

______________________________
Date
Maureen Feeney
Observations and Interviews
Interview with Subject A
Franklin Lakes Middle School
May 26, 1998
3:30-4:00
Maureen: I'd like to begin with your identification of your use of multiple intelligences and I have a chart for you to look at to help identify where you would say you are with your use. There are 8 levels of implementation for multiple intelligences in middle school language arts and I know nonuse and orientation are not your categories. You say you use it in a mechanical way or is it a routine where it comes in every week as a routine or are you at the level of refinement where you use it on a daily basis?
A: I would like to think that I am in the refinement/integration area. I've been teaching a long time and I try to use it in my teaching when I prepare to be aware of the the children and their needs...need the visual...need the auditory and all that. The ones you want to stimulate more provocative questions so I'd like to think I'm in refinement.
M: And how do you identify the child's intelligences? Is there anything you use...any measurement piece you use or is it simply a matter of listening, watching, and assessing behavior?
A: Here at the middle school we have the Otis-Lyman. This gives you the abilities and the IQ level that kind of thing...um, but again, that's just one test. I think most of it is observation...getting to know the child...getting to see how they react to certain things...how well they write, how well they process, and it's kind of a matter of just doing it and observing.
M: So observation of students from September on gives it...just going to your questionnaire I have some responses when I implemented multiple intelligences your delivery of subject matter changes and you said that was high implementation. Could you give me an example of that?
A: What is the beginning of that again? Your delivery of material and planning changes?
M: Yes. Your delivery of material changes.
A: Well, we have heterogeneous groups and so you have such a mixture in your class that are so...I'm constantly adjusting and rearranging do I want to present this...how can I present this better...you know...can I do it better? Am I reaching all the children? So I'm constantly changing what I'm doing in the classroom so being a teacher, you know what that's like, you go home and think about the kids...did I talk to this child today...did I reach them...did he understand that point? This kind of thing, so even within my social studies groups, I know I have a range and have to appeal to him differently. So at the board we do work. I give them study sheets just a lot of different things. Also it keeps my job more interesting. I don't want to do the same thing every day. So I don't know if that's really what you meant.
M: That is really what I meant.
A: But that's the way I understood the question to mean. I want to change and keep fresh for myself and reach all the kids, too.
M: That really speaks to the next question I was going to ask you about. I translate the material to be taught from one intelligence to another and you give a rather high 4. Would you talk about that a bit...you did already.
A: That is the same thing.
M: Yes.
A: It really is. I have classified children in one of my social studies groups. I like to do things with them. You know, let's walk through this, talk to each other, you know...do we go from here the there? I'm just consciously trying to use...it's interesting a few years ago I had a mother call me to say her son said if I could just figure out what she wants, but every couple of days she changes things. I said I don't know if that is good or bad. I thought about it later, you know sometimes as when I take courses, you just want to know what does the professor want and just do that...you know.
M: Yes.
A: You know just do that, we'll do different then that, but I tell the kids you know we're going to do different things.
M: Well, you said it; you like it that way. So I think we do in the classroom what we like the best.
Which brings me To a a personal question: which of the intelligences is closest to yours: have you ever thought about that or assessed yourself any way?
A: I never have; that's an interesting question.
M: It's a question I've found interesting answers to. We also talk about end states and Howard Gardner talks about ends states and consideration of what we want the end states or results to be. What we want the child to achieve by the end of the week or month or year. Do you build that into your lesson plans? What end states you are looking for from the students?
A: In September we...the first thing I give them is a sheet and they have a goal a month what they want to do. I don't know if that's again exactly what you want.
M: It is.
A. They set a goal for the month and at the end of the month, we look at those sheets again. They write down what they want to achieve for that month. One thing I say...that's okay just one thing you don't have to list a lot of things. Then at the end of the month, I give them back their papers and I say think about what you have achieved. This month, did you reach your goal? Do you want to use the same goal for a second month or, you know, what things to do and it's amazing what things come up through the year...
M: Is that guided; does it come from one special discipline like writing or is it a generalized goal?
A: Whatever they want to put down. Their personal choice.
M: That's wonderful. Very exciting thing to do.
A: A student might write something about wanting to do something with a friend or how something changed at home. I say to them whatever is your goal, as long as you're working toward something for that month. List just one, not lot's of things.
M: So they can get personal?
A: Yes. Cause we also do Quest in 6th grade so I get to talk with the children about relationships and friends and drugs and alcohol and smoking and all of that so that comes in to Quest lessons once a week so sometimes they think about those kinds of things...peer pressure...anything.
M: That's very interesting. When it comes to assessment, Angela, what would you say your assessment centers around: traditional tests using pencil and paper assessment or hands on assessment or a combination of the 2 or variations of the 2?
A: I think it's a combination and variation that we do... a lot of paper and pencil thing. We have writing portfolios. They're given tests at the end of chapters, but we also do things like skits and presentations and again working in groups like the literature circles.

M: Which I saw today?

A: Like those things. It's interesting. We just did some skits on feudalism in social studies and the children were allowed to, you know, select something that they wanted to print and bring into the class and some of them were wonderful, but I had more fun with the video camera just videotaping them as they were preparing the 3 days before their presentation. Because just watching them in their groups and coming up with ideas: 'No, let's try this.' 'Let's do it this way.' and there was noise and confusion and paper and everything all over.

M: Yes.

A: But to see the learning that was going on was so neat and they did their presentations and then when they were all finished, I said, Okay, now let's go back and see how this whole thing developed. You can be proud of this...Look what I have here...and we sat down and the said, 'I did that?' 'We did that?'

M: So they could see their progression from the beginning in this projector from beginning to end with the videotaping?

A: It was interesting and then to see them in action...

M: And I think what you're saying is the process was as interesting when you looked at it as the end product.

A: For some of them it was more interesting to see what they came up with.

M: Is that right?

A: Well, they got a big kick out of it!

M: Isn't that wonderful?

So it doesn't sound like there is a head teacher at the front of the classroom in here; it sounds like there is a teacher facilitating as much as lecturing.

A: Well, there are days when there's a teacher at the front of the classroom and other days facilitating with students working in groups.

M: And it looked like a cooperative learning group with a portion of that group. I'm curious. Group one had 8 children and group 3 had 3 and are they allowed to move from group to group?

A: These 3 different groups, the reason the groups are a different size is because I could only get that many books at the end of the year. Now is that crazy? But that's how it worked.

M: I see. Housekeeping.

A: And I give them the option when they were in that large group. I said this is a big group and may be we'll divide it into 2 and they said, 'Oh no, no, no, we'll work together, we'll work well together if we stay together.' And I said alright you've got that option, but I don't want any fooling around and they've worked real well.

M: Oh that's wonderful.

Of course this whole topic of mine is how multiple intelligences affect curriculum: the how of curriculum and the what of curriculum and I'm wondering do you feel ...I know you've read about it; it's part of your masters project, so you're pretty we'll indoctrinated into the theory of multiple intelligences. Do you feel multiple intelligences has any effect on the what or how of your curriculum?
In what way?
A: Well just to be aware the variety you have in your classroom; how are you going to address those needs. How are you going to reach all those kids. You’ve got to just use a variety of techniques and tools and again, it’s more interesting for me. I’ve been doing this a long time so I don’t want to get stale.
M: Do you feel there’s a different student-teacher relationship when multiple intelligences is understood and applied in the classroom?
A: I don’t know. That’s a tough question. I think it’s up to the individual, but I would hope that there is a better relationship and better rapport and better learning going on because you’re trying to deal with everybody’s needs. That’s hard to do
M: Oh, it’s very hard to do. It’s magical when it can be done, but it is difficult to do.
Do you find students gain strength in their weaker areas through their strengths” In other words, if a child has spatial ability or visual-linguistic ability and that ability is tapped, does that give the student strength in other areas where he is weaker?
A: Oh, I would say definitely yes.
M: How does that happen?
A: I have a son who is learning disabled and he has problems with spatial and spends hours putting things in place, so he has this total picture. It just gives him a feeling of now I understand it, and I think when a kid feels that way it helps them in everything...everything.
M: Yes.
A: So that’s what we’re supposed to be doing. We’re supposed to be helping them to succeed and not only academically. They need to survive in this classroom so they can go out into that world and say, ‘Hey, I accomplished something today, and I am proud.’
M: Well, Angela, I certainly do appreciate your time and thank you very much.
A: Well, you are welcome.

Observation with Subject A
Franklin Lakes Middle School
May 26, 1998
9:ten-9:40
Large hand made posters, TV, tape deck, Apple II computer and printer, Mac computer and printer, pictures of the students, globe, hand made pictures, dictionaries, thesaurus, board, Renaissance writing center with books on Leonardo, Michealangelo and Raphael. Discussion of soccer game one boy tells of an adventure at the tournament, another of winning a jackpot, golfing in New York, Friday test results, went to a wedding and family relationship, went to Pennsylvania with a parent who bought them things...
Using journals and spelling books students read on the board: subj., verb, conjunction nouns adjective using geometric figures to delineate each part of speech. Each was asked to make a sentence using the same sentence layout and figures for depicting which part of speech it was.
What type of sentence: imperative. Teacher goes through each part of speech with a sentence she puts on the board, again using geometric figures to delineate each. Students are able to identify each successfully.
Literature circles: 3 groups of varying sizes (The River, Doyle, Birdy) arrange themselves taking one job as delineated on the board: Discussion director, Passage master, Character captor, Connector, Word wizard, and Summarizer. Teacher makes sure each has had a chance to be Discussion director, a prized position. Homework and date for submission is on an easel near the exit. The classroom has no front or back, as all desks are grouped and facing different ways.

**Interview with Subject B**

*Thursday, May 28, 1998
3:30-4:15*

Maureen: It was a wonderful lesson; so these kids were special ed kids?

J: Some of them. Some others were in groups too, but they were behind. They all work at their own pace. If they want to get involved in the music and drawing and map-making, then they're responsible for the reading at home, or vice versa, they can split it or do anything they want. It gives them a little control over the whole thing. They have to get down to business. They can't play all the time. If they do vocabulary, they work here or at home, if they play music, they switch off; just because you opted for one does not mean you are stuck with it.

M: So how does it work then, on a weekly, monthly basis or...

J: This is *The Hobbit*, this is the longest book we do, this is the last, this is huge...

M: Is 7th or 8th grade?

J: This is the 6th grade...doing *The Hobbit*.

M: This is wonderful.

J: So when you started me the things, it worked out...it was of such interest to me. I don't see how you can just read *The Hobbit*. You can't at this age.

M: No.

J: When they saw the thickness of the book, they panicked. They thought it would be dittoes. I said, no, no, no it's not going to work like that. Let's think up some ideas. First they found the songs, songs with no tune to them taken from *The Hobbit*. So what do you do with them? The keyboards my son's. My son is 25. I found it in his room. Why it's still working, I don't know. But I'm afraid it may get stolen

M: Yes.

J: But then they started bringing in the tambourines, and it became an event.

M: What you're doing here is giving a child a way to express himself or herself.

J: With the heterogeneous grouping it is very difficult; I have 142 IQ in here, I have 72 IQ in here. So you have to really...and this makes it possible. The moving and changing makes it possible to do it.

M: Yes.

J: Now we've done this with every book we've done. This is the classic because it's so visual, but some of the other ones we did I also find there's ways to do it. But all along we all knew this was the way to do things.

M: You mean multiple intelligences?

J: It reminded me when I went to the ITIP training; that oh yeah I know instructional training into practice...you do this what they used to say...but I don't think anybody...there is an advantage to using that. I see teachers fight with kids all day long, but they'll do it if you...
M: Well, look at the desk thing at the end. These kids had done everything; don’t make an “old woman” lift the chairs. Everything got lifted. So you have these kids with you cause you’re with them. I was very interested in your identification of the intelligences. It’s not... what you say here is you offer everything in the classroom, and you can take it if you want to do the music fine, if you want to sit and read okay, and these children were doing graphic impressions.
J: They are doing the maps.
M: They’re doing maps...
J: Yes, they describe this incredible journey where they go to get the gold, and that’s what they chose to do. They could have done just pictures, but they chose the map. So the mathematical person needs a goal, what do you want us to draw?
We had a wonderful woman come here, and she told us there are 4 types of students’ personalities, and she called them the red, the gold, the blue, the green. The red likes to do things kind of wildly, and the blue is hugging and taking care of people, the gold is organized, and the green likes to do things by themselves, and her thought was you get like a gold teacher with a gold kid, and you’ve got trouble, right?
M: Yes.
J: And that captivated me too. As I say to the parents, I have ten months here, I’m not going to change anybody, that’s not my point. The point is what can I do with you for ten months. And I’ve seen friends of mine agonize for ten months, because the kids wouldn’t do what they wanted, but in the meantime you are like, butting heads.
M: Yes.
J: And it’s so exhausting. And the thing is, when they have to get down to business, they get down to business.
M: Well, you can see this in this room.
J: It’s not just playing. They know that they have a job.
M: Well, the beautiful representations they did of the chapters...
J: Can you believe that?
M: It brought it back to me in wonderful review form.
J: I know. The committee chose what they thought were the best out of all of them. No names or anything. And at the end we ask may we use yours. And they did. And they were prepared. But that little girl, did you see what she said, I forgot something.
M: Self correcting. I mean there’s the assessment right there.
J: Yes. When they are doing it for their peers something else happens. I never tell them to...but they just applaud.
M: The energy in here...the level of energy...
J: Yes. And remember this is ninth period. That’s the other thing. This is what we do first and second period. You see, I misunderstood. I thought you couldn’t come first or second or third period. When I read your letter I thought you taught then. So what I did I flip-flopped, and we did our ninth period math stuff early and this ninth.
M: That’s very nice of you.
J: They became, when I told them you were coming, they thought oh there is going to be someone classified. That’s their first thought; who is she going to watch?
M: Oh, that’s awful.
J: That’s their first thought
M: Well when the boy asked what is she doing here, I thought I could go tell him...a dissertation.
J: But I had told them she is writing a paper, and they said teachers do that? I said yes. That’s why I said to them, she’ll understand you cause she’s a teacher.
M: Yes.
J: So you don’t have to be embarrassed or feel funny.
M: They were wonderful. The level of involvement over here, and I noticed it was the girls doing the tunnel, but once they had it set up the boys said I want to go through there, I want to see what that’s like.
J: Yes. Isn’t that typical?
M: She said no, it’s not ready. But it was their domain. And the music group did not quite possess it, the singer did. But there was a real sharing, and cooperation going on.
J: And you know more about this than I do, but when they choose something and that’s their thing, but where the others see that’s fun they’ll grab it. Like the map guy went over by the music.
M: I saw that.
J: Which proves we have them all. At the beginning he figures, which will be easier. I don’t know what they think when they choose these things, but this is all moveable.
M: Yes.
J: As I said in the beginning they are not stuck with anything.
M: Well there is total social interaction going on.
J: Right. I don’t know about you but I think that’s when some of the finest learning goes on.
M: I think that’s why we all like parties so much. We all love to learn things.
J: I also know in here there are children with severe social problems. And somehow they match up.
M: I didn’t see one alone, they all seem to be paired up.
J: There are some in here who really despise each other and you wouldn’t know it. They fight out on the playground constantly. That’s because in here it is theirs, they each have a part in it. You try to create. You can’t always do it. I’ve tried to move this into math, and it’s been harder, but it works beautifully.
M: The multiple intelligences?
J: Yes.
M: You teach math too?
J: Yes. Can you imagine that? Talk about multiple intelligences. So they were using skits in math, well, you know what, they started making costumes...can we make costumes...can we make props...I thought it was going to be a little thing...so I realized I don’t bring it, they bring it, but you have to say it’s okay.
M: Yes.
J: And I think...I talk to many teachers, and I think we departmentalize everything. See we work with what we call Connections, we connect everything. They have these things that go constantly through things. It’s so hard to do. Until you realize it isn’t that hard to do if you let them do it. But sometimes we get hung up...oh if we do that we won’t get finished, we won’t get through.
M: Now this directly addressed the question I am asking here. For instance, let’s just take The Hobbit that I saw you working on today. There’s one way you can cover all the material, for instance all the vocabulary, but I think your concentration is more on let’s cover what the students think is interesting, or what the students really need. So your starting from student understanding and it sounds as if you are allowing the students more or less direct this curriculum a little bit.
J: Totally.
M: Totally.
J: The only thing I know is what I have to do and they know what I have to do. I present it to them as that.
M: From your curriculum guide?
J: Here’s what I have to do. How do I do it?
M: You say that to the kids?
J: Yes. I’m told what to do from September to the end of the year. I say here’s what we have to do. How can we get this all in? Do you mind if I hand out some dittoes. Maybe 2 I hand out 4...they hate it....
M: Well, they get so much of that.
J: It’s such a drag.
The other thing we have is we have a chicken. We keep a diary. I love this.
M: Is that your little diaries you were handing out to the kids?
J: Yes. I bought those for some other reason. But what they do is they keep a little diary.
You have To do an entry every day. You have to be a character you put in the book, not one that’s there already. Each day you tell what you did. Not from the book. It has nothing to do with the book except maybe you are on this journey with the hobbit. I check them every Friday, so they can’t just...I check the work, I check the summary all the time.
So they know they are accountable.
M: Yes. So this is paper and pencil assessment.
J: Yes it is. I have a report card. But what I say is each thing they do gets a grade.
Everything they do here in my mind gets a grade. This is A’s A, you know what I mean?
M: Yes.
J: And they are forced into tests and quizzes at the end. I like those open-ended things, you know, what would happen if...those kinds of things.
M: Yes. It shows comprehension instead of fact learning, like who is a hobbit and what does he look like?
J: I have this argument with other people because to me those are just as good and may be better. You know there are some kids who are really good about that; they love to tackle that, they know what hair and looks are like...but it doesn’t matter...what matters is what can you draw from this for the rest of your life? You know you read a book.
M: You are educating them for life, then and not just passing Friday’s test.
J: I hope so...they’ll have so much to do long after I pass out of their lives I would like to think, you know, they brought something with it.
M: Yes.
J: When we started doing the diaries they hated it. See they pick a name.
M: Oh, not their real name.
J: This one is Athena...this one Alien...M: Okay, that’s alright. They become someone else so they can write freely.
J: At first they were very stilted. Then they started going...of course everything is little
cause it’s the hobbit...I mean it’s so baby when I think of it. This is 6th grade. If you told
someone that, but they love this stuff.
M: You know what? I thought this was an 8th grade.
J: Isn’t it amazing?
M: I thought that because of what they were doing. Not their size. I can tell a 6th grader
by size, but some of these children are a little bigger. From what they were doing, I
thought it was an 8th grade.
J: And how they can control it. They weren’t getting wild, they weren’t getting silly.
M: Not at all.
J: They weren’t fighting or pushing.
M: And they were all listening to you. When you said get back to the map, he left the
music, so you were in control.
J: This is so much fun. And these were my presents to them. They came from my own
money. This is how stupid we get. This is the attack chicken. We keep them there, in the
chicken, so no one can get them. It’s a fantasy. The book is a fantasy. So why not allow
the fantasy? Cause in my mind this drifts away from them so quickly. See when they read
we have cushions, stuffed animals, I know this is 6th grade. It’s their last chance. If you
look around in the morning when we do silent reading they are laying around on the floor,
together on cushions, They’re chatting, they’re talking about it; I know they’re chatting
socially too, but that’s okay.
M: That’s good for them.
J: And it’s like the last time. And I think to myself, what did I remember from school, you
know, back then when the earth was cooling, and I remember moments. And they gave us
a rug. Let’s use the rug. They really do enjoy it.
M: That’s good.
J: So I really welcomed this opportunity to talk about this, because I really feel it is a
missed step. We all talk about it. I’ve been to so many workshops. Some get it, and some
don’t. I guess whatever you take from it, like anything else.
M: Yes. And if you’re willing to allow transmediation, and get away from paper and pencil
assessment. Just let them do this to show they understand. Let them pick something that
way. That’s not easy for a language arts teacher.
J: No, it’s not easy.
M: An arts teacher, yes. But we were so writing assessed, you know, we’re so used to
that. Do you do anything to identify the children’s intelligences, or do you just let it show
itself?
J: You know what? Here’s why I do it the way I do it. I found out that children perceive
themselves in a certain way and teachers perceive them in a certain way. Like by the end
of the year I could put a mark on the paper before reading the paper. It’s that awful.
M: I understand that.
J: You know you say oh that’s A, she’s smart. And it could be awful, but we do this. But
what I found out with multiple intelligences is the overlap surprised me.
M: From one to the other.
J: Yes. I don’t see them as separate as I used to think they were. Like I was one of those,
I was very organized. This is very hard for me. Letting kids do this. I’m one of those
people who makes lists. So it is very hard for me. Notice I had to come over and see what everyone was doing.
M: Oh you were very involved.
J: Not because I am so wonderful. It's because I can't stay out of it. Because I'm so afraid it's not going to meet the mark.
M: Well, they were also looking for you.
J: Yes.
M: You know, there were a couple saying, Mrs. P, I need you over here.
J: Yes.
M: Can we do this with the sign?
J: Yes. They are proud of that. And they are very proud of their school. They say we did that in our class. I used to label them, I found out. I would make a decision, and I would say oh that's this and that's this. And then when I saw them working, I said well that is this, but it is also that.
M: Among the intelligences?
J: Yes. And they I realized I was cubbyholing them. And then by allowing them to move, they will drift to what they need. They also know, however that they will eventually have to do a test.
M: Yes.
J: They will eventually have to do real world stuff
M: Yes. Like the summary.
J: Yes. So it forces us into the logical stuff, and I guess that's life. You know, we can't just all be let's let it all hang out.
M: Yes. well just learning real life experiences and applying it that way as opposed to something that has no application to their strengths. And I think what I am hearing is the strengths that you identified initially, you have some strengths in areas that were weak, because they are allowed to express themselves
J: That's exactly right.
And I think that's the gift of it all. They were surprised too. There were things they identified; I am the artist, I'm the this I'm the that. We have a couple of kids who don't want to do anything but draw. Well you know what? Life is not like that. It would be nice, but you're not going to have every painting sell. So you could force them to be something else, or you could allow them to be something else. But there is so much logic...and that's why they picked the map. See this group needs that; they are not the artists in the class.
the artist's want to do this stuff.
M: That's almost the visual-linguistic, the map.
J: Yes. And the spatial; they are on the ground moving around.
M: Yes. They all run together.
J: And I believe...you know they say when a baby is born it can make any sound for any language it's ever going to speak?
M: Yes. It babbles.
J: If they're in France they'll speak French.
M: Yes.
J: They can make any sound. An American baby does that too, but we give it American babble. So I'm thinking maybe that's true about the intelligences too. Maybe they are all there at birth, but by our manipulation we weaken them.
M: Remember that famous Time article on brain research and the neurons are developed by ten months, and then they are built on, the ones developed by ten months are built on. What do we do with children in the first 3 years is my question. As far as developing those neurons.

J: I’m sure you see more. Cause it’s scary. Here we are saying no, no, no, you can do this. I say Yes, you can. I never read this stuff to them. But by the end they are reciting it to me. It’s nice when one little bit goes in. And if you just give them the outlet to do it, they appreciate it so much. Not only the slower kids, but even the brighter ones. They’ve been pigeon-holed too. They’re sick of it too. The cooperative learning has done them in. They do all the work; they know that.

M: That’s true.

J: They do all the work. It’s ridiculous.

M: I can see this is definitely not cooperative learning. It’s a whole other thing.

J: I moved away from that a long time ago. For those reasons. They had our number. The kids knew. Oh good. It’s a group. I hear them say in math okay we have ten problems; you do one, you do 2, you do 3.

M: Kids know how to organize.

J: They are not that dumb. They don’t care who is the recorder. That’s her deal, that’s her job, but again that was a good step for me to move into the multiple intelligences, being really a thrust in what I do. I saw the mistakes in cooperative learning were not addressed.

M: The allocation of responsibility.

J: Yes. It was being allocated, but not to who needed it or wanted it. It just said you be this and next time you be that.

M: You’re that stereotype, so you’re taking that job. I saw the same thing and fought it terribly.

J: If any one wants to see it, move together, I can play too. But the thing is it is what you are; you bring your brain here and you offer it to me. That’s something.

M: Yes. It is something. And if someone says I see something you can do here, it’s wonderful, it’s fun and let’s go with it.

J: It’s wonderful what they can do...

M: Do they surprise you?

J: They surprise me all the time. Like the song; they could work together, think of something, come up with something...the tunnel, I said I have this tunnel home...let’s think of something, and those are my sheets. But that’s fun, that’s what they will remember.

M: Well to me you are doing what Howard Gardner suggests: translating your material into palatable real life experiences for these kids. And the fact that you say they have gone up 4 years in assessment: Isn’t it terrible we always have to assess things...but more important than that is they come in here and see what they can do, and learn what they can become. That is remarkable.

J: No matter who they are.

M: J, I want to thank you very much for this interview.

J: I am so pleased to help you.
Observation with Subject B
Franklin Lakes Middle School
May 28, 1998
2:50-3:30

Attendance taken as some left for a track meet in a neighboring town.

Bulletin board: Yes you can/ SHARES classroom with math classes which the teacher also teaches to 6th graders. Journals hanging up for The Giver, and sign that says Always reach high. 3 Mac computers and a printer. It's not how smart you are, but HOW you are smart. Easy chairs around a table laden with puzzles, instruments and school Supplies. 2 large tables with various stuffed animals, cinderblocks and basket holders strewn around under a bank of windows.
Always reach high, Hobbit map, pictures with essays hanging with clothes pins on a line.

Each student is reminded to work with words from The Hobbit and 2 sheets of vocabulary are distributed. These are due back next Friday. Listen carefully: There are several words in The Hobbit that aren't easy in chapters 14, 15 and 16: coveted, decrepit, benefactor, laden, foiled, drear, forbidden, emends, bathed, prophecies, eminent. Look them up by next Friday. Summaries will be written for next chapters and we will pick someone for chapters 18 and on. Somebody else will read it. You can't read your own. Chapters 1-5 one student reads and the rest listen to the chosen summary. Excellent job chosen by a committee. Selected student would make one addition to essay. Everyone wants to read the next summary. They do reviews of chapters then committee selects best one selected and read.

Please put diaries in the chicken basket. they all respond.

3 groups begin to form:
1. Songs, some students have chosen to work on the words and tune using a keyboard.
2. Food come out since it is a classroom birthday with drinks and cupcakes.
3. Hobbit book readers go to a group with Mrs. Prince.
   She reads aloud to 4 boys and explains words like skulking as she reads to them. Then the students take turns reading aloud.

1. Read with Mrs. Prince then she assigns oral reading and leaves the group to visit the other formed and working groups.
2. On floor making a map. One student is named Map-Man
3. Music group making a song put to music played on a keyboard. They have taken a riddle in The Hobbit and made it into a song. One student is beating a drum as one sings the song and another plays the keyboard.
4. Silent reading on floor, combined with graphics from the book making a long tunnel they go through. All the kids want to go through and they are not given an okay until an exit sign is made and in place. No one is watching a clock, everyone is very involved in activities.

When class ends, every chair is placed on a desk and most mosey out very slowly. No one is waiting for the bell.

Interview with Subject C
May 20, 1998
Eisenhower School
Language Arts Grade 7
Maureen: AM, I know you use MI in the classroom and there are many levels of implementation. If I asked you if you used it in a mechanical way everyday or a regular basis or if it was more or less a routine that is a part of your planning and again part of your everyday routine or if it is totally refined which of the 3 would you say applies to your implementation of MI in the classroom?
AM: OK. When you say refined what do you mean?
M: You use assessment in such a way that it is not pencil and paper...
AM: I don't use MI in everyday routine I’ll be honest with you, um, more spread out intermittently I use it a lot with assessment or I’ll try to use it with my delivery of instruction but I don’t put it on a daily basis.
M: OK. When you set up your curriculum in the beginning of the year do you consider MI or are you guided more or less by a traditional language arts curriculum?
AM: Our curriculum guide, if you’ve seen it, is very open. It gives us a lot of freedom.
M: Yes.
AM: I had worked on the curriculum in language arts for a lot of summers so I’ve taken part in a lot of that. But when I look at the curriculum I pretty much have the freedom to deliver in any way I want, so I consider that. I don’t like the book at all. If I need to do something in grammar, I’ll do it within the context. We do it every day with mug shots. But I create things to appeal to my students.
M: When MI is applied in the classroom do you find the students respond differently?
AM: Yes. They love it.
M: Could you explain that a bit?
AM: Sure. Just recently we completed the short story, “The Masque of the Red Death” by Edgar Allen Poe and it is a difficult story. I read it to them and I explained it to them then asked to assess them. I gave them a variety of choices that have 5 different choices and there are questions they need to answer, but they can either do a pencil and paper in terms of a song, a paper, art or they can do a skit, really creative videos, or dioramas like back here.
M: I see the dioramas. They go with this assignment, “The Masque of the Red Death”?  
AM: They do a good job and they loved it.
M: How are they assessed? What is the assessment? For instance for “The Masque of the Red Death”?
AM: Well what I have done—when I had done a similar story, “The Tell-Tale Heart” you know, little rubric things to assess them; I had them create rubrics.
M: Are these assignments, for instance, the dioramas, are they a part of the assessment process?
AM: Yes, hand created things are part of the assessment process not necessarily pencil and paper test to...
M: To assess the students?
AM: The only thing I have them do pencil and paper is vocabulary tests.
M: Do you see a change in teacher-student interaction or relationship when MI is applied in your classroom?
AM: Yes. It reminds me a lot of cooperative learning, you know, more of a facilitator role you have as a teacher.
M: So it's not Mrs. D in lecture mode at the front of the class?
AM: No. No. It's Mrs. D sitting on the couch back here with the kids all around her sort of facilitating.
M: Yes.
AM: Mrs. D walking around the room watching.
M: That really is directed at the how of my dissertation topic and as for...as the what of my topic, and I can tell from the questionnaire you answered that you don't see a change in curriculum but...
AM: See, if I were looking at the old curriculum guide I would say it changed.
M: How? How?
AM: Very...It was very delineated if you would look at it.
You know you do this this way the nouns here...you do this...you do that...and it was very boxing. You were boxed in.
M: Do the students help construct the curriculum at all? In other words, do they participate in what they are going to learn or are you more directed?
AM: I haven't gotten to the point where I'm including the students in creating curriculum. I mean, I definitely take into consideration their interests and what I think they need to learn and by looking at different writing assignments and how they are performing in the class, that sort of directs me, but they don't have a direct say like they don't know they're molding it.
M: Yes, but they are indirectly.
AM: Yes, they are indirectly...indirectly, that's the word I'm looking for.
M: How do you assess which intelligence each child possesses or does that more or less come about from what you are doing?
AM: Yes, basically from what they choose to do and their assessments. That tells me what they like to do. If one person picks to do a diorama...if another chooses to do a skit...if another chooses to do an essay which I was really surprised; a lot of kids wanted to do the essay... that pen and paper... you know write the essay.
M: Interesting. Because they are so used to it?
AM: Yes. I say you are really going to do that? You can do something else. They feel comfortable or they're just used to it, I guess.
M: Interesting.
AM: I thought that was really surprising.
M: Do you get any support for it outside of the classroom: from the district for your support of MI in the classroom, or is this something that is self-directed?
AM: It is pretty much, you know, no one has said do this or that. It is pretty much...comes from...I had done my masters project. I researched Howard Gardner's MI theory on my own. I actually looked at our curriculum to get the project back from my professor and I looked at it to include in lesson plans. I'll call him and get it to show you.
M: I'd love to see it.
AM: I'll call him. It would be useful. I wonder if he's away for the summer. I mean it was really...It was a big project.
M: As far as learning is concerned, is there personalization. Have you come that far in MI where there is time to personalize for groups or individuals within the classroom?
AM: Personalize meaning...
M: Well let’s say individualizing a particular student’s way of learning. Let’s say he comes from spatial strength, as far as intelligences are concerned. Can you maximize that for him in your curriculum?
AM: I don’t think I have. I don’t think I’ve come to that point yet. Honestly, I’d like to, but I don’t think it’s come that far.
M: What do you see as your future with MI in the classroom?
AM: What I would like is more time to plan more ideas around students and may be at the beginning of next year do a...I didn’t have time this year...little survey of each student and see where they are...you know, what they feel is their strongest area and then get a better feel for the students.
M: So the students do input and give you information about their strengths.
AM: Exactly.
M: I’m curious. Do you know your strengths? Do you know your intelligences?
AM: I’m more of a verbal. I’m not artistic...more of a verbal-linguistic. I like to write.
M: Yes. And do you find that is your major mode of working with your children?
AM: A lot of times, yes, cause that’s usually what happens.
M: It has to be a problem.
AM: Sure, yeah.
M: Does this theory affect the number of facts learned in class? Now when I say that, I don’t mean it as a tricky question, but you somewhat addressed the question about learning nouns in the Warriner’s Book... learning pronouns. Those are facts. For instance, maybe during a year you won’t get to something that would be covered, but it will be touched upon or more understandable to students rather than going for facts.
AM: You know I think you have to look at everything almost a gestalt. Something that you see as one big picture and what brings to mind last year. We did “Meet the Authors” and they researched an author, and a mini I-Search then put on a talk show with the whole group. Throughout that may be I did not teach them about a particular author or how to write a certain thing, but it came about be the process.
M: Yes.
That answers my question.
So really, the process takes precedence over discrete little facts.
AM: Exactly. We’re looking at the whole, big picture.
M: Ann Marie, thank you very much!
a paper, art or they can do a skit really creative videos or dioramas like back here.

Observation with Subject C
May 22, 1998

2 teachers on the 7th grade level representing language arts (Subject C) and social studies, gave students the opportunity to read the results of their I-Search projects with the entire 7th grade in attendance in the cafeteria to act as an audience with invited parents, teachers and administrators. It had a celebratory ambiance with food from international cookbooks provided by the students representing each country they included in their ethnic heritage.
One student of Italian heritage asked 3 questions about Leonardo DaVinci: Where was he born, what happened in his life, and what did he accomplish to make him outstanding to
future generations. After reading this introduction, giving references, and citing quotations about DaVinci, she went on to report her findings to the audience.

Another student of Irish heritage asked 3 questions about Saint Patrick: Why was he famous, where did he come from, and what impact did he have on the history of Ireland. Again, the report findings followed a given format, but what was essentially the student’s decision was where to go for information and how to make this oral report complete and interesting to this large, perhaps formidable audience.

**Interview with Subject H**

June 1, 1998  
10:30-11:00

Maureen: It’s ten:30 in the morning and I am with G, language arts teacher at Eisenhower School is with me to answer a few questions about my dissertation on multiple intelligences. My first question, G has to do with your level of implementation of multiple intelligences in the classroom, and I’m giving you a little chart to help you choose your level of implementation. How do you see your level of implementation of multiple intelligences in your classroom?

G: I’m just looking over this a minute.

M: OK

Geri: Some of these I would like a definition for. As I look at this I am looking at integration, the use of multiple intelligences in my classroom are routine, there is also a refinement there. I really am a person who uses multiple intelligences in the classroom because of student’s strengths being varied and I want to see what they have learned, not just try to test them in a way that would be easiest for me. I’m not interested in that. I really am interested in what they have learned and the application of those skills are important.

Maureen: So you are looking at refinement and integration which means that you use it more than every so often.

G: Oh, yes.

M: It’s on your mind most of your class periods.

G: Always. Especially with class assessment.

M: Alright. And can we address that idea of assessment? I would assume that you have moved away from pencil and paper assessment. Where have you moved to? Could you give me some idea?

G: Presentations, the writing of lyrics for songs, the production of music for an assessment. We have just finished a unit on Night which is Elie Weisel’s book about his experiences in concentration camps during the Holocaust, and for their assessment they were given a number of choices for their assessment. They could write lyrics, they could perform music, they could put on a skit, they could act it out. They could write a test, which becomes something a number of students like to do, cause they like that form and that organization. Other students were allowed to create poetry, personal poetry for it, some made movie posters, some made art work for it, and this became their assessment which for me is very gratifying because as a teacher it varies what I look at, it varies what I have to respond to, and that’s wonderful cause that keeps me excited, and it keeps me fresh in what I’m doing, plus it allows them to work within their strengths.
M: Okay. And when you integrate the curriculum with these purposes, do you find, going back to years before you used multiple intelligences, do you find what you are covering is different, G. For instance, the number of facts you are able to cover within a marking period, or a month or a yearly unit...do you find that you cover the same amount of curriculum. Do you find that what you choose in the curriculum has changed? What are the changes basically when you have applied MI in curriculum?

G: There's much more depth to what I can present and what is assessed when I use intelligences, rather than a straight form of regurgitation of facts...there's much more depth to the material. Students are forever bringing in ar2rk that impressed them about something we talked about in class, or something they have done. So I think there is a richness to it. There isn't less material; if anything, I cover more material. That hasn't changed drastically at all...if anything there is more depth...the depth of it, the quality of it, the substance of it. We've moved from polished cotton to velvet.

M: That's an interesting metaphor. And as far as the student-teacher relationship is concerned, do you notice any variation in that or do you notice the same, more traditional relationships

G: Wow. That's an interesting question. I would have to say I am not a traditional teacher; I would have to say I am not the sage on the stage, but the guide on the side. And so my relationship with students has always been good and strong because they don't see me as a person who is constantly judgmental; they see other material that's been created in the same intelligences of their strength, and they make the comparisons themselves without me making the comparisons. Certainly working with multiple intelligences enhances your relationship with your students because you are functioning on a number of different levels...you are functioning with them on many levels, I don't just mean the teacher himself or herself. So there's a lot of interaction in areas there might not have been before.

M: And when that interaction occurs, does it have more to do with the fact that you are dealing with real life experience rather than with something that might be dead. For instance, the old Warriner's approach to nouns, and verbs, and sentence structure, that kind of thing...Is it because you are still giving them that kind of thing when needed but is it because you are doing that in a different way that has more to do with their life experiences.

G: Yes. Exactly. Research today shows that the students in high school and middle school will have 3 different and distinct careers in their life, and that's because of technology. Things are changing so quickly, that what they know for the first fifteen years of their career will be obsolete, and won't even be there for some of them, so, so what we are seeing is 3 careers. My hope, and my intent, what I feel my purpose is, is to help them think through to solutions, and to use what they know are their best tools available. And for each person it is varied. Though with Gardner we know we all have the same intelligences, but some we have worked more to the fore than others, and that's their strength and they have to know how to get to that strength and utilize it.

M: Do they assess their own intelligence and let you know or do you assess for intelligences.

G: In the beginning of the year we do some work on intelligences and I tell them what I think the intelligences are and we put them on the board, and I ask them: what do you think; how are you smart. So we begin to put it on the board and we usually end up having
them all there, and then I ask them to list the top 3 that they think they are primarily. Then I ask them if there was one you would like to develop more, what is it, because we have them all, we just don’t choose to develop them, then I tell them during the year to target an intelligence they don’t think they have an intelligence in, and try that and see if that doesn’t open up a new avenue to them, because the solution of problems is going to be the main thrust for their lives.

M: That sounds like fun. It’s developing self as well as language arts abilities
G: It is fun. Language arts is the perfect venue...the perfect venue, because it pervades every other discipline. If you aren’t artful with your language, you can’t explain the math problem, you can’t work through the science experiment. So I have the perfect avenue to show them how it fits in every avenue of their lives. I like that.

M: It’s very interesting. Do you get support from the district, G with your attempts in multiple intelligences?
G: Oh, yes. Definitely. This is a district that really likes to see you try new things. Sometimes new things that are not going to work, and that’s fine. You know a teacher has her or his own repertoire, and it is made up of many things: it is a palette. You might keep something from Bloom’s Taxonomy, you might keep something from anticipatory set, something like that. But this is not a theory. This is based upon what each of us has inside of us.

M: Well I thank you very much for your interview, G. Things that you’ve told me are so interesting And will help me a great deal.
G: Good. Thank you.

Observation of Subject H
May 7, 1998

The observation took place in the 8th grade language arts classroom which is surrounded with posters to initiate a writing idea, but are also beautiful and appealing to all ages and interests: music, modern art, bucolic scenes, urban frenzy, emotionally appealing scenes of fear, happiness, agony, wonderment and confusion. There is an E-Mate available for each student, a computer and printer, plenty of paper to use, Warriner’s grammar books on a shelf, a poetry book for each student, dictionaries, thesaurus, and bright lighted plants. The teacher has an island consisting of her desk filled with appealing objects, pictures with uplifting sayings, family memorabilia and a podium in front of a board with a pull-down screen.

Each student had an individual sheet with “The Highwayman” by Alfred Noyes for taking notes as the class began. All students also had a book of poetry with the poem opened to that page for reading and line identification. They were told that poetry recitation would begin May 26 and that means: recite by memory, say something about the author, what does your poem mean. A test on “The Highwayman” would be held on May 12. The teacher asked questions to incite interest and attention: a great story, great clothes, a man who roams and robs in the dead of night, yet he is our hero: why? Bess the girlfriend, a trap, she has to warn him: what does this say? Simile, metaphor, personification, onomatopoeia are reviewed and students show an excellent understanding of these terms and give examples easily. The teacher reads the poem asking students to mark their papers when they hear any of this figurative language; in addition to copies at their seats, she has the poem projected.
onto the screen at the front of the classroom. Some read from both sources. 3 students follow her as readers. Calls all students Mr. or Miss. All are involved and reading along. Attention is drawn to the attitude of Noyes who has written this poem as a primer for poetry with every convention carefully phrased; the poet also laughs at Princeton. Questions concerning the poem such as the connection between the robber and Bess, why the robber comes back, why the rapier is drawn, how does the poet get us to feel a certain way, lead the students to see the characters through description, rhythm, word selection, assonance, consonance, end-rhyme, alliteration with purposely intended line scan and form. The final classroom activity: working with someone in the room do line analysis with the poem just as was modeled and finish for homework for tomorrow.